

A SOCIAL AND PSYCHOLOGICAL
DESCRIPTION OF EXTERNS IN
EDUCATIONAL ADMINISTRATION

Thesis for the Degree of Ed. D.
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Glen J. Brown

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THESIS



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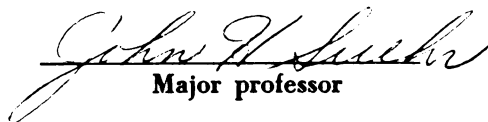
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ABSTRACT

A SOCIAL AND PSYCHOLOGICAL DESCRIPTION OF EXTERNS IN EDUCATIONAL ADMINISTRATION

by Glen J. Brown

Statement of the Problem

This study examined the relationships between scores which secondary school principals received on the Dogmatism Scale of Milton Rokeach and the Allen L. Edwards Personal Preference Schedule, instruments which purportedly measure a person's belief-disbelief system and manifest needs respectively. The sample was drawn from participants in the 1965-66 Extern Program for Practicing School Administrators, offered by Michigan State University in monthly week-end meetings.

Design of the Study

The externs were divided on the basis of their pre-test dogmatism scores into three groupings: open-minded, neither open- nor closed-minded, and closed-minded. The hypotheses stated: that pre- and post-test scores (from the beginning and end of the Extern Program) would reveal no significant changes in the dogmatism scores or in the fifteen variables of the Edwards PPS for the open- and closed-minded groups, that whatever change did occur would

be in the group neither open- nor closed-minded, and that the externs' pre-test Edwards PPS mean scores would not differ from the mean scores of the norm group. One standard error of measurement was set as a significant change on both the Dogmatism Scale and the Edwards PPS. Too, the sign test ($p = .5$) was used to test whether the direction of change on both instruments was significant. The t-test was used to determine the differences in means between the externs' mean scores on the Edwards PPS and the norm group. The Chi-square test of independence was applied to the externs' dogmatism scores to determine whether the neither open- nor closed-group changed more than the other two combined. The Kruskal-Wallis analysis of variance by the sums of ranks method was used to determine if one dogmatic group changed more than another on the EPPS variables, and on the Ideas About Myself Inventory. In all instances Alpha error was set at the .05 level of confidence or less.

This study also examined the externs' demographic data; how they evaluated their extern experiences; and, what insights they gained into their own behavior in an attempt to determine how the three dogmatic groups differed in these three respects. The findings of this study may, of course, be pertinent only to the externs who participated in it.

Conclusions

Within its limitations, this study warranted the following conclusions:

A. The Hypotheses:

1. Nineteen externs did change one standard error of measurement or more between the pre- and post-test as measured by the Dogmatism Scale.
2. The externs who were neither open- nor closed-minded had a larger percentage of changers. It is interesting to note that 45 percent of this middle group changed, 41 percent of the open-minded subjects differed, and 28 percent of the closed-minded group altered their responses. However, the t test of differences between percents did not show these dissimilarities to be significant.
3. The direction of change for the open-minded and the neither open- nor closed-minded externs was definitely toward less open-mindedness ($p < .05$); the closed-minded changed toward greater open-mindedness ($p < .05$).
4. The number of changers per variable of the Edwards PPS ranged from six on Deference to sixteen on Dominance for the closed-minded externs; and, the H_0 of no change was rejected. The direction of

change (pre- to post-test) was significant ($p < .05$) in a negative direction on Deference, Order, and Heterosexuality, and in a positive direction on Achievement.

5. For the open-minded externs the numbers of changers per variable of the Edwards PPS ranged from four on Achievement and on Order to ten on Endurance; again, the null hypothesis was rejected. The direction of change (pre- to post-test) was significant ($p < .05$) in a negative direction on Deference and Change, and in a positive direction on Autonomy and Dominance.
6. The number of changers only ranged from eight on the variables of Achievement, Deference, and Autonomy, to sixteen on Aggression; and H_0^6 was rejected. The direction of change (pre- to post-test) was significant ($p < .05$) in a negative direction on Order, Endurance, and Aggression, and in a positive direction on Affiliation and Nurturance.
7. The total difference scores per extern of all variables of the Edwards PPS yielded a significant value when submitted to the Kruskal-Wallis Analysis of Variance by the sums of ranks test ($p < .01$). So the externs clearly differed between

dogmatic groupings on their total change scores from the pre- to the post-test.

8. The externs were significantly lower ($p < .05$) than the Edwards PPS norm group on the EPPS variables of Order, Succorance, Nurturance, and Endurance, and significantly higher on Exhibition, Intraception, Dominance, Change and Heterosexuality.

B. Biographical Data:

1. Both open- and closed-minded externs were generally more influenced by their fathers while the neither open- nor closed-minded group considered their mothers more influential.
2. The open-minded externs considered themselves more intelligent than average, compared with those in the other two categories who generally ranked themselves at a medium intelligence level.
3. The closed-minded principals missed fewer days of work than either of the other two categories.
4. The mean age of the mid-dogmatic group of externs was ten years greater than the means of the other two groups, indicating an apparent youthfulness of both the open- and closed-minded groups.

5. The closed-minded subjects emphasized religion more in their homes.
6. A greater number of closed-minded externs considered themselves more stubborn than average than those from either of the other groups.
7. Open-minded externs more often rated their parents as "easygoing" than in either other group.
8. In contrast with the middle and closed-minded groups, over one-half of the open-minded group rated themselves as less self-confident than average.
9. Closed-minded externs considered themselves less sensitive to criticism than the other two groups, as well as less cooperative.

C. Rating Scale of Extern Program:

1. The Extern Program itself as opposed to any of its parts received the highest over-all rank in the thirteen items on the Form, while the school visits by the professor, the written problems, and the reactions to the written problems ranked lowest.
2. The T-group experience was ranked first by the open-minded and closed-minded externs, while the neither open- nor closed-minded subjects ranked it ninth.

D. Post-Meeting Evaluations:

Form A, Post-Meeting Reaction

1. After most sessions, the externs said they had been struggling to learn about themselves in the group.
2. Most externs felt the leaders were more like members of the group than formal directors.
3. Most externs felt that the group members encouraged them to participate.
4. According to the externs, the groups discussed relations between individuals more often than they discussed individuals themselves or how the group was functioning.
5. In most instances the leader appeared to the participants to be a neutral person.
6. The externs rated the total group as more influential than any individuals.
7. Many externs felt uncomfortable dealing with emotions expressed within the group.

Form B, Post-Meeting Reaction Sheet

1. Many more externs said they felt "very satisfied" with the meeting after the May session than after

the Fall sessions.

2. Judging from their comments, the externs became more satisfied with the meetings as the year progressed.
3. The externs felt they were usually able to express themselves adequately in the group.
4. The participants liked the non-threatening atmosphere, informality, trust, freedom, acceptance and opportunity to express their feelings. The externs objected, however, to the lack of a stated purpose in the early sessions, and expressed their need for more structure and less ambiguity.
5. Some externs said that they didn't talk enough, while others said they talked too much; several mentioned feeling inferior; and some objected to the flexibility of the group membership.
6. The externs said that future meetings could be improved by greater structure, less shop talk, more expression of feelings; they suggested maintaining consistent groupings, scheduling the meetings closer together and keeping the groups smaller.

Form C, Group Member Perception Instrument

Open-minded externs emerged the most popular, with

closed-minded subjects ranking second and the neither open- nor closed-minded ranking last.

E. Behavioral Change:

1. The externs increased in genuine awareness of their own behavior.
2. The externs were able to identify and in most cases cite examples of behavioral changes in themselves.

F. Ideas to Improve Leadership:

1. Many of the principals' ideas simply dealt with knowing what needs to be done and not how to do it, which of course supports the first principle of problem-solving: define the problem.
2. The externs increasingly saw that many of their problems are aggravated by their own restricted perceptions.
3. Many externs had begun using small discussion groups to increase communications in their schools. Through this device they hoped to increase their diagnostic ability as well as broaden their perceptions of their educational leadership task.

Implications

1. The relatively high test-retest reliability coefficient of .84, and the insignificant t tests between the pre-

and post-test means for each dogmatism group, generally support Dr. Rokeach's statement that belief-disbelief systems do not change.

2. The externs judged to be neither open- nor closed-minded tended to resemble the closed-minded. And this middle group showed greater susceptibility to change than either of the other groups.
3. The Extern Program had demonstrated itself to be an effective vehicle for change, in helping a person become more aware of his behavior.
4. The Extern Program helps practicing school administrators improve their administrative behaviors in the areas described by Miles: perceptiveness regarding social phenomena, or sensitivity; use of relevant, appropriate explanatory categories in assessing social behaviors of self and others, or diagnostic ability; and effective intervention in social situations, or action skills.¹
5. Personality is changing all of the time, and the T-group is one effective way of helping people change in the direction of greater self-awareness.
6. Any training program in human relations must consider the degree of dogmatism and the needs which restrict self-awareness in people.

Recommendations

1. The Extern Program has demonstrated its usefulness to practicing school administrators, and its format may have merit for other education departments: e.g., practicing school counselors could use this type of setting for in-service training.
2. The T-group technique was rated highly by the program participants; and, perhaps future programs should consider extending the T-group to all administrators enrolled in the Extern Program.
3. While most of the externs want the professors to visit their schools, they said the visits should be longer. The professors should clarify the purpose of these visits for future externs.
4. The writing up of personal problems should not be required for each week throughout the year; perhaps each extern could decide how many he wants to do. The reactions to the problems could be dropped early in the year or not requested at all.
5. Even though real life consists of constantly changing group structures, many benefits of T-groups depend on consistency of membership. Larger groups could be tried, since a group of ten or twelve would not suffer when one or two members were absent. But the experience

of integrating groups and new members should not be entirely abandoned as part of the training design.

6. A three day intensive T-group experience at the first or second session of the Extern Program might help unfreeze the externs for the learning experiences of the remaining week-ends. For Schein and Bennis suggest, "the first and most important attitude change is that of learning how to learn, of coming to value the meta-goals of laboratory training."²
7. Since including the wives of the externs in the January session proved so popular, perhaps the wives should be given other opportunities to attend.
8. Doctoral students in educational administration should continue as assistants in the Extern Program, since these experiences keep them close to the realities of school administrators' problems.

Further Research

1. A closer study of dogmatism in principals with longer tenure may be helpful to younger principals. For example, if large schools are generally headed by more dogmatic administrators, then would a person who scores open-minded or neither open- nor closed-minded be unhappy administering a large school?

2. Further testing of the Edwards PPS with school principals may disclose needs which distinguish school principals from teachers. Such findings might prove helpful in counseling with those who aspire to administrative advancement.

¹Matthew B. Miles, "Research Notes From Here and There, Human Relations Training: Processes and Outcomes," Journal of Counseling Psychology, VII, 4 (1960), pp. 301-306.

²Edgar Schein and Warren G. Bennis, Personal and Organizational Change Through Group Methods: The Laboratory Approach (New York: John Wiley and Sons, 1965), p. 285.

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CHAPTER I

THE PROBLEM

Introduction

In 1956 Michigan State University initiated the Extern Program for practicing school administrators. The program proved unique, for

1. it was largely self-directed,
2. it evolved from the problems of the individuals comprising the group,
3. it capitalized on self-motivation,
4. it was informal, taking place in a setting removed from the distractions of everyday life, and
5. it provided long, uninterrupted periods for discussion and interaction, with the opportunity to live together for a week-end.¹

The major objectives of the program were further summarized by Early in 1963:

1. To improve the administrator's professional competence.
2. To help him define the full task of his educational administration by analyzing its problems and practices.

¹Byron Hansford and Fred Vescolani, "Talking Shop at Week-end Seminars," The School Executive, LXXVII (April, 1958), p. 57.

3. To help the beginning administrator translate good theory into practice.
4. To promote ethical administrative practices in dealing with personnel, students, parents and the public, and in the execution of Board of Education policies.
5. To arouse a pioneering spirit in the beginning administrator, as preparation for the challenge of education in a dynamic society.
6. To develop broader, more comprehensive views of educational administration.
7. To develop high standards for the administrator in his full role as an educational leader. ²

The Extern Program, which began with thirty-nine participants in 1956, has grown to 190 participants in 1966. This growth alone would be sufficient proof of the program's contribution to Michigan's practicing school administrators.

The Need for the Study

As an integral part of each week-end experience, the Extern Program included learning procedures based on group dynamics. Specifically, one of the professors planning the externs' experiences has employed "training group" (or T-group) techniques as developed by National Training

²William J. Early, "An Evaluation and Analysis of the Extern Program in Educational Administration at Michigan State University," (unpublished doctoral dissertation, Michigan State University, 1963), pp. 13-14.

Laboratories.³ Grenville Jones stated in the School Executive: "unless the administrator understands the process of group dynamics and can function successfully in group problem-solving situations, he stands little chance of long-range success."⁴

How dogmatic a principal is influences his success or failure in his human relation's tasks. Democratic leadership springs from an open belief system, while autocratic leadership characterizes closed-minded executives. We know that a person's belief-disbelief system is established relatively early in his life, and that attempts to change belief-disbelief systems seldom succeed.⁵ But it is possible, and certainly worth the effort, to help a person see his own belief-disbelief systems through group methods. The T-group may enable people to realize the needs which choke off that self-awareness necessary to new ways of behaving; such training designs develop executives "sensitively flexible so as to both serve by controlling and control by serving."⁶ The findings of MSU's unique program,

³Leland P. Bradford, Jack Gibb, and Kenneth D. Benne, editors, T-Group Theory and Laboratory Method: Innovation in Re-education (New York: John Wiley and Sons, 1964), pp.1-14.

⁴Grenville C. Jones, "The Administrator as Problem Solver," School Executive, LXXVI (August, 1957), p. 75.

⁵Interview with Dr. Milton Rokeach, Professor of Psychology, Michigan State University, October 6, 1965.

⁶Eugene E. Jennings, The Executive (New York: Harper and Row, 1962), p. 80.

then, should help refine any school administrator training program which aims at improved human relations.

Purpose of the Study

This study investigates dogmatism, personality needs, and self-perceptions of the secondary school principals participating in the MSU Extern Program during 1965-66. It will judge the experiences of these men with the program, as reflected in their responses to a rating scale and questionnaire, and post-meeting evaluation forms. This report will focus on the personality needs of closed-minded principals and how their dogmatism is related to these needs.

The Extern Program seeks to inculcate, through increased self-knowledge, such desirable administrative behaviors as Miles described: perceptiveness regarding social phenomena (sensitivity); use of relevant explanatory categories in assessing social behaviors of self and others (diagnostic ability); and effective intervention in social situations (action skills).⁷ As Combs says, "knowing must somehow be translated into behaving"; "our behavior is a function of our perceptions, to change behavior we must

⁷Matthew B. Miles, "Human Relations Training: Processes and Outcomes," Journal of Counseling Psychology, VII (1960), p. 303.

help the person change his perceptions."⁸ Similarly, Miss Axline has pointed out that "people are learning something all of the time; [but] seldom, if ever, what someone thinks he is teaching." She adds that "we learn in many, many ways--from our experiences, our observations, our studies, our feelings, our attitudes, and from our exposure to the attitudes of others toward us."⁹

Assumptions

In this study, we shall assume (1) that measurable changes in behavior occurred as a result of the Extern Program, (2) that a relation exists between degree of dogmatism and receptivity to behavioral change, (3) that the Rokeach Dogmatism Scale can measure the rigidity of a person's belief-disbelief system, and (4) that school principals are able to identify the perceptual and behavioral changes they have experienced as a result of the Extern Program.

⁸Arthur Combs, et al., "The Syracuse Studies, Part I," Journal of Social Issues, X, 2 (1954), p. 5.

⁹Virginia Axline, "Meeting the Crisis in Educational Leadership Today," Educational Leadership, XIV (March, 1957), p. 333.

Definition of Terms

Dogmatism

A continuum of belief-disbelief systems, ranging from open-mindedness to closed-mindedness, as measured on Rokeach's Dogmatism Scale (see Appendix B).

Closed-mindedness

Those scores at least one standard error of measurement above the group mean on Rokeach's Dogmatism Scale.

Open-mindedness

Those scores at least one standard error of measurement below the group mean on Rokeach's Dogmatism Scale.

Extern Program

A continuing education seminar at Michigan State University for fully employed secondary school principals.

T-Group

Training Groups consisting of five or six persons each.

Trainers

Doctoral students at Michigan State University with experience

in directing the study of group process.

Personality Needs

The personality categories of the Edwards Personal Preference Schedule (see Appendix D).

Definition of Problem

To describe the selected population, fifty secondary school principals in the Extern Program, we must ask several questions: (1) what educational experiences characterized the Extern Program? (2) how did the externs describe these experiences? (3) what personality traits were correlated with dogmatism? and (4) to what extent did the externs change in these personality variables?

Generally speaking, the Extern Program is designed as an informal learning situation. It meets once a month during the academic year, from Saturday noon until Sunday noon, at various camp settings in Michigan. All participants are either school superintendents or elementary or secondary school principals. In most meetings, two speakers are presented from disciplines other than administration, for example, guidance and counseling, or labor-relations. The rest of the time the secondary school principals spend with two professors who are specialists in secondary school administration. One professor discusses administrative

problems with half of the group, while the rest of the principals study human relations with the other professor assisted by three graduate students. Each professor spends approximately two and one-half hours with each of these two groups during the week-end.

The participants are all candidates for the specialist or doctoral degree. Though most of the externs are young and are limited in their administrative experience, they are all practicing school administrators with full leadership responsibility in their schools. As a group, they are probably highly motivated to learn since they are willing to be away from their homes one week-end each month.

Increased knowledge of these principals' behavioral characteristics and personality needs should benefit education in general, especially when we consider the responsibility society invests in these leaders. This writer especially values his participation in this program because he is preparing to work with secondary school administrators. This study, then, will inquire into the personality make-up of these principals, and how the Extern Program has been helpful to them.

Specific Questions to be Answered by this Investigation

1. What is the distribution of dogmatism scores of these selected secondary school principals?

2. What is their distribution of scores on each of the following personality variables of the Edwards PPS?

- | | |
|------------------|----------------------|
| (1) Achievement | (9) Dominance |
| (2) Deference | (10) Abasement |
| (3) Order | (11) Nurturance |
| (4) Exhibition | (12) Change |
| (5) Autonomy | (13) Endurance |
| (6) Affiliation | (14) Heterosexuality |
| (7) Intraception | (15) Aggression |
| (8) Succorance | |

3. Are Edwards Personal Preference Schedule scores for these secondary principals significantly different from the norm group of adults?
4. What relationships, if any, exist between scores on the personality variables and those on the dogmatism scale? More specifically, are certain personality traits more characteristic of closed-minded principals than of open-minded principals while others are more typical of open-minded principals than of closed-minded? And, are any personality characteristics common to both open- and closed-minded principals?
5. Will the scores of the externs differ significantly on pre- and post-testing with the dogmatism

scale?

6. Will the scores of the externs differ significantly from pre- and post-testing with the Edwards Personal Preference Schedule?

Rationale

Based upon the review of the literature, we shall hypothesize that little significant personality change occurs in the clearly open-minded or closed-minded. The closed-minded extern, in particular, will rearrange his hierarchy of beliefs only when surrounded by authoritarian personalities who reinforce his personal belief-disbelief system. The open-minded extern, of course, already has a belief system in keeping with democratic leadership.¹⁰ Therefore, the writer suspects that the group most suspect to change on the Dogmatism Scale is that group which is not particularly open- or closed-minded. This group should also be most likely to change in their awareness of needs on the Edwards Personal Preference Schedule. Presumably the closed-minded extern will continue to screen out feedback which contradicts his belief system, while the open-minded principal will have already been aware of his manifest needs.

¹⁰Jennings, op. cit., pp. 195-234.

Significance Level and Groupings

To test the following hypotheses, we define a significant difference between pre- and post-test dogmatism scores as one standard error of measurement. The dogmatism groups were selected as follows:

1. Open-minded externs are those who scored one standard error of measurement below the mean of all externs on the Dogmatism Scale.
2. Closed-minded externs are those who scored one standard error of measurement above the mean of all externs on the Dogmatism Scale.
3. Those externs who scored within one standard error of measurement of the mean of all externs on the Dogmatism Scale are neither open- nor closed-minded.

Hypotheses to be Tested

- H_1 There will be no significant difference in dogmatism scores between pre- and post-testing on the Dogmatism Scale for those externs ascertained to be closed-minded.
- H_2 There will be no significant difference in dogmatism scores between pre- and post-testing on the Dogmatism Scale for those externs ascertained to be open-minded.

- H₃ There will be a significant difference in dogmatism scores between pre- and post-testing on the Dogmatism Scale for those externs ascertained to be neither open- nor closed-minded.
- H₄ There will be no significant difference between pre- and post-test scores on the EPPS for those externs ascertained to be closed-minded.
- H₅ There will be no significant difference between pre- and post-test scores on the EPPS for those externs ascertained to be open-minded.
- H₆ There will be a significant difference between pre- and post-test scores on the EPPS for those externs ascertained to be neither open- nor closed-minded.
- H₇ There will be no significant differences between the externs' mean scores on the Edwards PPS and the mean scores of the norm group of adults.

Instruments

To test the stated hypotheses, the following instruments

will be used:

1. Personal data forms (Appendix A).
2. Rokeach's Dogmatism Scale for determining open- and closed-mindedness (Appendix B).
3. The Edwards Personal Preference Schedule to determine personality needs (Appendix C).
4. Ideas About Myself Inventory (Appendix E).
5. Post-meeting evaluation forms (Appendix F).
6. A rating scale and questionnaire listing the extern experiences regarding behavioral changes and ideas on leadership (Appendix G).

Parameters

This study is limited to the male members of the secondary school principals who are participating in the Michigan State University Extern Program. It is further limited to dogmatism and personality needs, and the relationship between them. Since involvement of a control group appeared impractical, the writer cannot generalize his findings in relation to the general population of secondary school principals.

Overview

Following this introduction, Chapter Two presents a review of the relevant literature including theoretical

constructs as well as statements concerning personality needs and dogmatism. In Chapter Three, the design, the population, the instruments and the procedure are described in detail. Chapter Four discusses the relationships between dogmatism and personality needs, the participants' ratings of the various sections of the Extern Program, the externs' own behavioral changes, and their ideas for improving educational leadership. Finally, Chapter Five summarizes the conclusions, implications, and recommendations of the study.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This chapter will present some current definitions which highlight the importance of democratic leadership, and cite studies related to its development. We will review reports from business, industry, and education, particularly from the National Training Laboratories in human relations.

The Nature of Leadership

We might define leadership as any force that exercises authoritative control or guidance. Gordon Lippitt centers his definitions of leadership around decision-making, saying that this function "resides in the leader in the autocratic group, in the individual in the laissez-faire group, and in the group in the democratic situation."¹

MacKenzie and Corey state that leadership:

¹Gordon L. Lippitt, editor, "What Do We Know About Leadership," Leadership in Action: Selected Reading Series Two (Washington: National Training Laboratories, National Education Association, 1961), p. 7.

. . . is a name for the activities of people who are perceived by an individual or a group as providing maximum help, actually or potentially, with the means which the individual or group desires to use to attain its goals.²

On the other hand Pelz defined leadership purely as a function of the situation:

Empirical studies, as shown in reviews of the literature by Gibb, Jenkins and Stogdill, have failed to find traits that are universal in successful leaders. In different studies, different or contradictory traits in leaders are found related to whatever criterion of success is used. Differences in the situations or in the groups, from study to study, seem to be partly responsible. Gibb concludes that "leadership is relative to the situation."³

Lippitt reinforced this approach in his observations about the so-called leadership traits:

Over the past 50 years, there have been hundreds of studies made comparing physical, intellectual, or personality traits of leaders and followers. Frequently, these studies come up with a list of traits that make for "good" leadership. On the whole, this approach to leadership has been disappointing. Only 5 percent of the traits in over 106 such studies appeared in four or more studies.⁴

²Gordon N. MacKenzie and Stephen M. Corey, "A Conception of Educational Leadership," Bulletin of the National Association of Secondary School Principals, Vol. 36 (1952), pp. 9-14. Also see Gordon N. MacKenzie, et al., Instructional Leadership (New York: Teachers College, Columbia University, 1954), pp. 10 and 21.

³Donald C. Pelz, "Leadership with a Hierarchical Organization," Leadership in Action: Selected Readings Series Two, Gordon L. Lippitt, editor (Washington: National Training Laboratories, National Education Association, 1961), p. 43.

⁴Lippitt, op. cit., p. 7.

At rather greater length, Corey interprets leadership in the light of phenomenological psychology, expressed in these six propositions:

1. Most of our behavior, particularly as it involves relations with others, can be explained as our attempt to preserve our integrity, our self-respect--to maintain or build our self-esteem.
2. At the time of our action, our behavior is determined by our private, personal perception of the situation and its requirements.
3. At the time we act, we do what seems justified to us according to our view of the situation.
4. People behave differently because their perceptions of the situations to which they react differ.
5. Changed perceptions lead to changed behavior . . . the way he sees himself, his role and needs, as well as those aspects of the situation which are, in a sense, outside himself.
6. We feel satisfaction when we realize that our perceptions and our consequent behavior are considered correct and right by other members of the group or groups to which we want to belong.

He adds:

When a number of school people work together to identify problems, to create more promising ways of dealing with these problems, to put these practices into effect, and to evaluate the consequences, the perceptions of all the members of the group tend to come into closer and closer correspondence.

Effective work depends largely upon the willingness and ability of the people involved to find out how the situation looks

to the other person.⁵

Along similar lines, Combs defines a leader as ". . . one who assists, encourages, or facilitates people in the process of changing their perceptions."⁶ The leader's main task is facilitating the achievement of the educational goal through a "helping relationship," the relationship Rogers described as "one in which one of the participants [the leader] intends that there should come about, in one or both parties, more appreciation of, more functional use of the latent inner resources of the individual."⁷

Jennings, in his book The Executive, describes three leadership types: the autocratic, the bureaucratic and the democratic. Briefly, the autocratic type stems from the days of the self-made man owning his own business and in effect autonomous, a little god responsible only to himself. As businesses grew the autocrat, unable to keep his finger on every business operation, institutionalized the autocratic role in what we know as bureaucracy, through which he could still find outlets for his need to dominate.⁸

⁵Stephen M. Corey, Arthur W. Foshay, and Gordon N. MacKenzie, "Instructional Leadership and the Perceptions of the Individuals Involved," Bulletin of the National Association of Secondary School Principals, XXXV (1951), pp.83-91.

⁶Arthur W. Combs, et al., "Syracuse Studies, The, Part I," Journal of Social Issues, X, No. 2 (1954), p. 55.

⁷Carl Rogers, On Becoming a Person (Boston: Houghton Mifflin Company, 1961), p. 40.

⁸Eugene Jennings, The Executive (New York: Harper and Row, 1962), pp. 114-163.

Max Weber says the "ideal" bureaucracy has:

- 1) fixed duties
- 2) a hierarchy of offices
- 3) a consistent system of abstract rules
- 4) formal or impersonal structure
- 5) technical job qualifications and protection against arbitrary dismissal
- 6) the highest degree of efficiency.⁹

Blau, in his Bureaucracy in Modern Society, contends that the reality of a democracy is only possible through bureaucratic organization. He points out that any bureaucracy involves a paradox, for "in theory, bureaucratic superiors are expected to exert strict and impersonal control over subordinates."¹⁰ But in fact, "immediate supervisors and foremen frequently 'play ball' with their subordinates and let them 'get away with' infractions of many rules."¹¹ And, as quoted by Blau, Bernard says, "informal organization" and "unofficial norms" are necessary and at work in formal organizations. And similarly, ". . . a silent 'democracy of behavior' determines all systems of government, public or private."¹²

Jennings' third leadership type, the democratic,

⁹Peter M. Blau, Bureaucracy in Modern Society (New York: Random House, 1956), pp. 28-33.

¹⁰Ibid., pp. 35 and 54.

¹¹Ibid., pp. 69-70.

¹²Chester I. Barnard, Organization and Management, (Cambridge: Harvard University Press, 1956), p. 46.

. . . is based on the sharing orientation. The democrat practices the art of sharing himself and his administrative resources with others to the end of individual and organizational welfare. He manifests a deep confidence in the benevolent potentiality of people. This affirmative trust allows much energy that might be inhibited or turned inward in the service of the self to be directed outward in the service of others. 13

The democratic leader capitalizes upon individual differences. He sees people as individuals, each with different needs. It is important to the democratic leader to seek out these differences and discourage uniform or conforming behavior amongst his workers. He lets his subordinates know that he needs their support and talent.¹⁴

Leadership may be considered a function of the situation. So in one sense, there is a time and place for autocratic and bureaucratic, as well as democratic techniques. Both Barnard¹⁵ and Jennings suggest that the leader must know when to apply each leadership technique. For example, Jennings says

the ideal executive today blends autocracy, bureaucracy, and democracy into an effective administrative style that can be adapted to meet the evolving needs and problems of his administrative responsibility. 16

¹³Jennings, op. cit., p. 196.

¹⁴Ibid., pp. 205-206.

¹⁵Barnard, op. cit., p. 57.

¹⁶Jennings, op. cit., p. 264.

In the final pages of his book, Bureaucracy in Modern Society, Blau suggests that the "proliferation of bureaucracies . . . threatens democracy . . ." He goes on to say bureaucracies have freed man to take his duties as a democratic citizen more seriously. The question may well be how to humanize society and at the same time maintain those bureaucratic institutions which appear so necessary to the life of society. Certainly democratic ways of controlling bureaucracies must be found, or these bureaucracies may enslave the society that built them.¹⁷ For as Jennings affirms, "executives who are committed to developing and preserving democracy are greatly needed when the tendencies of power and order appear to threaten freedom and spontaneity as they do today."¹⁸

Leadership in the Schools

The insights already presented, concerning leadership in business and industry, most definitely apply to the schools as well. Ronald Corwin, for instance, confirms the necessity of bureaucratic organizations in the schools:

. . . the myth that a single administrative officer is, and should be, responsible for every occurrence in the organization--and it is known to be a myth by anyone who has

¹⁷Blau, op. cit., pp. 116-118.

¹⁸Jennings, op. cit., p. 197.

attempted to keep in touch with, and assume responsibility for, everything that goes on in a school system of one hundred teachers-- is a belief that grew out of a rural society and the one room school and which is rapidly becoming obsolete as public school systems assume the complex organizational forms that have come to characterize other institutions in this society. 19

Certainly many informal organizations exist within the formal organization of the school; Barnard's "silent democracy" is at work in the schools too. Speaking about the effect of informal groups, Brookover says that "such relationships [cliques] frequently have a role in the decision-making, and influence forces operating within the faculty of any school."²⁰ Relating this to leadership, he notes that "research has failed to reveal any personality characteristics peculiar to the leader. Persons are selected for the leadership roles through the interaction within the group. Various persons may occupy leadership positions in different situations."²¹ Peterson too stresses the informal quality of leadership, defining "real leadership" as "the ability to guide the efforts of others without using the prestige or power of position

¹⁹Ronald G. Corwin, A Sociology of Education (New York: Appleton-Century-Crofts, 1965), p. 278.

²⁰Wilbur Brookover and David Gottlieb, A Sociology of Education (New York: American Book Company, 1964), p. 332.

²¹Ibid., p. 265.

or formal office."²² And Pierce links this to education: "the methodology [of leadership] which recognizes the importance of all individuals and which encourages their creative participation in the educational program brings about the most successful action."²³

The Need for Human Relations Training

Each person begins life as a member of a group, and in maturing, adopts the cultural values of the various groups in which he finds himself. Rogers describes man's life as "a fluid and changing Gestalt, a process."²⁴ And Mead says that ". . . human meaning arises during cooperative group action";²⁵ "the organized community or social group which gives to the individual his unity of self can be called 'the generalized other'",²⁶ elsewhere called "society's representative in the individual."²⁷

²²Peterson, op. cit., p. 30.

²³T. M. Pierce, "Competence Needed for the Job," School Executive, LXXI (January, 1951), pp. 43-43.

²⁴Carl Rogers, "A Theory of Therapy, Personality, and Interpersonal Relationships, as Developed in the Client-centered Framework," in Psychology: A Study of a Science, Volume III, Sigmond Koch, editor (New York: McGraw-Hill Book Company, 1959), p. 200.

²⁵George H. Mead, On Social Psychology, Anselm Strauss, editor (Chicago: University Press, 1964), p. xxii.

²⁶Ibid., p. 218.

²⁷Ibid., p. xxiii.

The school is man's attempt to socialize children most efficiently. In a primary society such as rural America parents could teach their own norms to their children. But this is scarcely true in our highly mobile suburban society.²⁸ The charge the American people have laid on their educational leaders has never been greater; exploding populations throughout the world demand increased concern with the entire socialization process with special focus on increased use and understanding of effective human relations. Undoubtedly studies of group dynamics, such as the research from the National Training Laboratories and its subsidiaries, can help school administrators fulfill this charge.

The principal's main task is facilitating the teaching-learning process. How well he performs this task depends in part upon how well he understands the task and how well he understands himself.²⁹ Of course, school administrators must know the mechanics of operating a school; but their jobs demand far more. As Combs relates, the majority of unsuccessful school administrators are fired because of their inability to cope with human relations problems.³⁰

²⁸ Brookover, op. cit., p. 393.

²⁹ S. Gassner, et al., "Changes in the Phenomenal Field as a Result of Human Relations Training," Journal of Psychology, Vol. 58 (1964), p. 33.

³⁰ Combs, op. cit., p. 49.

More often than not they are excellent building maintenance supervisors, budget makers, schedule builders, and so forth; but they fail as managers of people because they fail to see how their own behavior affects those with whom they must work.³¹

Combs advocates the Training-group technique as a way of translating "knowing" into "behaving." This technique "grew out of a synthesis of thinking and practice in education, client-centered counseling, and perceptual personality theory."³² In his book, On Becoming a Person, summarizing research in human relations, Rogers proposes ten questions in response to the basic question, "how can I create a helping relationship?"

1. Can I be in some way which will be perceived by the other person as trustworthy, as dependable or consistent in some deep sense?
2. Can I be expressive enough as a person that what I am will be communicated unambiguously?
3. Can I let myself experience positive attitudes toward this other person--attitudes of warmth, caring, liking, interest, respect?
4. Can I be strong enough as a person to be separate from the other?

³¹Stephen M. Corey, Helping Other People Change, (Columbus, Ohio: Ohio State University Press, 1963), p. 65.

³²Combs, op. cit., p. 6.

5. Am I secure enough within myself to permit him his separateness?
6. Can I let myself enter fully into the world of his feelings and personal meanings and see these as he does?
7. Can I accept each facet of personality which this other person presents to me?
8. Can I act with sufficient sensitivity in the relationship so that my behavior will not be perceived as a threat?
9. Can I free him from the threat of external evaluation?
10. Can I meet this other individual as a person who is in process of becoming, or will I be bound by his past and by my past? 33

Rogers frankly admits that he cannot answer all of these questions in the affirmative, but offers them as guidelines. While individuals never reach perfection in the mechanics of human relationships, clearly they can grasp the spirit, the feeling, the point of view, the approach of the helping relationship.

Learning in a T-Group

As one of its aims, this study investigates the extern's personality needs. A recent study of the needs

³³Rogers, op. cit., pp. 50-55. Also see, Kenneth B. Engle, "An Exploratory Study of Significant Others in Producing Change in Self-Concept and Achievement in Secondary School Underachievers" (unpublished Doctoral dissertation, Michigan State University, 1964), pp. 7-9.

of teachers by Guba and Jackson, defines this basic idea:

The concept of "need," as is commonly used, recognizes that there are certain classes of activities in which the individual would engage if unfettered by the realities of everyday existence. Within an occupational group an examination of these chosen or preferred activities becomes important for two reasons:

- (a) it offers clues to the question of why particular individuals choose certain pursuits.
- (b) it promises to yield certain insights into such important concepts as job satisfaction, morale, and the like, through an assessment of the relative congruence between an individual's preferred activities and the demands of the work situation.

On these two grounds alone, an examination of needs seems justified in the analysis of any occupational group. 34

Murray defines a "need" as:

. . . a construct (a convenient fiction or hypothetical concept) which stands for a force (the physiochemical nature of which is unknown) in the brain region, a force which organizes perception, apperception, intellection, conation, and action in such a way as to transform in a certain direction an existing, unsatisfying situation. The best subjective criterion (of the existence of a need) is the occurrence of a wish or resolution to do a certain thing (to bring about a certain effect). 35

The Edwards Personal Preference Schedule (employed in this study) was based on Murray's needs theory; it measures

³⁴E. G. Guba and P. W. Jackson, "The Need Structure of In-Service Teachers and Occupational Analysis," School Review, LXV (1957), p. 176.

³⁵Henry A. Murray, et al., Exploration in Personality (New York: Oxford University Press, 1938), pp. 123-124.

responses in terms of fifteen variables based on the list of manifest rather than latent needs which Murray first proposed:

- | | |
|-----------------|---------------------|
| 1. Achievement | 9. Dominance |
| 2. Deference | 10. Abasement |
| 3. Order | 11. Nurturance |
| 4. Exhibition | 12. Change |
| 5. Autonomy | 13. Endurance |
| 6. Affiliation | 14. Heterosexuality |
| 7. Intraception | 15. Aggression |
| 8. Succorance | |

Since Edward's instrument is a basic tool of this study, the theory behind it deserves further clarification.

Lewis found that a person's ability to understand his own techniques for need reduction is related to how successful those techniques have proved to be. People resort to introspection in coping with their frustrations, and this naturally leads to a closer correspondence between his stated and measured ways of obtaining need reduction.³⁶

Norrell studied the relationships between the Strong Vocational Interest Blank and the Edwards Personal Preference Schedule variables, and found that certain variables on the Edwards PPS were clearly related to the

³⁶William A. Lewis, "Emotional Adjustment and Need Satisfaction of Hospital Patients," Journal of Counseling Psychology, VI, 2 (Summer, 1959), pp. 127-131.

subject's awareness or lack of awareness of his vocational interests. Trained judges accurately selected those needs characterizing the high-awareness and low-awareness groups, which are shown in Table 1.

TABLE 1.--The Needs Selected by the Judges as Differentiating the High-Awareness and Low-Awareness Groups, and the Predicted Direction of These Needs for the High-Awareness Group

Need	Direction
Achievement	High
Deference	Low
Order	Low
Autonomy	High
Affiliation	High
Intraception	High
Succorance	Low
Dominance	High
Abasement	Low
Nurturance	High
Change	High
Heterosexuality	High 37

Norrell's hypothesis, "that psychological needs which restrict self-awareness will limit the individual's ability to make accurate judgments about his vocational interests," was firmly established.³⁸ She further stated "that

³⁷Gwen Norrell and Harry Grater, "Interest Awareness as an Aspect of Self-Awareness," Journal of Counseling Psychology, VII, 4 (1960), p. 290.

³⁸Ibid., p. 289.

those needs which most clearly differentiated the high-awareness and low-awareness groups (Succorance, Order, Change) are almost classically associated with lack of capacity to use one's own resources [underlining added]."³⁹

People thus limited seek to solve their adjustment problems

. . . in dependency relationships with others or in trying to achieve certainty and inflexibility in their environments. Such an individual's behavior is determined to a large degree by people or conditions around him, not by a dynamic interaction between the individual and his surroundings. In these circumstances self-awareness must be severely limited, for the individual might find himself in conflict with aspects of his environment upon which he depends for security. 40

In a study of the independent and conformer types, Levy found that affiliation and nurturance on the EPPS are positively related to conformity and that heterosexuality was negatively related. Six other variables on the EPPS showed trends suggestive of a relationship but failed to meet the criterion of statistical significance (Order, Autonomy, Intraception and Dominance showed negative relationships while Endurance showed a positive relationship.⁴¹

³⁹Ibid., p. 291.

⁴⁰Ibid., p. 291.

⁴¹Leo Levy, "A Study of Some Personality Attributes of Independent and Conformers," (Unpublished Doctoral Dissertation, University of Washington, 1958. [Dissertation Abs.] Vol. 19, Nov.-Feb. 1958-59), p. 1823.

From all this, one should expect that dogmatism will be correlated with scores on the Edwards PPS. In fact the closed-minded extern's self-awareness may closely parallel those Edwards PPS needs variables of the low-awareness subjects in Norrell's study. Certainly the Edwards Personal Preference Schedule can illuminate some of the needs which restrict self-awareness in principals.⁴² Hopefully the Extern Program helps its participants toward a greater awareness of their needs and how they affect the group process, as well as how a person can cope with his needs in ways more beneficial to him and to his colleagues: " . . . the problem of when, how, and whom to serve or control is not freely nor easily determined."⁴³

Shepard suggests a fruitful comparison: "the ultimate value premise underlying the T-group is one which also underlies scientific work, namely, that it is a good thing to know what you are doing."⁴⁴ Whether it is always possible to resort to the methods of science for decision-making, clearly man can improve his relations with others if he will seriously study his own behavior.

⁴²Norrell and Grater, op. cit., p. 289.

⁴³Eugene Jennings, The Executive (New York: Harper and Row, Publishers, 1962), p. 113.

⁴⁴Herbert R. Shepard, "The T-Group as Training in Observant Participation," The Planning of Change, eds. Warren G. Bennis, Kenneth D. Benne, and Robert Chin (New York: Holt, Rinehart and Winston, 1962), p. 637.

A number of studies report clear gains made through such groups; for example, "human relations training leads to an increase in participants' sensitivity and understanding of interpersonal relations"⁴⁵; and "congruity between group members' self-concept and the perception of them by others increases as they meet together during a period of human relations training."⁴⁶ On the other hand, we must report another study comparing worker-ratings of two groups of foremen before and after human relations training on "Consideration" and "Initiating Structure"; Harris and Fleishman found no significant changes in these two variables.⁴⁷

In examining a group of public school principals who had participated in a laboratory training workshop, Miles used an open-ended, perceived-change measure, finding that the experimental group changed significantly more than a control group, over a ten-month period, in "sensitivity and behavioral skill." He writes, however, that change "was more apparent in organization and group-relevant

⁴⁵Gassner, op. cit., p. 34.

⁴⁶R. Burke and W. Bennis, "Changes in Perceptions of Self and Others During Human Relations Training," Human Relations, II (1961), pp. 165-182.

⁴⁷E. F. Harris and E. Fleishman, "Human Relations Training and the Stability of Leadership Patterns," Journal of Applied Psychology, 39, (1955), pp. 20-25.

behavior than in global attributes of the self."⁴⁸ Bunker measured behavioral change eight to ten months after the trainees returned to their back-home jobs. Utilizing Harrison's measured change at the completion of a laboratory session, he derived a correlation coefficient of .32 ($P < .01$; $N=57$),⁴⁹ confirming Miles' findings that measured change at the conclusion of a laboratory can predict change in the back-home situation.

We have seen that certain personality changes are both desirable and attainable. As Bennis, et al., clearly explains, we no longer can afford the luxury of assuming "automatic adjustment" to our constantly changing society:

The progression of historic events has tended to undermine rational confidence in the principle of automatic adjustment as adequate to accomplish just, equitable, and desirable re-equilibrations in persons, groups, and societies upset by accomplished or prospective technological changes. 50

⁴⁸Matthew B. Miles, "Human Relations Training--Processes and Outcomes," Journal of Counseling Psychology, VII, No. 4 (1960), pp. 301-306. See also J. B. Boyd and J. D. Elliss, Findings of Research into Senior Management Seminars (Personnel Research Department, Hydro-Electric Power Commission of Ontario. Internal Document, June, 1962).

⁴⁹Douglas R. Bunker, "The Effect of Laboratory Education Upon Individual Behavior," National Training Laboratories, National Education Association, Subscription Service Number Four (Washington, D.C.: National Education Association, 1963). (Mimeographed.)

⁵⁰Warren G. Bennis, Kenneth O. Benne, and Robert Chin (eds.), The Planning of Change (New York: Holt, Rinehart and Winston, 1962), p. 18.

We certainly know much more about the planning of change than we are currently using. The authors continue:

The relationship between theory and practice must constantly be kept within the same field of vision in order for both to cope with the exigencies of reality. We have developed a substantial body of theory and certainly a rich body of practice, but somehow our failure has been to provide the transformations and bridging between the two. ⁵¹

Of course, we should never value change for its own sake, but rather encourage planned change, change which takes into account the personality needs of the people involved and thereby helps them achieve desirable behavior patterns and a greater measure of happiness. ⁵²

The learning theory used with the externs, patterned after the National Training Laboratories (NTL), is "an experimentally-based learning technique that attempts to create an attitude of inquiry and openness toward phenomena." ⁵³ Perhaps, as Morse says, the line between teaching and therapy is hazy. ⁵⁴ The NTL, however, distinguishes

⁵¹ Ibid., p. 4.

⁵² Jennings, op. cit., pp. 204-205.

⁵³ Edgar Schein and Warren G. Bennis, Personal and Organizational Change Through Group Methods: The Laboratory Approach (New York: John Wiley and Sons, Inc., 1965), p. 329.

⁵⁴ William C. Morse, "Diagnosing and Guiding Relationships between Group and Individual Class Members," The Fifty-Ninth Yearbook of the National Society for the Study of Education (Chicago: The University of Chicago Press, 1960), p. 226.

between therapy and laboratory training: therapy is used by psychologists and psychiatrists with the mentally ill; but laboratory training is used with people who are not mentally ill, and concerns itself primarily with group processes.⁵⁵ As Whitman characterized it,

training in groups and in human relations sensitizes the individual to the group process affecting him, the influence of other individuals upon him, and his own role in causing the group and individuals to respond to him in a certain way. 56

In this sense, laboratory training reflects Dewey's and Rogers' philosophies that "we are our experience."⁵⁷

Whitehead extended this insight to its logical conclusion: "the only avenue towards wisdom is by freedom in the presence of knowledge."⁵⁸

Through the group, trainees study their own interactions in a "low-threat" situation. Each trainee must:

⁵⁵ Schein and Bennis, op. cit., pp. 328-333. Also see, Bradford, et al., op. cit., Chapters 6-14.

⁵⁶ Roy M. Whitman, "Psychodynamic Principles Underlying T-Group Processes," T-Group Theory and Laboratory Practice, eds., Leland P. Bradford, Jack R. Gibb, and Kenneth D. Benne (New York: Wiley and Sons, Inc., 1964), p. 310.

⁵⁷ John Dewey, Experience and Education (New York: Collier Books, 1963), p. 29. Also Carl Rogers, "A Process of Conception of Psychotherapy," The Planning of Change, eds., Warren Bennis, Kenneth D. Benne, and Robert Chin (New York: Holt, Rinehart and Winston, 1962), p. 373.

⁵⁸ Alfred North Whitehead, The Aims of Education (New York: The MacMillan Company, 1929), p. 40.

"(1) desire change in the area of human relations; (2) unfreeze old behavior patterns; (3) become involved in the laboratory process; (4) receive feedback on his role and performance so that he can assimilate new ways of behaving."⁵⁹

Rokeach and his associates designed an instrument, the Dogmatism Scale, "to measure individual differences in the extent to which belief systems are open or closed."⁶⁰ Rokeach defines open- or closed-mindedness as "the extent to which the person can receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside."⁶¹ And other studies verify the importance of this perspective:

those who learned most in T-Group and applied their learnings most effectively tended to be those who were described by supervisors and peers before the training as being open to new ideas and to the expression of feelings.⁶²

Indeed, the significance of this viewpoint is basic to this paper.

⁵⁹Miles, op. cit., pp. 301-306.

⁶⁰Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960), p. 19.

⁶¹Ibid.

⁶²Schein and Bennis, op. cit., p. 267.

Getzels and Thelen define personality as "the dynamic organization within the individual of those need-dispositions that govern his unique reactions to the environment and . . . to the expectations in the environment."⁶³

Rokeach has examined this dynamic organization as belief-disbelief systems:

. . . we have come more and more to view a given personality as an organization of beliefs or expectancies having a definable and measurable structure . . . we have come to conceive of man's cognitive activities--thinking, remembering and perceiving--as processes and changes that take place within a person who has already formed a system of beliefs, which we can describe and measure. ⁶⁴

To explain the matter further, Rokeach defined an attitude as "a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner."⁶⁵ A belief, he says, is "any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase 'I believe that . . .'"⁶⁶ He specifies three

⁶³Jacob W. Getzels and Herbert A. Thelen, "The Classroom Group as a Unique Social System," The Dynamics of Instructional Groups, N. B. Henry, editor (Chicago: The University of Chicago Press, 1960), p. 68.

⁶⁴Rokeach, The Open and Closed Mind, op. cit., p. 7.

⁶⁵Milton Rokeach, "The Nature of Attitudes," International Encyclopedia of the Social Sciences (To be published), p. 2.

⁶⁶Ibid., p. 3.

layers of beliefs:

1. A central region represents the person's "primitive" beliefs. These refer to all the beliefs a person has acquired about the nature of the physical world he lives in, the nature of the "self" and the "generalized other" (of G. H. Mead).
2. An intermediate region represents the beliefs a person has about authority and how people react to it.
3. A peripheral region represents the beliefs based in authority. ⁶⁷

From the Doodlebug experiments Rokeach concluded that the open-minded subjects were superior in solving those problems requiring the transfer of learning.⁶⁸ And Kemp found that in working problems requiring critical thinking, the open-minded were superior to the closed-minded persons. New experiences are approached differently by the closed-minded. They frequently find that new ideas, situations and opportunities are threatening.⁶⁹ For example, Childs found that innovative school districts have a larger proportion of open belief system teachers than did the non-innovative school districts ($p < .05$).⁷⁰ Kemp further observed that the highly dogmatic are defensive, insecure

⁶⁷Rokeach, The Open and Closed Mind, op. cit., p. 39.

⁶⁸Ibid., pp. 171-181.

⁶⁹C. Gratton Kemp, "Influence of Dogmatism on Counseling," The Personnel and Guidance Journal (April, 1961), p. 662.

⁷⁰John W. Childs, "A Study of the Belief Systems of Administrators and Teachers in Innovative and Non-Innovative School Districts" (Unpublished Doctoral Dissertation, Michigan State University, 1965), p. 3 of abstract.

and more threatened by new experience; "they are inclined to ignore, rationalize, project, distort, or narrow in their attempts to deal with it."⁷¹ Hough found evidence

that student teachers with relatively open belief-disbelief systems, who learned interaction analysis showed significantly greater change in attitudes toward the use of indirect, e.g., empathic, accepting and freedom facilitating teacher behavior than either equally open student teachers who had not learned interaction analysis, or relatively closed students who had learned interaction analysis. ⁷²

The laboratory, then, allows the participants to study these attitudes and beliefs in non-threatening ways, in short to become aware of their belief systems and determine whether their present beliefs are benefitting them in the present setting and in their back-home situation.

Rokeach himself feels that basic belief-disbelief systems never change. But we must at least admit, as this writer believes, that a person's way of coping with his belief-disbelief systems can change.

Summary

Through this review of literature, we have established

⁷¹Kemp, op. cit., p. 662.

⁷²John B. Hough and Edmund J. Amidon, "The Relationship of Personality Structure and Training in Interaction Analysis to Attitude Change During Student Teaching," Paper presented at the annual meeting of The American Educational Research Association, Chicago, Illinois, February, 1965.

alternative definitions of leadership and traced their implications, specifically for school administrators. And we have investigated previous findings about how to change "knowing" into "behaving," especially in T-Group laboratory settings.

CHAPTER III

PROCEDURES

The Sample

All subjects of this study are practicing secondary school administrators in the state of Michigan. All elected to enroll in Michigan State University's Extern Program, a continuing education seminar for post-masters degree work in school administration with monthly meetings scheduled at various camp settings in Michigan. Table 3.1 summarizes their administrative backgrounds, years of teaching, and undergraduate majors. And Table 3.2 summarizes the statistics regarding these externs' professional environments: note that pupil membership per school district ranges from two hundred to twenty-two thousand.

Because this study is concerned with dogmatism, all the statistics regarding these externs were tallied under open-minded, closed-minded, and neither open- nor closed-minded (see Appendix B-3). Apparently dogmatism most frequently characterizes high school principals, the group which has the highest proportion of closed-minded externs.

Instrumentation: Dogmatism Scale

The externs' degree of dogmatism was measured with

TABLE 3.1.--Descriptive data about the administrative positions of the externs (Personal Data Form I, Appendix A)

Code: O = Open-minded
N = Neither open- nor closed-minded
C = Closed-minded

Category	No. of Externs			
	O	N	C	Total
<u>Position</u>				
Asst. Junior High Principal	1	1	1	3
Junior High Principal	3	9	2	14
Asst. Sr. High Principal	4	2	3	9
Senior High Principal	4	8	12	<u>24</u>
				50
<u>No. Years in Present Position</u>				
1	4	8	9	21
2	3	6	5	14
3	3	1	1	5
More Than 3	2	5	3	<u>10</u>
				50
<u>No. Years Administrative Experience</u>				
(Not Necessarily in 1	1	7	3	11
present position) 2	1	2	6	9
3	5	3	0	8
More Than 3	5	8	9	<u>22</u>
				50
<u>No. Years Teaching</u>				
1	0	0	0	0
2	0	0	2	2
3	3	1	1	5
4	2	2	2	6
5	1	4	1	6
6	0	5	4	9
7	1	0	2	3
More Than 7	5	8	6	<u>19</u>
				50
<u>Undergraduate Major</u>				
Physical Education	1	3	7	11
Social Studies	8	6	5	19
Music	0	4	1	5
Agric. Education	0	1	2	3
Other	3	6	3	<u>12</u>
				50

TABLE 3.2.--Data concerning the externs' schools and school districts

Code: O = Open-minded
N = Neither open- nor closed-minded
C = Closed-minded

Category	No. of Externs			
	O	N	C	Total
<u>Grade Levels</u>				
6-8	1	3	1	5
7-8	0	3	0	3
7-9	2	2	1	5
7-12	2	4	6	12
8-12	0	0	1	1
9-12	4	4	9	17
10-12	2	1	0	3
Other	1	3	0	4
				<u>50</u>
<u>No. Pupils in School</u>				
Less than 200	1	2	0	3
200-300	0	4	1	5
301-400	1	3	3	7
401-500	2	2	6	10
501-600	1	3	2	6
601-700	2	1	1	4
More than 700	5	5	5	15
				<u>50</u>
<u>No. Pupils per School District</u>				
0-750	2	3	0	5
751-1500	1	4	8	13
1501-2500	3	4	5	12
2501-3500	0	4	1	5
3501-4500	2	1	1	4
4501-5500	2	2	2	6
5501-10,000	0	0	0	0
More than 10,000	2	2	1	5
				<u>50</u>

the Dogmatism Scale which Dr. Milton Rokeach of Michigan State University developed, a scale which purportedly measures how open or closed a person's belief system is.¹

¹Rokeach, The Open and Closed Mind, op. cit., p. 19.

Validation procedures for this instrument are summarized in Appendix B. A subject responds to the forty items on this scale according to a seven point continuum ranging from strong agreement (+3) to strong disagreement (-3). A high score on this test represents a relatively closed belief-disbelief system, defining the dogmatic person.

Rokeach has suggested that a person's belief-disbelief system may distort or screen out potentially available stimuli.² If his hypothesis is true, then people with closed systems are less aware of the feelings of others than less dogmatic people, and that relatively closed-minded people, therefore, will change less under human relations training.

The Dogmatism Scale was administered to all the externs at the first and last sessions of the program. Positive scores were obtained by adding a constant of four to each response making the range per item from one to seven points. The lowest possible score is thus 40 and the highest 280. The actual scores on the pre-test ranged from 64 to 179, with a mean of 136.36. The post-test scores ranged from 67 to 177 with a mean of 139.92. The standard deviation was 22 on the pre-test and 21 on the post-test. The standard error of measurement, based on the pre-test standard deviation and split-half (odd vs. even) reliability

²Ibid.

coefficient of .71, is twelve (see Appendix B-2). The simple correlation was used rather than the Spearman-Brown Prophecy, thus the standard error of measurement is the more conservative.

Instrumentation: Edwards
Personal Preference Schedule

The Edwards Personal Preference Schedule (PPS) administered at the second and last meetings is scored in terms of fifteen needs³ defined in Appendix D; information regarding their validity and reliability is included in Appendix C.

Additional Instruments

Personal Data Sheets (Appendix A)--A personal data sheet was used to describe the externs demographically.

Ideas About "Myself" Inventory (Appendix E)--The Ideas About "Myself" Inventory was first used in T-Group work at the National Training Laboratories in 1950. MacKenzie and Corey, then of the Horace Mann-Lincoln Institute of School Experimentation at the Teachers College, Columbia University, employed the Inventory during their work with

³Henry A. Murray, et al., Explorations in Personality (New York: Oxford University Press, 1938), pp. 123-124.

the Denver, Colorado instructional leaders workshops, 1949 to 1952.⁴ At the first administration of the instrument in Denver, the participants were asked to indicate how well they believed a statement described their present attitudes and behavior, while in a second administration the reactions were to indicate the extent to which they would like the statement to describe them; the second administration, then, revealed the subjects' aspirations concerning interpersonal relations in regard to leadership. By counting the number of items under which each person indicated dissatisfaction with his present behavior, MacKenzie and Corey were able to measure the differences in the degree of dissatisfaction which individual group members felt. The range in degree of dissatisfaction as they defined it was from 1 to 25, with a median of 7.⁵

In the present study of extern principals the instrument was similarly employed to determine pre- and post-ratings. At both administrations, however, the extern was asked to indicate how well he believed each statement described his present attitude and behavior. The major purpose of the instrument was self-evaluation, but the

⁴Gordon N. MacKenzie and Stephen M. Corey, et al., Instructional Leadership (New York: Teachers College, Columbia University, 1954), pp. 83-87.

⁵Ibid.

difference scores have been listed in table form as absolutes (see Appendix E-1).

Post-Meeting Evaluation Forms (Appendix F)--Simple evaluation forms were used as progress reports, primarily for each extern to evaluate himself in relationship to the group. They also assisted the professors and the three graduate assistants in planning programs during the year and for the next year. Responses are summarized in table form in Chapter IV.

Rating Scale of Extern Program (Appendix G-2)--The extern and extern-related experiences are listed on this form. The subject scores each item on a continuum from one to ten. These responses are displayed in table form, and discussed in Chapter IV, and items which may not be clear to the reader are described prior to the interpretation.

Treatment of Data

1. Personal Data Sheets (Appendix A)

Frequency tables are used to classify and interpret demographic data collected from the personal information sheets.

2. Dogmatism (Appendix B)

Frequency distribution tables record

the dogmatism scores on both the pre- and post-tests. A change from pre- to post-test of one standard error of measurement is considered a significant change. The sign test was used to test the direction of the number of changers per dogmatic group. The test provides a decision procedure for testing whether the alternative hypothesis of positive change predominates over the alternative hypothesis of negative change.⁶

Freund states that the binomial distribution [sign test] is the most widely used probability distribution. It applies to "repeated trials" situations and gives the probability of getting a certain number of "successes" in a given number of "trials." He states two assumptions of the binomial distribution, (1) the probability of a success is the same for each trial, and (2) the trials are independent. For this paper the Binomial Probabilities' table was used.⁷

The t tests of the differences between means and of

⁶William L. Hays, Statistics for Psychologists (New York: Holt, Rinehart and Winston, 1963), pp. 131-156. Also see: John E. Freund, Mathematical Statistics (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963), pp. 66 and 355-359.

⁷John E. Freund, Mathematical Statistics (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), pp. 66 and 355-359.

the differences between percents were applied to the pre- and post-test scores (for all of the externs and for each dogmatic group):

This test is based on the assumption that the two groups are independent, randomly selected, and that successive independent samples of sizes N_1 and N_2 from the parent population would give sampling distribution of $p_1 - p_2$ that is approximately normal. However, as in the case of the t test between means, it has been shown that considerable departure from normality does not affect the t test (underlining added). ⁸

3. Edwards Personal Preference Schedule (Appendix C)

The scores of each of the fifteen variables on the Edwards PPS are displayed in a frequency distribution table with the means and standard deviations determined for each of the fifteen variables.

The principals' scores were considered to be sample scores of the norm group used in standardizing each of the Edwards PPS variables. The Chi-square test of differences of variances was applied first (see Appendix C-3) ⁹

⁸Robert H. Koenker, Simplified Statistics (Bloomington, Illinois: McKnight and McKnight Publishing Company, 1961), pp. 100-103.

⁹Helen M. Walker and Joseph Lev, Statistical Inferences (New York: Holt, Rinehart and Winston, 1953), pp. 95-108.

and then, as no differences appeared, the t-test of differences of means for single groups (see Appendix C-5).¹⁰

4. Dogmatism and Edwards PPS

To show whether relationships exist between the degree of dogmatism (open, closed, and neither open nor closed) and the degree of change on the Edwards PPS, the Kruskal-Wallis analysis of variance was used.¹¹ Total difference scores were computed from the pre- and post-tests of the Edwards PPS, but only the pre-test of the Dogmatism Scale was used for this analysis.

The Kruskal-Wallis analysis of variances by sums of ranks, for comparing k samples (described in Appendix C-2), is a non-parametric test making the following assumptions:

1. observations are all independent
2. observations come from a single population.
3. sample populations are of approximately the same form.

Its null hypothesis is that the samples came from the same population, and are not shifted or translated with respect

¹⁰Ibid., pp. 135-140.

¹¹Ibid., pp. 436-438.

to each other.¹² H is distributed approximately as chi square with k-1 degree of freedom, where k samples come from identical populations, and the N's are not very small.¹³

Individual Edwards' variables are treated similarly to the dogmatism scores. A difference of one standard error of measurement between the pre- and post-test, per extern per variable, served as criterion for a significant change.

The sign test ($p = .5$) was used to determine whether the direction of the number of changers (negative or positive) was significant.

Analyses by Computer

Data were coded for scoring by the CDC 3600 Computer at the Michigan State University Computer Laboratory. Standard computer programs for determining means, standard deviations, t-tests, and simple correlations were used in order to test the hypotheses of this study.

¹² William H. Kruskal and W. A. Wallis, "Use of Ranks in One-Criterion Variance Analysis," Journal of the American Statistical Association, 47 (1952), pp. 583-621.

¹³ Walker and Lev, op. cit., p. 437.

Summary

This chapter described the sample (Tables 3.1 and 3.2), discussed the instruments used to test the hypotheses, and identified the statistical analyses to be used.



CHAPTER IV

ANALYSIS OF RESULTS

This chapter presents the findings of the study, first in terms of the original hypotheses, and further in terms of the externs' biographical data, ratings of the extern program, evaluations of individual meetings, inventory of ideas about "myself," behavioral changes, and ideas to improve leadership.

Criteria for Testing the Hypotheses

Alpha error was set at .05 to test the hypotheses. The binomial table was consulted to determine the significance level for directions of change, each expressed in terms of the number of positive and negative changers.¹ The criteria for change for a subject was set at one standard error of measurement (see Appendix B-2).²

¹John E. Freund, Mathematical Statistics (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1963), pp. 66 and 355-359.

²Robert L. Ebel, Measuring Educational Achievement (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1965), pp. 330-333.

Relation Between Pre- and Post-Test
Dogmatism Scores

Table 4.1 shows the pre- and post-test dogmatism scores and the computed difference scores for the externs.

The scores of nineteen externs changed at least one standard error of measurement between the pre- and post-test. Of these, thirteen became more closed-minded and six more open-minded. As predicted, the greatest number of changers occurred in the group of those neither open nor closed, 45 percent, compared with 41 percent of the open-minded externs and 28 percent of the closed-minded subjects. The t test of differences between percents was applied showing no significant differences between the dogmatic groupings (see Table 4.2).

Tests of Dogmatism Hypotheses:

Table 4.1 shows the scores of the externs; those which exceed one standard error of measurement are marked with an asterisk.

H_1 There will be no significant difference in dogmatism scores between pre- and post-testing on the dogmatism scale for those externs ascertained to be closed-minded.

$$H_{O_1} : A = B$$

where A equals the pre-test scores
and B equals the post-test scores.

TABLE 4.1.--Pre- and Post-dogmatism Scores of Externs Showing Changes.

Pre-test

$\bar{X} = 136$

S.D. = 22

S.E.M. = 12*

Split-half reliability .71

Post-test

$\bar{X} = 139$

S.D. = 21

$r_{tt} = .84$

	Open-minded (n = 12)		Differ- ence	Neither Open- nor Closed-minded (n = 20)		Differ- ence	Closed-minded (n = 18)		Differ- ence
	Pre	Post		Pre	Post		Pre	Post	
124	128		+ 4	134	140	+ 6	152	158	+ 6
118	135		+17*	131	142	+11	152	155	+ 3
121	131		+10	140	136	- 4	167	159	- 8
106	119		+13*	143	162	+19*	153	152	- 1
113	121		+ 8	132	112	-20*	151	150	- 1
089	093		+ 4	144	147	+ 3	156	151	- 5
108	135		+27*	141	133	- 8	179	177	- 2
090	089		- 1	131	137	+ 6	160	160	0
117	136		+19*	130	107	-23*	158	162	+ 4
064	067		+ 3	138	160	+22*	149	167	+18*
117	150		+33*	142	153	+11	151	146	- 5
117	110		- 7	142	136	- 6	149	135	-14*
				132	147	+15*	163	148	-15*
				133	138	+ 5	163	152	-11
				138	164	+26*	166	159	- 7
				134	150	+16*	160	146	-14*
				129	141	+12*	155	142	-13*
				125	127	+ 2	162	167	+ 5
				125	137	+12*			
				125	127	+ 2			

*A change of one standard error of measurement is considered significant.

Since the scores of five externs exceeded one standard error of measurement the hypothesis is rejected. And the direction of change is significantly toward less closed-mindedness ($p < .05$).

TABLE 4.1.1.--Pre- to Post-dogmatism Score Changers Showing the Direction of Change and Whether the Direction is Significant (Sign Test, $p = .5$) for Each Dogmatic Group of Externs

O = open-minded externs
N = neither open- nor closed-minded externs
C = closed-minded externs

O				N				C			
Direction of Change				Direction of Change				Direction of Change			
- 0 +				- 0 +				- 0 +			
0	7	5	.031*	2	11	7	.020*	4	13	1	.031**

*Direction of change toward being less open-minded is significant beyond the .05 level of confidence.

**Direction of change toward being less closed-minded is significant beyond the .05 level of confidence.

H₂ There will be no significant difference in dogmatism scores between pre- and post-testing on the Dogmatism Scale for those externs ascertained to be open-minded.

$$H_{02} : A = B$$

Since the scores of five externs exceeded one standard error of measurement on the post-test the null hypothesis

is rejected. The sign test shows the direction of change to be toward less open-mindedness ($p < .05$, see Table 4.1.1).

H_3 There will be a significant difference in dogmatism scores between pre- and post-testing on the Dogmatism Scale for those externs ascertained to be neither open- nor closed-minded.

$$H_{0_3} : A = B$$

$$H_{A_3} : A \neq B$$

Since nine externs changed one standard error of measurement or more the null hypothesis is rejected. The direction of change was significantly toward less open-mindedness ($p < .05$, see Table 4.1.1).

The data were further tested by using the t test for the difference between means. The results of the t test (see Table 4.1.2. and Appendix B-4) show no significant differences between the pre- and post-test means for each group of externs.

The t test of the difference between percents was used to test whether the extern groups differed in percent of changers. The results indicate no significant differences (see Table 4.2).

The data were also submitted to the chi-square test of independence using a two-way classification contingency

TABLE 4.1.2.--Pre- to Post-dogmatism test Means for Each Group of Externs Showing the Results of the t test

O = open-minded externs
N = neither open- nor closed-minded externs
C = closed-minded externs

Externs	Means		"t"	Sig.
	Pre	Post		
O: n = 12	107	118	-1.26	n.s.
N: n = 20	134	140	-1.49	n.s.
C: n = 18	158	155	1.18	n.s.

Tabled values: O: $t_{.95, 11d.f.} = 2.20$
N: $t_{.95, 19d.f.} = 2.09$
C: $t_{.95, 17d.f.} = 2.10$

TABLE 4.2.--Percent of Changers Between Pre- and Post-dogmatism Test Scores Compared Between Dogmatic Groups of Externs

o : open-minded externs (n = 12)
n : neither open- nor closed-minded
externs (n = 20)
c : closed-minded externs (n = 18)
 $H_0 : p_1 = p_2 = p_3$ where p = percent of changes

$$t = \frac{p_1 - p_2}{\sqrt{\frac{p_1 q_1}{N_1} + \frac{p_2 q_2}{N_2}}}$$

$$\sqrt{\frac{p_1 q_1}{N_1} + \frac{p_2 q_2}{N_2}}$$

where, p_1 = percent of o who changed
 q_1 = percent of o who did not change
 p_2 = percent of n who changed
 q_2 = percent of n who did not change
 p_3 = percent of c who changed
 q_3 = percent of c who did not change

Groups Tested	% of Changers		t	Sig.
o and n	41	45	.22	n.s.
o and c	41	28	.73	n.s.
n and c	45	28	1.11	n.s.

table. The open-minded and the closed-minded externs were combined and the other cells contained the neither open-nor closed-minded subjects. A chi-square of .70 was obtained which was not significant (see Appendix B-5).

Tests of Edwards Personal Preference
Schedule Hypotheses:

The standard error of measurement was determined for each of the Edwards PPS variables (see Appendices C-6 and C-10). The direction of change is indicated and significance levels are entered which are beyond the .05 level of confidence (Sign test, $p = .5$).

H_4 There will be no significant difference between pre- and post-test scores on the Edwards PPS for those externs ascertained to be closed-minded.

$$H_{O4} : A = B$$

Since the numbers of closed-minded externs who changed their scores one standard error of measurement or more per variable ranged from 6 on Deference to 16 on Dominance, the null hypothesis was rejected (see Table 4.3). The closed-minded externs showed significantly less need for Deference, Order, and Heterosexuality, and significantly greater need for Achievement (Sign Test, $p = .5$). The direction of change was not significant on the other variables.

TABLE 4.3.--Significant Changes on the Edwards PPS for the Three Groups of Externs, Showing the Direction of Change (Sign Test, $p = .5$)

O: open-minded externs
 N: neither open- nor closed-minded externs
 C: closed-minded externs
 (See Appendix C-9 for Externs' raw scores)

Variable	O (n:12)			Sig. Level	N (n:20)			Sig. Level	C (n:18)			
	-	0	+		-	0	+		-	0	+	
1. Achievement	3	8	1	n.s.	3	12	5	n.s.	0	10	8	.004
2. Deference	4*	7	1	.031	3	12	5	n.s.	6*	12	0	.016
3. Order	4	8	0	**	8*	10	2	.011	7*	10	1	.004
4. Exhibition	4	5	3	n.s.	5	8	7	n.s.	2	11	5	n.s.
5. Autonomy	1	6	5*	.016	5	12	3	n.s.	9	3	6	n.s.
6. Affiliation	3	2	7	n.s.	4	6	10*	.029	6	3	9	n.s.
7. Intracception	6	2	4	n.s.	4	9	7	n.s.	3	11	4	n.s.
8. Succorance	3	3	6	n.s.	7	6	7	n.s.	6	3	9	n.s.
9. Dominance	1	6	5*	.016	9	5	6	n.s.	7	2	9	n.s.
10. Abasement	4	5	3	n.s.	8	6	6	n.s.	5	7	6	n.s.
11. Nurturance	2	8	2	n.s.	3	8	9*	.019	5	7	6	n.s.
12. Change	4*	7	1	.031	7	7	6	n.s.	7	7	4	n.s.
13. Endurance	7	2	3	n.s.	8*	10	2	.011	8	6	4	n.s.
14. Heterosexual-ity	3	4	5	n.s.	5	7	8	n.s.	7*	9	2	.020
15. Aggression	4	6	2	n.s.	11*	4	5	.038	7	8	3	n.s.
Total	53	79	48		90	122	88		85	109	76	

*Significant beyond the .05 level of confidence.

**Four or fewer changers not treated.

The Chi-square test of independence between the totals yielded a non-significant number (see Appendix C-10).

H₅ There will be no significant difference between the pre- and post-test scores on the Edwards PPS for those externs ascertained to be open-minded.

$$H_{0_5} : A = B$$

Since the numbers of externs who changed their scores one standard error of measurement or more per variable ranged from 4, on Achievement and Order, to 10 on Endurance (see Table 4.3) the null hypothesis is rejected. The direction of change was significant in a negative direction for the variables of Deference and Change and in a positive direction for Autonomy and Dominance.

H₆ There will be a significant difference between the pre- and post-test scores on the Edwards PPS for those externs ascertained to be neither open- nor closed-minded.

$$H_{0_6} : A = B$$

$$H_{A_6} : A \neq B$$

Since the numbers of externs who changed their scores one standard error of measurement or more per variable ranged from 8 on Achievement, Deference and Autonomy to 16 on Aggression, the null hypothesis was rejected. The direction of change was significant in the negative direction for the variables of Order, Endurance, and Aggression; and in the positive direction on Affiliation and Nurturance.

The results of the t test of the difference in means for each variable by dogmatic groupings showed the variable of Affiliation to be significant for the neither open- nor closed-minded group ($p < .05$), and the variable of Achievement to be significant for the closed-minded externs. None of the other variables were significant for any one of the three groupings.

The Kruskal-Wallis computation (of analysis of variance by sums of ranks) was employed to further test hypotheses four, five and six. The pre- and post-test scores of the Edwards PPS were divided on the basis of the pre-dogmatism scores. The difference scores on each variable were then computed for each subject. And these difference scores were used to test the difference between the sums of ranks of the three dogmatic groupings.

$$H_0 : \Sigma R_o = \Sigma R_n = \Sigma R_c$$

where o = open-minded externs

n = neither open- nor closed-minded
externs

c = closed-minded externs

and R = ranks.

$$H : \Sigma R_o \neq \Sigma R_n \neq \Sigma R_c$$

The null hypothesis was rejected ($p < .01$). The ranks, showing the results, are displayed below in Table 4.4 (also in Appendix C-2).

TABLE 4.4.--Pre- to Post-test Edwards PPS Total Difference Scores of all Variables for Each Extern Showing the Kruskal-Wallis Analysis of Variance by Sums of Ranks (One Criterion of Classification) By Dogmatic Groupings*

*O : open-minded externs

N : neither open- nor closed-minded externs

C : closed-minded externs

O		N		C	
Score	Rank	Score	Rank	Score	Rank
28	2.5	26	1.0	30	4.5
34	9.0	28	2.5	31	6.0
36	12.5	30	4.5	32	7.0
44	17.5	35	11.0	34	9.0
44	17.5	40	14.5	34	9.0
46	23.0	40	14.5	36	12.5
47	25.5	45	20.0	43	16.0
52	35.0	45	20.0	45	20.0
52	35.0	47	25.5	46	23.0
57	39.0	48	27.0	46	23.0
58	40.0	50	30.0	49	28.0
61	42.0	50	30.0	50	30.0
		51	32.5	52	35.0
		51	32.5	54	37.5
		54	37.5	64	44.0
		60	41.0	65	45.5
		62	43.0	68	48.5
		65	45.5	89	50.0
		67	47.0		
		68	48.5		
Σ Ranks	298.5		528.0		448.5
N	12		20		18

χ^2 is significant beyond .01 level of confidence.

TABLE 4.5.--Ranges and Means of Unranked Total Difference Scores for Externs on Edwards PPS

	Range	Means
Open-minded (n = 12)	28-61	46.6
Neither open- nor closed-minded (n = 20)	26-68	48.1
Closed-minded (n = 18)	30-89	48.2

Relation Between Externs'
Edwards PPS (Pre-test) Scores
and Norm Group

H₇ There will be no significant differences between the externs' mean scores (pre-test) and the mean scores of the norm group.

$$H_0 : \bar{E} = \bar{N}$$

where E = Externs and N = Norm Group

The Chi-square test for differences in variances was used (see Appendix C-4), and it revealed no differences. The t-test for differences of means for single groups was then applied. Table 4.6 shows the results of the "t" test statistic. The null hypothesis was accepted for six variables and rejected for nine, Order, Inhibition, Intraception, Succorance, Dominance, Nurturance, Change, Endurance, and Heterosexuality (see Appendix C-3, C-4, C-5 and C-6).

TABLE 4.6.--Relationships of Externs' Edwards PPS Scores (Pre-test) to Norm Group

Variable	Norm Group N = 4031		Externs N = 50	Sig. "t"
	Means	S.D.	Means	
1. Achievement	14.79	4.14	14.08	0.860
2. Deference	14.19	3.91	12.96	1.587
3. Order	14.69	4.87	11.09	3.945**
4. Exhibition	12.75	3.99	14.30	-2.070*
5. Autonomy	14.02	4.38	13.12	1.067
6. Affiliation	14.51	4.32	13.56	1.177
7. Intraception	14.18	4.42	17.40	-3.474**
8. Succorance	10.78	4.71	8.48	2.663*
9. Dominance	14.50	5.27	18.26	-4.153**
10. Abasement	14.59	5.13	12.82	1.738
11. Nurturance	15.67	4.97	12.82	2.961**
12. Change	13.87	4.76	16.76	-3.072**
13. Endurance	16.97	4.90	14.42	2.584*
14. Heterosexuality	11.21	7.70	16.32	-3.697**
15. Aggression	13.06	4.60	13.36	-0.324
Consistency Score	11.35	1.96	11.08	0.607

*Sig. at .05 level of confidence.

**Sig. at .01 level of confidence.

(Nimnicht's study of school administrators found them significantly higher than the normative group on the Edwards PPS variables of Deference, Order, and Intracception and significantly lower on needs for Exhibition, Autonomy, Heterosexuality, and Aggression.³ The present study supports Nimnicht on only three variables, Order, Exhibition and Heterosexuality.)

To identify the variables which contributed the most to the externs' Edwards PPS change scores, Figures 4.1, 4.2, and 4.3 were constructed. These figures also demonstrate the ipsative character of this scale. Note the differences in distances from the grand mean between the three groups of externs, especially the flattening-out of the group neither open- nor closed-minded.

Biographical Data

Biographical data for the externs was obtained on Personal Data Form Two (Appendix A-2). Table 4.7 tabulates the responses, arranged according to whether the respondent was open-minded, neither open- nor closed-minded, or closed-minded.

³Glendon Perrin Nimnicht, "A Study of Successful Superintendents and their Leadership Ability," (Unpublished Doctoral Dissertation, Stanford University, 1958, D.A. 19:720).

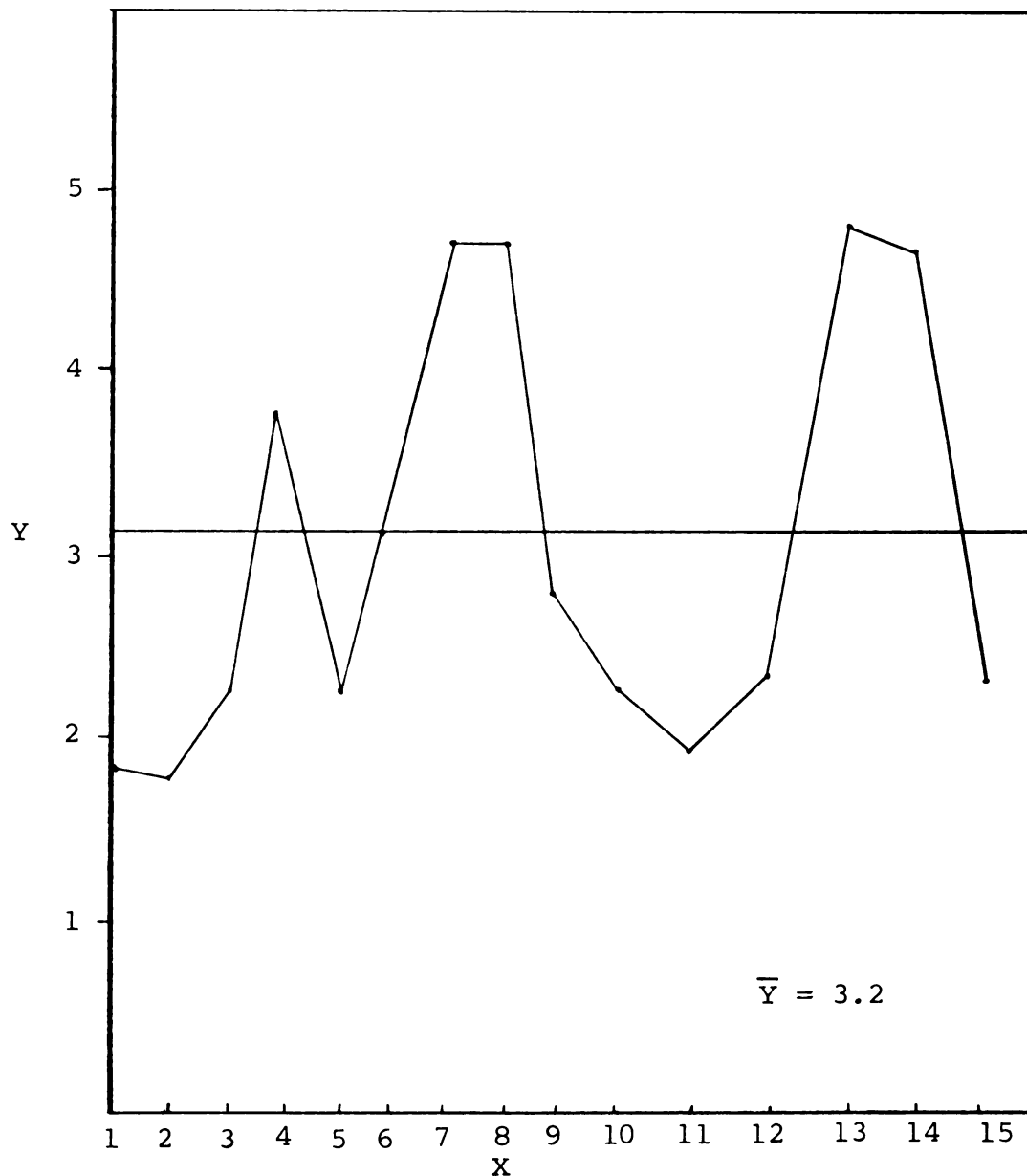


FIGURE 4.1.--Open-minded Externs' (n = 12) Total Score Difference (Pre-Post Test) Means for Each Variable of the Edwards PPS in Relation to the Grand Mean.

	<u>Variable</u>	
Y : means per variable	1	Achievement
	2	Deference
X : variables	3	Order
	4	Exhibition
	5	Autonomy
	6	Affiliation
	7	Intracception
	8	Succorance
	9	Dominance
	10	Abasement
	11	Nurturance
	12	Change
	13	Endurance
	14	Heterosexuality
	15	Aggression

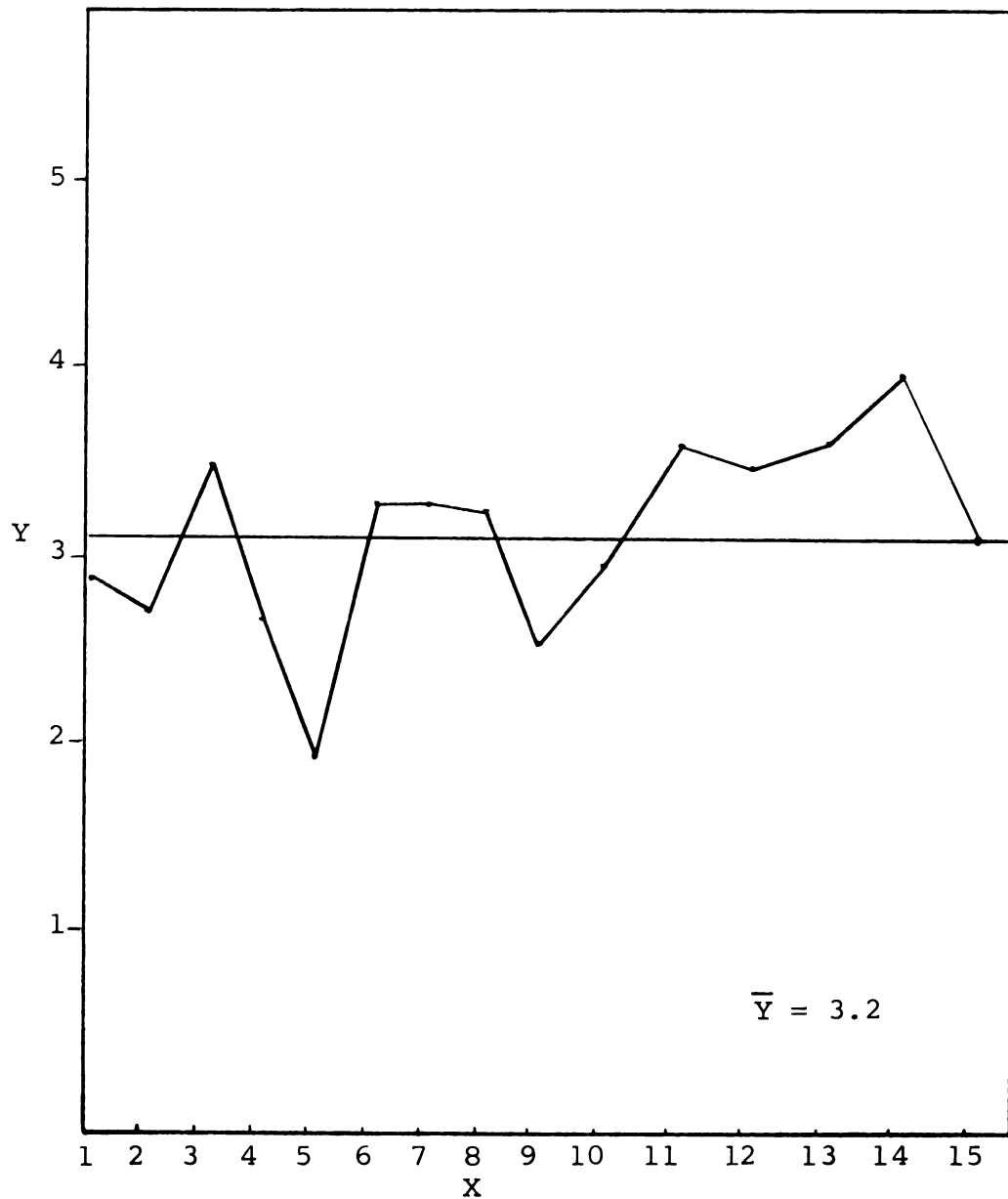


FIGURE 4.2.--Neither Open- nor Closed-minded Externs' (n = 20) Total Score Difference (Pre- Post-test) Means for Each Variable of the Edwards PPS in Relationship to the Grand Mean.

Y : means per variable

X : variables

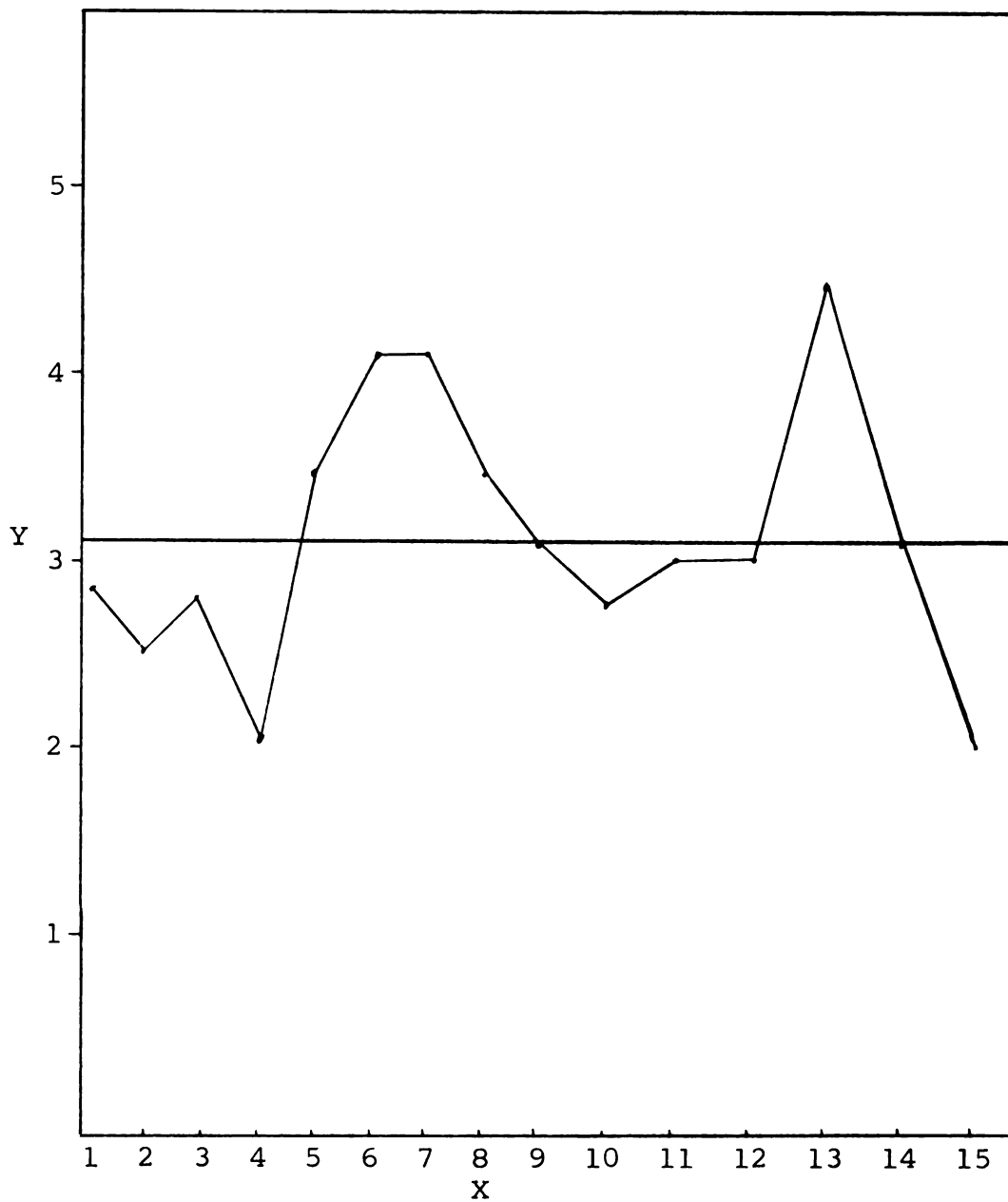


FIGURE 4.3.--Closed-minded Externs' (n = 18) Total Score Difference (Pre- Post-test) Means for Each Variable of the Edwards PPS in Relationship to the Grand Mean.

Y : means per variable

X : variables

TABLE 4.7.--Summary of Biographical Data of Externs from Personal Data Form Number Two (Appendix A-2) Administered at the End of the Extern Program

Code: O = open-minded externs (n = 12)
 N = neither open- nor closed-minded
 externs (n = 20)
 C = closed-minded externs (n = 18)

Personal Data

1. How many brothers and sisters do you have?

	<u>Range</u>	<u>Mean</u>
O	0 - 12	3.2
N	0 - 11	2.5
C	0 - 10	2.1

2. Which one of your parents influenced you more?

	<u>Mother</u>	<u>Father</u>	<u>Both</u>
O	1	8	3
N	14	6	0
C	7	11	0

3. What do you estimate your level of intelligence to be: high, medium, or low?

	<u>H</u>	<u>M</u>	<u>L</u>
O	5	7	0
N	7	13	0
C	3	15	0

. . . continued

TABLE 4.7.--Continued

4. What is your position among your brothers and/or sisters? (Consider the oldest as number 1.)

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>10</u>	<u>P</u>
O	5	3	1	1	1	0	1	2.4
N	10	4	3	0	0	2	0	2.1
C	7	4	2	4	0	1	0	2.4

(p : position)

5. How many days of work have you missed during the past year for any reason?

	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>11</u>
O	4	4	2	2	0	0	0	0
N	6	3	5	0	2	0	4	0
C	10	1	2	2	1	1	0	1

6. Everyone has feelings of rejection at times. Do you feel that you have these feelings more, less, or about average in comparison to other people?

	<u>More</u>	<u>About Average</u>	<u>Less</u>
O	2	8	2
N	0	13	7
C	1	13	4

TABLE 4.7.--Continued

7. Do you feel that you are working as a principal to your fullest capacity?

	<u>Yes</u>	<u>No</u>
O	0	12
N	4	16
C	1	17

8. Do you feel that you are more friendly, less friendly, or about the same in friendliness as the general population?

	<u>M</u>	<u>S</u>	<u>L</u>
O	6	5	1
N	10	8	2
C	13	4	1

9. What is your age in years?

	<u>Range</u>	<u>Mean</u>	<u>Median</u>
O	26-42	34.5	37
N	27-54	44.5	39
C	28-49	35.9	32

10. How would you rate your frequency of worrying as compared to other principals: more frequent, about average, or less frequent?

	<u>Mf</u>	<u>Aa</u>	<u>Lf</u>
O	3	8	1
N	0	16	4
C	2	9	7

TABLE 4.7.--Continued

11. If something arises in your life which is unforeseen and unwelcome, to what degree does this upset you:
 (1) considerably and for an extended time; (2) at the moment, but I soon recover; (3) hardly at all, I just make the best of it?

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>
O	1	8	3
N	0	19	1
C	0	16	2

12. Do you feel that you are fulfilling your parents' fullest expectations?

	<u>Yes</u>	<u>No</u>
O	11	1
N	15	5
C	17	1

13. What is your feeling in regard to your personal appearance? Is it above average, average, or below average?

	<u>Aa</u>	<u>A</u>	<u>Ba</u>
O	3	8	1
N	6	14	0
C	6	12	0

TABLE 4.7.--Continued

14. What place does religion occupy in your home: (1) strongly emphasized, (2) emphasized, (3) not emphasized, or (4) no religion?

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(4)</u>
O	2	6	4	0
N	4	10	5	1
C	2	14	2	0

15. Where would you classify the social status of your parents: upper class, middle class, or lower class?

	<u>U</u>	<u>M</u>	<u>L</u>
O	0	9	3
N	1	16	3
C	0	16	2

16. How would you classify the income level of your parents: high, medium, or low?

	<u>H</u>	<u>M</u>	<u>L</u>
O	1	8	3
N	2	12	6
C	2	11	5

TABLE 4.7.--Continued

17. Where would you rank yourself in comparison to the average person in degree of stubbornness: more, less, or average?

	<u>M</u>	<u>A</u>	<u>L</u>
O	1	8	3
N	4	12	4
C	8	6	4

18. How would you rate the amount of physical sickness you have had: more than average, average, or less than average?

	<u>M</u>	<u>A</u>	<u>L</u>
O	0	2	10
N	2	3	15
C	1	1	16

19. How would you classify your habits of retiring and rising: (1) early retiring and early rising, (2) early retiring and late rising, (3) late retiring and early rising, or (4) late retiring and late rising?

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(4)</u>
O	6	0	3	3
N	6	0	12	2
C	4	0	9	5

TABLE 4.7.--Continued

20. Would you classify your parents as leaning toward the efficient type or the more easy going type?

	<u>Eff.</u>	<u>Eas.</u>
O	3	9
N	9	11
C	10	8

21. How many close friends would you say you have?

	<u>1-5</u>	<u>6-9</u>	<u>10 plus</u>
O	3	1	8
N	5	4	11
C	4	3	11

22. How would you rate your self-confidence: more than average, average, or less than average?

	<u>M</u>	<u>A</u>	<u>L</u>
O	3	2	7
N	7	4	9
C	8	2	8

23. How would you rate your sensitivity to criticism: more than average person, less than average person, or about the same as average person?

	<u>M</u>	<u>A</u>	<u>L</u>
O	5	6	1
N	6	9	5
C	4	11	3

TABLE 4.7.--Continued

24. How would you rate your degree of cooperativeness:
more than average person, less than average person,
or about average?

	<u>M</u>	<u>A</u>	<u>L</u>
O	8	4	0
N	14	6	0
C	9	9	0

25. How would you rate the degree to which you hide your
true feelings: more than most persons, about the
same as most persons, or less than most persons?

	<u>M</u>	<u>A</u>	<u>L</u>
O	4	3	5
N	8	9	3
C	5	7	6

26. How would you evaluate the quality of your early
schooling and general education: good, average or
poor?

	<u>G</u>	<u>A</u>	<u>P</u>
O	2	7	3
N	11	9	0
C	8	9	1

TABLE 4.7.--Continued

27. How would you rate your degree of sticking to a job until finished: better than average, average, or not so good?

	<u>B</u>	<u>A</u>	<u>N</u>
O	7	5	0
N	14	5	1
C	12	4	2

28. How would you rate your ambitions: above average, average, or below average?

	<u>Aa</u>	<u>A</u>	<u>Ba</u>
O	7	5	0
N	13	7	0
C	11	7	0

29. How would you rate your reaction to failure: (1) it bothers me considerably, (2) it bothers me but I soon recover, or (3) I don't let it bother me?

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>
O	4	7	1
N	10	8	2
C	10	8	0

TABLE 4.7.--Continued

30. How would you classify your personality in regards to being mainly concerned with just yourself: (1) interests are generally outside of myself, (2) most of my interests are for myself although I do have some outside interests, or (3) my interests are mainly for myself?

	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>
O	5	7	0
N	8	11	1
C	5	13	0

All the data from this form may have some value, showing for example how most of the externs possess relatively healthy self-concepts. And yet some categories revealed no significant differences among the groups. Let us set down, then, several of the clearest comparative conclusions which a subjective survey of these data supports.

In item two, both open- and closed-minded externs said they were more influenced by their fathers, while neither open- nor closed-minded externs list their mothers as more influential. In estimating their level of intelligence (item 3), the open-minded externs consider themselves more highly intelligent than do the other two

categories which indicate large proportions of medium intelligence levels. Under item 5, closed-minded principals seemed to miss fewer days from work than either of the other two categories. The mean age of the middle group of externs (item 9) extends ten years beyond the means of the other two groups, indicating an apparent youthfulness of the more open- and closed-minded groups. Religion (item 14) is seemingly emphasized more in the homes of the closed-minded subjects. And, though not necessarily correlated with the preceding, a significantly greater number of externs who were closed-minded considered themselves stubborn (item 17) than did those from either of the other two groups. Open-minded subjects more often said that their parents were easy going than either of the other groups on item 20. And in contrast with the middle and closed-minded groups, one-half of this open-minded group rate themselves less than average on self-confidence (item 22). In item 23, closed-minded persons considered themselves less sensitive to criticism than the other two groups, and similarly in item 24, less cooperative.

Rating of Extern Program
(Appendix G-2)

The externs were asked to rate each of thirteen extern or extern-related activities on a continuum from one to ten. The ratings were tallied for each item within the

designated categories of open, closed, or neither open-nor closed-minded. The respective rankings thus derived for each group are listed in Table 4.8 along with the mean ratings and ranges in each case.

Most of the items on the Extern Rating Scale are either self-explanatory or have been explained previously. But a few of the items need further explanations. One of the Extern Program leaders suggested items 6, 7 and 11 as activities which might help the principals gain a better understanding of their schools. The student and the teacher morale forms consist of forty sentence stems which the student or the teacher makes into complete sentences, for example:

"This school . . . "*

These statements are evaluated on a continuum from 0 to 4, where 0 indicates a highly positive statement and 4 a highly negative statement. The total score indicates whether the individual's morale is high or low. An administrator can thus identify the items contributing to low morale and take steps toward improvement. Although these two studies were not compulsory, most of the principals conducted both in their schools.

*Information regarding these forms may be obtained from:

Dr. John Suehr, Associate Professor
of Educational Administration
Room 408 Erickson Hall
Michigan State University
East Lansing, Michigan

TABLE 4.8.--Ranking of Extern Program Experiences by Dogmatic Groupings (N = 50)

O = open-minded, N = neither open- nor closed-minded, C = closed-minded

Number and Name of Activity	Rank	Open (n = 12)			Middle (n = 20)			Closed (n = 20)		
		Activity Number	Mean	Range	Activity Number	Mean	Range	Activity Number	Mean	Range
1. The Extern Program	1.	2	8.6	5-10	7	8.2	5-10	2	8.8	6-10
2. The T-group	2.	1	8.4	7-10	13	7.9	3-10	1	8.4	1-10
3. The small group discussions	3.	5	7.9	7-9	1	7.7	6-10	3	8.0	3-10
4. The large group discussions	4.	11	7.9	2-10	6	7.7	4-10	7	8.0	5-9
5. The after class discussions	5.	6	7.6	6-10	11	7.6	6-10	5	7.7	4-10
6. The student morale study	6.	7	7.6	3-10	12	7.2	5-10	11	7.0	5-10
7. The teacher morale study	7.	3	7.3	5-10	5	7.4	1-10	6	7.0	4-10
8. The written problems	8.	12	6.6	4-10	4	7.1	4-9	13	6.9	4-10
9. The reactions to the written problems	9.	13	6.3	1-10	2	7.1	4-10	4	6.1	3-9
10. The school visits by the professor	10.	4	5.4	2-10	3	7.1	3-9	12	6.1	0-10
11. The weekly small group interaction meetings with your teachers	11.	10	5.3	1-9	10	5.7	0-10	10	4.8	0-10
12. Independent reading	12.	8	3.4	0-8	8	5.1	2-9	8	4.6	0-9
13. January cram sessions	13.	9	3.1	0-8	9	4.3	1-10	9	3.9	0-9

Items which appear on the chart as 2 or 3 way ties are correctly ranked on the basis of decimal places not listed.

The weekly small group interaction meetings with the teachers, again a voluntary activity, involved the principal setting aside one full day each week just to meet with teachers during their planning periods throughout the school day. If approximately the same number of teachers were scheduled for planning each hour of the day, a school of sixty teachers with a six hour day would have ten teachers per group. These groups had no formal structure, but they definitely helped remedy the all too common lack of intra-school and intra-community communications where principals continued the weekly sessions. Some principals also met with student groups, and a few tried working with parents, students and teachers grouped together.

Each participant was asked to write about a problem he had encountered during the week (items 8 and 9) according to the following suggested formats:

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1. Most people have specific problem concerns about their work situation. What would you state as a major working situation or relationship that you would like to understand or be able to deal with more effectively?
2. What do you think of as causing and maintaining this situation?
3. What would have to happen in order to bring about some desirable change in this situation?
4. How might you help to bring about such a desirable change?

Problem Solving

1. What is the problem?
2. Who has the problem?
3. Who is the source of the problem?
4. What type of problem is it?
5. What forces are operating in this problem situation?
6. How can change be brought about?

General Phases for Implementing
Change Within an Organization

The members of the organization who are affected by the change:

1. Should be helped to identify or become aware of the need for a change.
2. Should be helped to openly express their feelings and hear the feelings of others about a change.
3. Should be helped to share in making the decision on exactly what the change should consist of.
4. Should be helped to share in the planning of just how the change should take place.
5. Should be helped to informally agree to assist with the change.
6. Should be helped to take on responsibilities for seeing that the change gets implemented.

During the following week, the principal was to write down his reflections on the problem, especially how he might solve it another time. Several principals commented that analyzing a problem changed their perceptions of it, sometimes removing it just that simply.

Item 13, the January Cram Sessions, brought the externs and their wives to the Michigan State University campus, while the externs heard speakers of their choice, the wives met with the regular staff in T-group sessions. The externs reported later that this session had been very helpful to them in their domestic relations since their wives could now better understand why their husbands needed the Extern Program, especially the T-group.

Certainly the opinions revealed in this rating form should be used critically to improve similar programs in the future. For example, comments on item 10 indicated that some principals imperfectly understood the purpose of the school visits by the professor, feeling they were too short and too few. Another year some time should be spent explaining that these visits are designed simply so the professor can get a brief look at their school in session.

Eighteen principals made brief comments explaining their low rating of items 8 and 9, generally indicating that although the process was helpful, it became too repetitious. Several felt that the writing took too long; a few indicated that they stopped writing out problems after having done a few. Some wanted more time in the extern program to discuss problems they had written. Nearly all the externs felt the reactions to the problem (item 9) were an absolute waste of their time. It might be well,

again, to discuss this feature of the program with the 1966-67 externs at the first session.

All in all, the high ratings the externs gave reveal strongly favorable feelings toward the Extern Program and its related activities. A later section will describe some of the behavioral changes they attributed to their extern experiences. But this quote from one of the extern's evaluations may sum up the chapter:

I consider the Extern Program the most profound experience I have ever had in fourteen years of work in education--and by far, the most meaningful college graduate experience ever.

Post-Meeting Evaluations

The extern program stressed the objective of self-direction; one result of this policy was that post-meeting evaluations were not always gathered, and so this discussion covers only the October, November, February and May sessions. But there is one other reason for this limitation: the evaluation forms were distributed only to the T-group sessions. This section is further limited of course by the subjectivity which any discussion of the evaluations must involve.

The initial small groups of six or seven persons, established at the first meeting, were separated into two larger divisions, X and Y, which met on different weekends. If a member of an X group had a conflict on his particular

weekend, he could attend the Y group meeting. Since many of the externs exercised this option, the groups were continually confronted with visitors and corresponding absences. Because of this flexibility, it was not feasible to describe all the externs' evaluations solely in terms of the three classifications of dogmatism with which this study is partially concerned.

The externs were told simply that they were to build a group and study their own behavior in the process. The evaluation instruments described here set out to help these individuals evaluate themselves during that difficult process of group formation.

Evaluation Form A

Each extern completed this form at the conclusion of the fall,* December and February sessions. As the participants objected to so many different kinds of evaluation forms, Form A and Form C were discontinued after the February meetings. Each part of the evaluation form is presented here separately. The responses are arranged according to the participant's degree of open-mindedness, defined for this form according to the following scale:

*This discussion utilizes the evaluation forms taken from the X groups in the October meeting and from the Y groups in November; each was the first T-group meeting for the groups involved.

Open-minded: (o) : a score of 124 or less.
 Neither open- (n) : a score of 125 through
 nor closed-minded: 148.
 Closed-minded: (c) : a score of 149 or higher.

1. What sort of progress was the group making?

	O	N	C	Totals
	%	%	%	%
A. Maintaining (interaction)	26	23	12	20
B. Moving	33	39	61	44
C. Grouping	35	38	27	34
D. Blocking	3	0	0	1
E. Planning	3	0	0	1
Totals	100	100	100	100

2. How did the leader act?

	O	N	C	Totals
	%	%	%	%
A. Purposefully	26	29	20	24
B. Like a member	41	36	34	37
C. Watchfully	16	19	31	22
D. Withdrawn	0	4	5	3
E. Compulsively	7	6	0	4
- . No leader	10	6	10	10
Totals	100	100	100	100

3. In general, how do you feel the group reacted to your participation?

	O	N	C	Totals
	%	%	%	%
A. With encouragement	50	35	37	39
B. With neutrality	13	37	35	31
C. With disagreement	15	14	8	12
D. With discouragement	10	8	0	6
E. With agreement	7	6	20	12
Totals	100	100	100	100

4. What did the group seem most concerned about?

	O	N	C	Totals
	%	%	%	%
A. Individuals	36	30	24	29
B. Its task	20	6	14	12
C. Meaning of its experience	14	24	7	15
D. Itself	0	6	18	9
E. Relations between individuals	30	34	37	35
Totals	100	100	100	100

5. How did the leader seem to feel about what was going on?

	O	N	C	Totals
	%	%	%	%
A. Resigned	22	24	10	18
B. Exuberant	8	7	6	7
C. Resistant	8	9	20	12
D. Neutral	43	30	31	34
E. Confident	8	21	27	20
-. No leader	11	9	6	9
Totals	100	100	100	100

6. Who had the most influence?

	O	N	C	Totals
	%	%	%	%
A. Reciprocal influence	28	45	21	33
B. The group dominated	14	2	19	11
C. The leader influenced	14	22	19	20
D. The leader dominated	4	4	7	5
E. The group influenced	40	27	34	31
Totals	100	100	100	100

7. What did the group do with its emotions?

	O	N	C	Totals
	%	%	%	%
A. Expressed discomfort at them	54	42	30	41
B. Gave in to them completely	0	0	2	1
C. Accepted and described them	17	40	34	32
D. Were unaware of them	7	8	18	11
E. Utilized them to understand its problem	22	10	16	15
Totals	100	100	100	100

8. How satisfactory do you feel the meeting was?

	O	N	C	Totals
	%	%	%	%
A. Fair	36	37	20	32
B. Excellent	7	12	22	14
C. Good	47	45	54	48
D. Terrible	3	4	0	2
E. Poor	7	2	4	4
Totals	100	100	100	100

It is interesting to note that for most of the questions each group differed substantially from both other groups on at least one item.

Evaluation Form B

Evaluation Form B was used more consistently than Forms A or C. Although the members did not sign their names, they did indicate the number of their group when completing Form B. Groups 1 and 2 were composed predominantly of open-minded externs, groups 3 and 4 contained equal numbers of open- and closed-minded externs, and groups 5 and 6 included mostly closed-minded externs. (In tabulating this form, an extern scoring at or above the mean of 136 was considered closed and an extern scoring below 136 was considered open.)

Completed forms were selected for this discussion from the October-November (Fall), February, and May meetings. While the divisions between groups were maintained in the Fall and in May, in the February session the small groups were allowed to join another group if they so desired; in most instances groups combined with others. (The trainers observed that the closed externs held out more than the open ones for "my own group.") Responses are organized according to meeting and dogmatism classification.

1. How did you feel about this meeting?

(1)* 	(2) 	(3) 	(4) 	(5)
Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied

Open (Groups 1 and 2)

	1	2	3	4	5	Total Externs
Fall	0	2	5	6	2	13
May	0	0	0	6	5	11

Mixed (Groups 3 and 4)

	1	2	3	4	5	Total Externs
Fall	1	3	3	5	2	14
May	1	2	1	12	3	19

Closed (Groups 5 and 6)

	1	2	3	4	5	Total Externs
Fall	0	4	6	8	2	20
May	0	2	3	10	5	20

*For convenience in describing the responses to this scale, the categories have been numbered. These numbers did not appear on the instruments scored by the externs.

Mixed (All Groups)

	1	2	3	4	5	Total Externs
Feb.	0	6	3	12	5	26

2. Please comment on why you felt this way.

Open

Fall

I was afraid of criticism.*

I was confused over the lack of structure and purpose.

I got to know the group members.

I felt that the discussions were frank.

I didn't trust the members.

May

I felt there was too much shop talk.

I felt that the members were not serious enough.

I was very interested.

I felt that we had a good group.

I expressed real feelings.

*These are sample comments only.

Mixed

Fall

I didn't know what to do.
I was prevented from asking questions.
I considered the meeting pointless.
I thought the interaction was good.
I just don't know.

May

I was involved.
I felt the meeting was interesting and meaningful.
I expressed sincere feelings.
I felt we were not a group.
I can use the information that was shared.

Closed

Fall

I wanted to erase the authority figure.
I felt relaxed.
I needed more structure.
I felt that there were too many barriers.
I was not expressing myself.

May

I was not threatened.
I was actively involved.
I learned about the effects of some of my behavior.

I was interested.

I don't like the combined groups.

Mixed

February

I feel as if I'm going somewhere, without knowing where.

I expressed sincere feelings.

I learned more about how others see me.

I was interested.

I feel that learning was taking place.

I didn't feel comfortable during the silences.

I needed more interaction.

I felt that we took too long getting started.

I felt a part of the group.

I wanted more "here and now" discussion and less "there and then."

3. Were there times when you wished to speak but did not?

(1)	(2)	(3)	(4)	(5)
Never	A few times	Fairly often	Very often	Almost all the time

Open

	1	2	3	4	5	Total Externs
Fall	3	9	3	0	0	15
May	4	11	1	1	0	17

Mixed

	1	2	3	4	5	Total Externs
Fall	2	10	0	1	1	14
May	3	12	3	1	0	19

Closed

	1	2	3	4	5	Total Externs
Fall	0	18	2	0	0	20
May	5	15	1	1	0	22

Mixed

	1	2	3	4	5	Total Externs
February	2	36	7	3	0	48

4. What things helped you to take part in this meeting?

Open

Fall

I felt that I was needed.

I felt free to express myself.

I shared feelings.

I got acquainted with members.

I liked the small group size.

May

I liked the non-threatening climate.

I really wanted to talk.

I felt real good about the members of the group.

I felt that I was trusted and could trust.

I felt that the talk was very real.

Mixed

Fall

I like to talk.

I felt that people were interested in me.

I felt that we had a common interest.

I liked the way questions were directed at me.

I believe we are a group.

May

I felt that I was a part of the group.

I understood myself better.

I know the group members.

I was comfortable.

I liked the friendliness of the group.

Closed

Fall

I did not feel threatened.

I wanted to be a part of the group.

I felt that we all wanted to form a group.

I liked the informality.

I felt that the trainer was helpful.

May

I felt that the climate was relaxed and comfortable.

I found it easy to talk.

I liked the confidence and trust that I felt in the group.

I felt accepted by the group.

I felt real concern for each other in the group.

Mixed

February

I think my interest in the other members.

I felt that others were expressing feelings.

I liked the questions from the professor.

I felt secure.

I felt that the members were sincerely interested in me.

I know the members.

I felt involved.

I was interested.

I needed to express myself.

I sensed that we were open and honest with our feelings.

5. What things hindered you from taking part in the meeting?

Open

Fall

I felt that there was too much ambiguity.
I thought there were too many petty problems.
I felt a lack of purpose.
I didn't know the others.

May

I felt the group was too small.
I talked too much.
I didn't want to dominate.
I wanted less shop talk.

Mixed

Fall

I needed more structure.
I didn't like the tape-recorder.
I wanted to know the purpose.
I talked too much.
I lacked the incentive to participate.

May

I felt a lack of concern.
I wasn't sure that my expression of feelings
was desired.
I didn't like the fact that we were a new
group again.
I wondered what others thought.

Closed

Fall

I felt a lack of trust.

I felt that the group was not interested in my comments.

I felt that the staff hindered me.

I felt a lack of purpose.

May

I still have feelings of insecurity.

I don't like this new group business each time.

I didn't have anything to say.

I think a particular member talks too much.

Mixed

February

I talk too much.

I wasn't expressing my true feelings.

I don't like two groups meeting together.

I don't feel complete trust.

I feel that certain people turn me off.

I think there was too much small talk.

I missed some of our regular members.

I felt inhibited by the strangers in the group.

I wasn't sure of how to proceed.

I felt that others were not ready to change.

6. How could our next meeting be improved?

Open

Fall

I need more direction from the leaders.
I want to stick with the assignment.
I want to stay in the same group.
I should express more of my real feelings.
I need to know the purpose of this process.

May

I want more t-groups.
I should talk less.
I should be more active.
I would like to include the superintendents and elementary principals in our groups.

Mixed

Fall

I need leadership.
I feel that we need more time.
I think we should stick to the "here and now."
I suggest that we develop a purpose.

May

I like smaller groups.
I need to be more concerned.
I want more straight t-grouping.

Closed

Fall

I feel that we should continue t-groups.
I need a clear purpose.
I want to know more about the group members.
I need to clarify "here and now."

May

I feel that we need smaller groups.
I would rather stick in the same group all year.
I suggest that the groups be kept small.
I would like to group on basis of interest.

Mixed

February

I would like the meetings closer together.
I would rather meet only with our group.
I want more of the same.
I need to listen more carefully to what is being said.
I would like more feedback from our group members.
I would like to change the make-up of the groups.
I wish we could pick up where we left off at the last session.
I would like to discuss the nature of t-groups.
I wish the leaders would insist on everyone participating.

Form C, Group Member Perception
Instrument

As mentioned earlier, Form C was used only after the Fall, December and February meetings. The data were tallied, yielding a score for each person which ranged, on each of the four items, between zero and fifteen. This range was subdivided into three smaller ranges, and the number of choices were converted to percentages and computed separately for each division according to dogmatism (see Table 4.9). Appendix F-5 shows the actual times chosen per extern, identified by dogmatism score only.

The data tend to show that the open-minded externs were the most popular, that the neither open- nor closed-minded principals were the least popular, and that the closed-minded externs ranked between the other two groups in popularity.

Ideas About "Myself" Inventory
(Appendix E)

This instrument served primarily to encourage the extern in his task of evaluating his self-concept. Still, an absolute change score was computed for each extern between the pre- and post-tests. Table 4.10 shows the results by dogmatic groupings. And, Table 4.11 shows the results of the Kruskal-Wallis analysis of variance by sums of ranks test.

TABLE 4.9.--Percentages of Externs Chosen for Each Item of Form C by Dogmatic Groups.

O = open-minded externs

N = neither open- nor closed-minded

C = closed-minded

- Items:
1. What three people in your Group seem to be most like you in the way they think, act and feel?
 2. What three people in your Group seem to express their feelings most easily in the group?
 3. What three people in your Group do you feel would make the best secondary school principal?
 4. What three people in your Group seem to have most increased their understanding of themselves and philosophy of education?

		O (n = 12)	N (n = 20)	C (n = 18)
		%	%	%
Item 1	1-5	100	100	100
	6-10	75	55	55
	11-	25	0	16
Item 2	1-5	100	95	100
	6-10	83	45	61
	11-	41	5	33
Item 3	1-5	100	95	100
	6-10	83	50	66
	11-	33	0	11
Item 4	1-5	100	95	100
	6-10	83	55	66
	11-	41	10	16

TABLE 4.10.--Ideas About "Myself" Inventory Absolute Change Scores Between the Pre- and Post-Tests by Dogmatic Groupings of Externs

O = (n = 12) open-minded

N = (n = 20) neither open- nor closed-minded

C = (n = 18) closed-minded

	Mean	Median	Range
O	23.5	23.5	18-30
N	21.3	20.5	12-31
C	23.1	23.5	16-29

$$H_0 : R_O = R_N = R_C$$

Where, O : open-minded externs

N : neither open- nor closed-minded externs

C : closed-minded externs

R : ranks

$$H : R_O \neq R_N \neq R_C$$

The null hypothesis of no differences between ranks was accepted (see Table 4.11 and Appendix E-1).

TABLE 4.11.--Number of Changes From Pre- to Post-test on the Ideas About "Myself" Inventory for each Extern by Dogmatic Groups.* And the Ranks and Results of the Kruskal-Wallis Analysis of Variance by Sums of Ranks Test

*O : open-minded externs

N : neither open- nor closed-minded externs

C : closed-minded externs

O		N		C	
Change Score	Rank	Change Score	Rank	Change Score	Rank
17	7	12	1	16	5.0
18	8.5	14	2.5	16	5.0
19	10.5	14	2.5	19	10.5
22	23.0	16	5.0	20	15.0
22	23.0	18	8.5	21	19.5
23	27.0	20	15.0	22	23.0
24	30.5	20	15.0	22	23.0
26	38.5	20	15.0	22	23.0
27	42.5	20	15.0	23	27.0
27	42.5	20	15.0	23	27.0
27	42.5	20	15.0	24	30.5
30	48.5	21	19.5	25	34.5
		24	30.5	25	34.5
		24	30.5	26	38.5
		25	34.5	26	38.5
		25	34.5	28	45.5
		26	38.5	28	45.5
		27	42.5	29	47.0
		30	48.5		
		31	50.0		
$\Sigma R = 344.0$		$\Sigma R = 438.5$		$\Sigma R = 492.5$	
$\bar{R}_O = 28.6$		$\bar{R}_N = 21.9$		$\bar{R}_C = 27.3$	

H : 1.89

Tabled value of χ^2 .95, 2 d.f. is 5.99; so it appears that the externs did not differ in how they ranked in number of changes between the pre- and post-tests of the Ideas About "Myself" Inventory.

Behavioral Change

As a second part of the Extern Program evaluation the participants were asked to answer the following (Appendix G-3):

Please list behavioral changes that you have observed in yourself this year which you attribute to the Extern Program. Also, indicate behavioral changes which have been called to your attention by others with whom you live and/or work. Please identify the person by title only (e.g. student, wife, janitor, etc.).

Although such a subjective instrument could never be precisely analyzed, it has seemed at least reasonable to underline discrete behavioral changes indicated, and later consolidate them into broader categories for tallying. The freedom of the request permitted the externs to describe behavioral changes in constructs that were both meaningful to them and relevant to their situations.

Some externs responded only briefly, while others used an entire page to describe one behavioral change. It would be presumptuous to try to judge these changes, for they have meaning only as far as the extern believes in them. This paper, then, will merely categorize and describe the changes which they identified and not attempt to rank one behavioral change as more important than another in any way.

TABLE 4.12.--Ranges and Means for Numbers of Behavioral Changes Indicated by Externs by Dogmatic Groupings.
(N = 50)

		Range	Means
Open-minded	n = 12	1 - 9	4.6
Middle	n = 20	0 - 13*	5.2
Closed	n = 18	1 - 12	5.6

*Three indicate no changes.

Open-minded

I am a more open person.
I am more willing to express myself.
I am more tolerant of myself and others.
I am more aware of my own behavior.
I am an improved listener.
I believe people are important.
I feel more secure.
I am happier.

Middle

I am more relaxed and happier.
I have a greater compassion for people.
I am more aware of self-other relations.
I can express feelings more easily.
I see myself as part or all of many problems.

I am aware that planned change is necessary.

I am more willing to look at myself and accept criticism.

I consult more with others.

Closed

I am an improved listener.

I am more tolerant.

I am more frank and honest with my feelings.

I am not so concerned with little things.

I am a better group worker.

I am more relaxed.

I have less fear of authority figures.

I am more open towards criticism.

In many instances the principals indicated that other persons had observed these changes in behavior, especially their wives and close friends. The following quotation, though longer than most, seems to express the sentiments of many externs quite well.

I see myself as being more understanding of others than previously. I have a much better relationship with my wife and family. We are closer than ever before (a grand feeling). I see myself relating to my immediate superiors more effectively in speaking out and giving my opinions whether or not they are in agreement.

At school, students confide in me and I see a good relationship existing here even though I feel that a few students take advantage of our relationship.

I still find myself somewhat reserved, but am working to overcome this. I think I understand

myself better than ever before and realize that many of the problems I have faced are as much my fault as that of others (more my fault in many instances).

Recently a student stated that I should be a guidance counselor rather than a principal because I try to understand them (students) and listen to them. I think other students (from the human relations class especially) see me as their friend rather than one of authority (I still have the respect that goes with the position from them). They come to the office frequently to talk and always speak when we meet in the hall or classroom.

My wife states that we have more fun together and are closer than we have ever been before. My children talk and express themselves more than they ever have before. I feel this is because of the more relaxed atmosphere (not Laissez Faire) we have at home. The family really hates to see me leave for an overnight trip and have expressed this. Previously they said goodbye if around, but didn't seem to have much concern about my being gone.

I really believe these changes have taken place because of my experiences in the extern program and the training laboratory at Camp Kett. I think this program should be extended in time (perhaps two years) as well as having teachers participate.

Ideas to Improve Leadership (Appendix G-4)

The last part of the evaluation instrument requested ideas for improving leadership in the externs' schools.

It read as follows:

Please write down your suggestions for improving educational leadership in your school. What is the biggest problem you face each morning in trying to improve the educational program in your school?

The open-minded principals presented twenty-eight different ideas for improving leadership. Except for two externs who mentioned facilities and money, these ideas centered around improving communications. The ideas of the open-minded principals, categorized inductively, included:

Involve all people.

Listen and hear.

Organize interaction groups.

Help students and teachers meet their needs.

Keep raising the question, "what should a
good school be like?"

As with the open-minded externs, two principals of the mixed groups mentioned money and facilities. But the remaining eighteen ideas could be organized into the following:

Remain open to ideas of others.

Encourage group decision making.

Encourage in-service training.

"Listen to what is being said, not just the
words that are spoken."

Allow that my way may not be the only way.

Allocate time more wisely.

Be willing to make change.

After again mentioning money, the closed-minded principals presented these ideas:

Involve all persons affected.

Improve flow of ideas.

Free leaders from clerical work.

Encourage visitations by students, teachers
and patrons to other schools.

Make more classroom visits.

Most of these ideas for improving educational leadership suggest what to do rather than how to do it. Again, changing "knowing" into "behaving" remains a difficult task.³

The Principals' Most Important Problem

The externs were each asked to name the most important problem they face each morning concerning the educational program in their school. The open-minded group most often cited organizing time, and trusting oneself and others. Lack of time, personal inadequacies, and inflexibility were mentioned most often by the mixed group. Closed-minded principals most often spoke of inability to communicate ideas; fixed attitudes toward self, students and teachers; and routine chores.

Generally the externs seem to be aware that changes must be planned and that this planning must involve those most affected by the proposed changes. Perhaps the prin-

³Arthur Combs, et al., "The Syracuse Studies, Part I," Journal of Social Issues, X, 2 (1954), pp. 1-5.

cipals have sharpened their diagnostic ability and become aware of how their self-perceptions affect planned change. Perhaps, through all this, they have brought theory and practice closer together in their leadership.

Summary

The results of this study were presented in this chapter. Where appropriate, tables were constructed to show the findings more clearly; items which revealed differences between the divisions of dogmatism were discussed. Inferences were drawn from the extern program evaluation forms for updating portions of the program and for substantiating certain aspects of the present format.

In Chapter Five, the conclusions, implications, and recommendations inherent in this study are discussed.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

In brief, this study explores the relationship between scores which fifty secondary school principals received on two instruments while participating in the 1965-66 Extern Program at Michigan State University, the Dogmatism Scale of Milton Rokeach and the Allen L. Edwards Personal Preference Schedule, instruments which purport to measure a person's degree of open-mindedness and manifest needs respectively. The investigation expands on some of the experiences these school administrators had as externs, and their reactions to them. And, finally, the study offers evidence concerning behavioral changes which the externs perceived in themselves and attributed to the Extern Program and related experiences.

The externs were divided on the basis of their pre-test dogmatism scores into three groupings: open-minded, neither open- nor closed-minded, and closed-minded. The hypotheses suggested: that pre- and post-test scores (from the beginning and end of the Extern Program) would reveal no significant changes in the dogmatism and Edwards PPS

scores for the open- and closed-minded groups, that whatever change did occur would be in the group neither open- nor closed-minded, and that the externs' pre-test Edwards PPS mean scores would not differ from the mean scores of the norm group. Throughout the study, one standard error of measurement constituted a significant change.

This study also attempted to determine how the three dogmatic groups differed in demographic background, evaluation of extern experiences, and insights gained into personal behavior.

Conclusions

Within its limitations, this study warrants the following conclusions:

A. The Hypotheses:

1. Nineteen externs did change one standard error of measurement or more between the pre- and post-test as measured by the Dogmatism Scale.
2. The externs who were neither open- nor closed-minded had a larger percentage of changers. It is interesting to note that 45 percent of this middle group changed, 41 percent of the open-minded subjects differed, and 28 percent of the closed-minded group altered their responses. However, the t test of differences between percents did not show these

dissimilarities to be significant.

3. The direction of change for the open-minded and the neither open- nor closed-minded externs was definitely toward less open-mindedness ($p < .05$); the closed-minded changed toward greater open-mindedness ($p < .05$).
4. The number of changers per variable of the Edwards PPS ranged from six on Deference to sixteen on Dominance for the closed-minded externs; and, the H_0 of no change was rejected. The direction of change (pre- to post-test) was significant ($p < .05$) in a negative direction on Deference, Order, and Heterosexuality, and in a positive direction on Achievement.
5. For the open-minded externs the numbers of changers per variable of the Edwards PPS ranged from four on Achievement and on Order to ten on Endurance; again, the null hypothesis was rejected. The direction of change (pre- to post-test) was significant ($p < .05$) in a negative direction on Deference and Change, and in a positive direction on Autonomy and Dominance.
6. The number of changers only ranged from eight on the variables of Achievement, Deference, and

Autonomy, to sixteen on Aggression; and H_0^6 was rejected. The direction of change (pre- to post-test) was significant ($p < .05$) in a negative direction on Order, Endurance, and Aggression, and in a positive direction on Affiliation and Nurturance.

7. The total difference scores per extern of all variables of the Edwards PPS yielded a significant value when submitted to the Kruskal-Wallis Analysis of Variance by the sums of ranks test ($p < .01$). So the externs clearly differed between dogmatic groupings on their total change scores from the pre- to the post-test.
8. The externs were significantly lower ($p < .05$) than the Edwards PPS norm group on the EPPS variables of Order, Succorance, Nurturance, and Endurance, and significantly higher on Exhibition, Intraception, Dominance, Change and Heterosexuality.

B. Biographical Data:

1. Both open- and closed-minded externs were generally more influenced by their fathers while the neither open- nor closed-minded group considered their mothers more influential.

2. The open-minded externs considered themselves more intelligent than average, compared with those in the other two categories who generally ranked themselves at a medium intelligence level.
3. The closed-minded principals missed fewer days of work than either of the other two categories.
4. The mean age of the mid-dogmatic group of externs was ten years greater than the means of the other two groups, indicating an apparent youthfulness of both the open- and closed-minded groups.
5. The closed-minded subjects emphasized religion more in their homes.
6. A greater number of closed-minded externs considered themselves more stubborn than average than those from either of the other groups.
7. Open-minded externs more often rated their parents as "easygoing" than in either other group.
8. In contrast with the middle and closed-minded groups, over one-half of the open-minded group rated themselves as less self-confident than average.
9. Closed-minded externs considered themselves less sensitive to criticism than the other two groups,

as well as less cooperative.

C. Rating Scale of Extern Program:

1. The Extern Program itself as opposed to any of its parts received the highest over-all rank in the thirteen items on the Form, while the school visits by the professor, the written problems, and the reactions to the written problems ranked lowest.
2. The T-group experience was ranked first by the open-minded and closed-minded externs, while the neither open- nor closed-minded subjects ranked it ninth.

D. Post-meeting Evaluations:

Form A, Post-meeting Reaction

1. After most sessions, the externs said they had been struggling to learn about themselves in the group.
2. Most externs felt the leaders were more like members of the group than formal directors.
3. Most externs felt that the group members encouraged them to participate.
4. According to the externs, the groups discussed relations between individuals more often than they

discussed individuals themselves or how the group was functioning.

5. In most instances the leader appeared to the participants to be a neutral person.
6. The externs rated the total group as more influential than any individuals.
7. Many externs felt uncomfortable dealing with emotions expressed within the group.

Form B, Post-meeting Reaction Sheet

1. Many more externs said they felt "very satisfied" with the meeting after the May session than after the Fall sessions.
2. Judging from their comments, the externs became more satisfied with the meetings as the year progressed.
3. The externs felt they were usually able to express themselves adequately in the group.
4. The participants liked the non-threatening atmosphere, informality, trust, freedom, acceptance and opportunity to express their feelings. The externs objected, however, to the lack of a stated purpose in the early sessions, and expressed their need for more structure and less ambiguity.

5. Some externs said that they didn't talk enough, while others said they talked too much; several mentioned feeling inferior; and some objected to the flexibility of the group membership.
6. The externs said that future meetings could be improved by greater structure, less shop talk, more expression of feelings; they suggested maintaining consistent groupings, scheduling the meetings closer together and keeping the groups smaller.

Form C, Group Member Perception Instrument

Open-minded externs emerged the most popular, with closed-minded subjects ranking second and the neither open- nor closed-minded ranking last.

E. Behavioral Change:

1. The externs increased in genuine awareness of their own behavior.
2. The externs were able to identify and in most cases cite examples of behavioral changes in themselves.

F. Ideas to Improve Leadership:

1. Many of the principals' ideas simply dealt with knowing what needs to be done and not how to do it, which of course supports the first principle of problem-solving: define the problem.

2. The externs increasingly saw that many of their problems are aggravated by their own restricted perceptions.
3. Many externs had begun using small discussion groups to increase communications in their schools. Through this device they hoped to increase their diagnostic ability as well as broaden their perceptions of their educational leadership task.

G. Ideas About "Myself" Inventory:

There was no difference between the three dogmatic groupings in the number of changes the principals saw in themselves at the end of the extern program.

Implications

1. The relatively high test-retest reliability coefficient of .84, and the insignificant t tests between the pre- and post-test means for each dogmatism group, generally support Dr. Rokeach's statement that belief-disbelief systems do not change.
2. The externs judged to be neither open- nor closed-minded tended to resemble the closed-minded. And this middle group showed greater susceptibility to change than either of the other groups.

3. The extern program has demonstrated itself to be an effective vehicle for change, in helping a person become more aware of his behavior.
4. The extern program helps practicing school administrators improve their administrative behaviors in the areas described by Miles: perceptiveness regarding social phenomena, or sensitivity; use of relevant, appropriate explanatory categories in assessing social behaviors of self and others, or diagnostic ability; and effective intervention in social situations, or action skills.¹
5. Personality is changing all of the time, and the T-group is one effective way of helping people change in the direction of greater self-awareness.
6. Any training program in human relations must consider the degree of dogmatism and the needs which restrict self-awareness in people.

Recommendations

1. The Extern Program has demonstrated its usefulness to practicing school administrators, and its format may

¹Matthew B. Miles, "Research Notes From Here and There, Human Relations Training: Processes and Outcomes," Journal of Counseling Psychology, VII, 4 (1960), pp. 301-306.

have merit for other education departments: e.g., practicing school counselors could use this type of setting for in-service training.

2. The T-group technique was rated highly by the program participants; and perhaps future programs should consider extending the T-group to all administrators enrolled in the Extern Program.
3. While most of the externs want the professors to visit their schools, they said the visits should be longer. The professors should clarify the purpose of these visits for future externs.
4. The writing up of personal problems should not be required for each week throughout the year; perhaps each extern could decide how many he wants to do. The reactions to the problems could be dropped early in the year or not requested at all.
5. Even though real life consists of constantly changing group structures, many benefits of T-groups depend on consistency of membership. Larger groups could be tried, since a group of ten or twelve would not suffer when one or two members were absent. But the experience of integrating groups and new members should not be entirely abandoned as part of the training design.

6. A three day intensive T-group experience at the first or second session of the Extern Program might help unfreeze the externs for the learning experiences of the remaining week-ends. For Schein and Bennis suggest, "the first and most important attitude change is that of learning how to learn, of coming to value the meta-goals of laboratory training."²
7. Since including the wives of the externs in the January session proved so popular, perhaps the wives should be given other opportunities to attend.
8. Doctoral students in educational administration should continue as assistants in the Extern Program, since these experiences keep them close to the realities of school administrators' problems.

Further Research

1. A closer study of dogmatism in principals with longer tenure may be helpful to younger principals. For example, if large schools are generally headed by more dogmatic administrators, then would a person who scores open-minded or neither open- nor closed-minded be unhappy administering a large school?

²Edgar Schein and Warren G. Bennis, Personal and Organizational Change Through Group Methods: The Laboratory Approach (New York: John Wiley and Sons, 1965), p. 285.

2. A pattern analysis of the Ideas About "Myself" Inventory, along with reliability and validity studies, would expand its usefulness.
3. Further testing of the Edwards PPS with school principals may disclose needs which distinguish school principals from teachers. Such findings might prove helpful in counseling with those who aspire to administrative advancement.

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APPENDIX A

PERSONAL DATA

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APPENDIX A-I

EXTERN PROGRAM, FORM I
1965-66

INFORMATION SHEET (PLEASE PRINT CLEARLY)

GROUP _____

OCCUPATIONAL INFORMATION

NAME (last, first, middle initial) _____

PRESENT POSITION _____

NUMBER OF YEARS IN THIS POSITION _____

TOTAL NUMBER OF YEARS OF ADMINISTRATIVE EXPERIENCE _____

NUMBER OF YEARS OF TEACHING EXPERIENCE (exclusive of
above) _____

NAME OF PARTICULAR SCHOOL _____

GRADES INCLUDED IN SCHOOL (K-6, 7-9, 9-12, etc.) _____

SEPTEMBER, 1964, PUPIL MEMBERSHIP AT ABOVE SCHOOL
_____ PUPILS

NAME OF SCHOOL DISTRICT _____

COUNTY IN WHICH SCHOOL DISTRICT IS LOCATED _____ COUNTY

APPROXIMATE SEPTEMBER, 1964, PUPIL MEMBERSHIP IN SCHOOL
DISTRICT _____ PUPILS

MAILING ADDRESS OF SCHOOL _____
(number) (street)

SCHOOL PHONE NUMBER _____
(city) (state)

EDUCATIONAL INFORMATION

NAME AND LOCATION OF HIGH SCHOOL ATTENDED _____

APPENDIX A-II

Name _____

Date _____

EXTERN PROGRAM, FORM II
1965-66

PERSONAL DATA

Check the appropriate space, or make a short answer.

Please answer according to how you are and not as you would like or ought to be. Personal comments for clarification are welcome.

1. How many brothers and sisters do you have? _____
2. Which one of your parents influenced you the most?
_____ Father _____ Mother
3. What do you estimate your level of intelligence to be? _____ High _____ Medium _____ Low
4. What is your position among your brothers and/or sisters? (Consider the oldest as number 1.) _____
5. How many days of work have you missed during the past year for any reason? _____
6. Everyone has feelings of being rejected at times. Do you feel that you have these feelings more, less, or about average in comparison to other people?
_____ More _____ Less _____ About average
7. Do you feel that you are working as a principal to your fullest capacity? _____ Yes _____ No

8. Do you feel that you are more friendly, less friendly, or about the same in friendliness as the general population? More Less Same
9. What is your age in years?
10. How would you rate your frequency of worrying as compared to other principals?
 More Frequent Less Frequent
 About Average
11. If something arises in your life which is unforeseen and unwelcome, to what degree does this upset you?
 Considerably and for an extended time
 At the moment, but I soon recover
 Hardly at all. I just make the best of it.
12. Do you feel that you are fulfilling your parents' fullest expectations? Yes No
13. What is your feeling in regard to your personal appearance? About Average Average
 Below Average
14. What place does religion occupy in your home?
 Strongly emphasized Emphasized
 Not emphasized No religion
15. Where would you classify the social status of your parents? Upper class Middle class
 Lower class
16. How would you classify the income level of your parents?
 High Medium Low

17. Where would you rank yourself in comparison to the average person in degree of stubbornness?

_____More _____Less _____Average

18. How would you rate the amount of physical sickness you have had?

_____Less than average

_____More than average

_____Average

19. How would you classify your habits of retiring and rising?

_____Early retiring and early rising

_____Early retiring and late rising

_____Late retiring and early rising

_____Late retiring and late rising

20. Would you classify your parents as leaning toward the efficient type or the more easy going type?

_____Efficient _____Easy going

21. How many close friends would you say you have? _____

22. How would you rate your self-confidence?

_____More than average

_____Average

_____Less than average

23. How would you rate your sensitivity to criticism?

_____More sensitive than average person

_____Less sensitive than average person

_____About the same as average person

24. How would you rate your degree of cooperativeness?
- _____ More cooperative than average person
_____ Less cooperative than average person
_____ About average
25. How would you rate the degree to which you hide your feelings?
- _____ More than most persons
_____ About the same as most persons
_____ Less than most persons
26. How would you evaluate the quality of your early schooling and general education?
- _____ Good _____ Average _____ Poor
27. How would you rate your degree of sticking to a job until finished?
- _____ Average
_____ Better than average
_____ Not so good
28. How would you rate your ambitions?
- _____ Above average _____ Average
_____ Below average
29. How would you rate your reaction to failure?
- _____ It bothers me considerably
_____ It bothers me but I soon recover
_____ I don't let it bother me

30. How would you classify your personality in regards to being mainly concerned with just yourself?

_____Interests are generally outside of myself

_____Most of my interests are for myself although

I do have some outside interests

_____My interests are mainly for myself

APPENDIX B

DOGMATISM

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APPENDIX B-1

VALIDITY OF DOGMATISM SCALE

An interesting and psychologically significant example of construct validation is Rokeach's work on the Dogmatism (D) Scale and other related measures. To some extent, disputing the validity of the well-known F scale as a measure of authoritarianism, Rokeach, on the basis of rather involved theoretical reasoning, constructed the D scale. This instrument consists of a number of items that he believed would tap closed-mindedness, a way of thinking presumably associated with any ideology regardless of content. Central to Rokeach's formulation is the notion that the ideological orientations of individuals are related to their personalities, thought processes, and behaviors. Two examples among many that can be given are his predictions that dogmatism is related to intolerance and to opinionation.

Rokeach undertook an extensive series of investigations aimed at testing his theory and the construct validity of his scales. In one study he used what has been called the known-groups method. In this method groups of people with "known" characteristics are administered an instrument and the direction of differences is predicted. For example, if we were validating an attitude scale designed to measure conservatism, we might select groups "known" to be very conservative and groups "known" not to be conservative. Rokeach had college professors and graduate psychology students select students and friends they considered to be open- and closed-minded. The D scale clearly differentiated the two groups.¹

Rokeach built his scales deductively, that is, he studied characteristics of open and closed human belief systems and constructed items to tap these characteristics. Here is a sample of Rokeach's D scale items:

- Man on his own is a helpless and miserable creature.

¹Fred B. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, 1965), pp. 452-453.

- There are two kinds of people in the world: those who are for the truth and those who are against the truth.
- In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

The first item was designed to measure helplessness, the second intolerance, and the third the avoidance of contact with persons whose beliefs differ from one's own. It is interesting to note that Rokeach believes that the D scale measures authoritarianism better than the F scale and presents evidence to back his belief. One outstanding feature of Rokeach's work is his measurement of dogmatism of the right and the left and opinionation of the right and the left. The F scale measures only authoritarianism of the right. Rokeach's work is another serious attempt to measure important and complex variables--with, it is believed, considerable success.²

²Ibid., pp. 489-490.

APPENDIX B-2

RELIABILITY COEFFICIENT AND STANDARD ERROR
OF MEASUREMENT FOR EXTERNS

The split-half reliability coefficient technique yielded a simple correlation of .71 on the pre-test scores of the externs used in this study³ (for replication, the Spearman-Brown Prophecy Formula may be used, which yields a correlation coefficient of .83 for these data). The standard deviation was 22, therefore the standard error of measurement for this group is 12, calculated thus:⁴

$$\begin{aligned}\sigma_e &= s \sqrt{1 - r} \\ \sigma_e &= 22 \sqrt{1 - .71} \\ \sigma_e &= 22 \times .538 \\ \sigma_e &= 12\end{aligned}$$

The standard error of measurement, according to Downie and Heath, is interpreted in the same way as the standard deviation. Thus, it is safe to say that two out of three times a person's true score will fall within one standard error of measurement of his observed score, that the chances

³Helen M. Walker and Joseph Lev, Statistical Inference (New York: Holt, Rinehart and Winston, 1953), pp. 310-311.

⁴Robert L. Ebel, Measuring Educational Change (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), pp. 330-333.

are 95 in one hundred that his obtained score is within two standard errors of measurement, and 99 in 100 that his obtained score is within three units from his true score. The standard error of measurement is preferred by some researchers over the use of the correlation coefficient to express the reliability of a test.⁵

⁵N. M. Downie and R. W. Heath, Basic Statistical Methods (New York: Harper and Row, Publishers, 1959), pp. 195-197.

APPENDIX B-3

DOGMATISM GROUPINGS OF EXTERNS FOR THIS STUDY

To test the hypotheses, to differentiate the externs' reactions to the extern program and to observe differences in behavioral changes, the dogmatism groups were defined as follows:

1. Open-minded externs: those who scored one standard error of measurement or more below the mean of all externs on the Dogmatism Scale (S.E.M. = 12).

range = 64 through 124

2. Closed-minded externs: those who scored one standard error of measurement or more above the mean of all externs on the Dogmatism Scale.

range = 149 through 179

3. Those externs who scored within one standard error of measurement of the mean of all externs on the Dogmatism Scale are neither open- nor closed-minded.

range = 125 through 148

APPENDIX B-4

"t" test of difference in means between pre- and post-dogmatism scores for each dogmatic grouping:

(1) Open-Minded Externs

Pre-test Scores X	Post-test Scores Y	X ¹	Y ¹	X ¹ ²	Y ¹ ²
124	128	17	10.17	289	103.43
118	135	11	17.17	121	294.81
121	131	14	13.17	196	173.45
106	119	-1	1.17	1	1.37
113	121	6	3.17	36	10.05
089	93	-18	-24.83	324	616.53
108	135	1	17.17	1	294.81
90	89	-17	-28.83	289	831.17
117	136	10	18.17	100	330.15
64	67	-43	-50.83	1849	2583.69
117	150	10	32.17	100	1034.91
117	110	10	-7.83	100	61.31
1284				3406	6335.68

$$\bar{X} = 107$$

$$\bar{Y} = 117.83$$

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{\left(\frac{\sum X^1^2}{N_1 + N_2 - 2}\right) \left(\frac{N_1 + N_2}{N_1 N_2}\right)}}$$

$$t = \frac{107 - 117.83}{\sqrt{\left(\frac{3406 + 6335.68}{22}\right) \left(\frac{24}{144}\right)}}$$

$$t = \frac{-10.83}{\sqrt{73.80}} = \frac{-10.83}{8.59}$$

$$t = -1.26$$

(2) Neither Open- nor Closed-Minded Externs

Pre-test Scores X	Post-test Scores Y	X ¹	Y ¹	X ^{1 2}	Y ^{1 2}
134	140	-.45	.2	.20	.04
131	142	-3.45	2.2	11.90	4.84
140	136	5.55	-3.8	30.80	14.44
143	162	8.55	22.2	73.10	492.84
132	112	-2.45	-27.8	6.00	772.84
144	147	9.55	7.2	91.20	51.84
141	133	6.55	-6.8	42.90	46.24
131	137	-3.45	-2.8	11.90	7.84
130	107	-4.45	-32.8	19.80	1075.84
138	160	3.55	20.2	12.60	408.84
142	153	7.55	13.2	57.00	174.24
142	136	7.55	-3.8	57.00	14.44
132	147	-2.45	7.2	6.00	51.84
133	138	-1.45	-1.8	2.10	3.24
138	164	3.55	24.2	12.60	585.64
134	150	-.45	10.2	.20	104.04
129	141	-5.45	1.2	29.70	1.44
125	127	-9.45	-12.8	89.30	163.84
125	137	-9.45	-2.8	89.30	7.84
125	127	-9.45	-12.8	89.30	163.84
2689	2796			732.90	4146.00

$$\bar{X} = 134.45$$

$$\bar{Y} = 139.8$$

$$t = \frac{134.45 - 139.8}{\sqrt{\left(\frac{732.9 + 4146}{38}\right) \left(\frac{20 + 20}{400}\right)}}$$

$$t = \frac{-5.35}{\sqrt{12.84}}$$

$$t = \frac{-5.35}{3.58}$$

$$t = -1.49$$

(3) Closed-Minded Externs

Pre-test Scores X	Post-test Scores Y	X ¹	Y ¹	X ¹ ²	Y ¹ ²
152	158	-6.11	3.22	37.33	10.38
152	155	-6.11	.22	37.33	.05
167	159	8.89	4.22	79.03	17.82
153	152	-5.11	-2.77	26.11	7.71
151	150	-7.11	-4.77	50.55	22.82
156	151	-2.11	-3.77	4.55	14.27
179	177	20.89	22.22	436.39	193.83
160	160	1.89	5.22	3.57	27.27
158	162	-.11	7.22	.01	52.16
149	167	-9.11	12.22	82.99	149.38
151	146	-7.11	-8.77	50.55	77.05
149	135	-9.11	-19.77	82.99	391.15
163	148	4.89	-6.77	23.91	45.93
163	152	4.89	-2.77	23.91	7.71
166	159	7.89	4.22	62.25	17.82
160	146	1.89	-8.77	3.57	77.05
155	142	-3.11	-12.77	9.67	163.27
162	167	3.89	12.22	15.13	149.38
				1029.74	1425.05

$$\bar{X} = 158.11$$

$$\bar{Y} = 154.77$$

$$t = \frac{158.11 - 154.77}{\sqrt{\left(\frac{1029.74 + 1025.05}{18 + 18 - 2}\right) \left(\frac{18 + 18}{18 \times 18}\right)}}$$

$$t = \frac{3.34}{\sqrt{\left(\frac{2454.79}{34}\right) \left(\frac{36}{324}\right)}} = \frac{3.34}{\sqrt{(72.20) (.1111)}}$$

$$t = \frac{3.34}{\sqrt{8.021}} = \frac{3.34}{2.83}$$

$$t = 1.18$$

APPENDIX B-5

Chi-square test of independence between the combined open- and closed-minded pre- to post-test changers on the Dogmatism Scale, versus the neither open- nor closed-minded changers.

O : open-minded externs

N : neither open- nor closed-minded externs

C : closed-minded externs

	O and C	N	Totals
Changers	10	9	19
Non-changers	20	11	31
Totals	30	20	50

$$(1) \quad \frac{19}{\cancel{50}} \times \frac{3}{\cancel{30}} = \frac{57}{5} = 11.4$$

$$(2) \quad \frac{19}{\cancel{50}} \times \frac{2}{\cancel{20}} = \frac{38}{5} = 7.6$$

$$(3) \quad \frac{31}{\cancel{50}} \times \frac{3}{\cancel{30}} = \frac{93}{5} = 18.6$$

$$(4) \quad \frac{31}{\cancel{50}} \times \frac{2}{\cancel{20}} = \frac{62}{5} = 12.4$$

$$\chi^2 = \sum \frac{(O - e)^2}{e}$$

$$\chi^2 = \frac{(10 - 11.4)^2}{11.4} + \frac{(9 - 7.6)^2}{7.6} + \frac{(20 - 18.6)^2}{18.6} + \frac{(11 - 12.4)^2}{12.4} =$$

$$\chi^2 = \frac{(-1.4)^2}{11.4} = \frac{1.96}{11.4} = .17 + \frac{(1.4)^2}{18.6} = \frac{1.96}{18.6} = .11 + \frac{(1.4)^2}{7.6} = \frac{1.96}{7.6} = .26 + \frac{(-1.4)^2}{12.4} = \frac{1.96}{12.4} = .16 =$$

$$\chi^2 = .70$$

Since the tabled value of Chi-square at the .05 level of confidence with 1 degree of freedom is 3.84 the null hypothesis of independence is accepted.

APPENDIX B-6

DOGMATISM SCALE

The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one.

Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

- | | |
|--------------------------|-----------------------------|
| +1: I AGREE A LITTLE | -1: I DISAGREE A LITTLE |
| +2: I AGREE ON THE WHOLE | -2: I DISAGREE ON THE WHOLE |
| +3: I AGREE VERY MUCH | -3: I DISAGREE VERY MUCH |

- | | |
|-------|--|
| _____ | 1. The United States and Russia have just about nothing in common. |
| _____ | 2. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent. |
| _____ | 3. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups. |
| _____ | 4. It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes. |
| _____ | 5. Man on his own is a helpless and miserable creature. |
| _____ | 6. Fundamentally, the world we live in is a pretty lonesome place. |

- _____ 7. Most people just don't give a "damn" for others.
- _____ 8. I'd like it if I could find someone who would tell me how to solve my personal problems.
- _____ 9. It is only natural for a person to be rather fearful of the future.
- _____ 10. There is so much to be done and so little time to do it in.
- _____ 11. Once I get wound up in a heated discussion I just can't stop.
- _____ 12. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.
- _____ 13. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.
- _____ 14. It is better to be a dead hero than to be a live coward.
- _____ 15. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.
- _____ 16. The main thing in life is for a person to want to do something important.
- _____ 17. If given the chance I would do something of great benefit to the world.
- _____ 18. In the history of mankind there have probably been just a handful of really great thinkers.
- _____ 19. There are a number of people I have come to hate because of the things they stand for.
- _____ 20. A man who does not believe in some great cause has not really lived.
- _____ 21. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.
- _____ 22. Of all the different philosophies which exist in this world there is probably only one which is correct.

- _____ 23. A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.
- _____ 24. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.
- _____ 25. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.
- _____ 26. In times like these, a person must be pretty selfish if he considers primarily his own happiness.
- _____ 27. The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.
- _____ 28. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.
- _____ 29. A group which tolerates too much differences of opinion among its own members cannot exist for long.
- _____ 30. There are two kinds of people in this world: those who are for the truth and those who are against the truth.
- _____ 31. My blood boils whenever a person stubbornly refuses to admit he's wrong.
- _____ 32. A person who thinks primarily of his own happiness is beneath contempt.
- _____ 33. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.
- _____ 34. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.
- _____ 35. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

- _____ 36. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.
- _____ 37. The present is all too often full of unhappiness. It is only the future that counts.
- _____ 38. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."
- _____ 39. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.
- _____ 40. Most people just don't know what's good for them.

APPENDIX C

EDWARDS PERSONAL PREFERENCE SCHEDULE

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APPENDIX C-1

VALIDITY AND RELIABILITY FOR EDWARDS PPS

The Edwards Personal Preference Schedule (EPPS) is based on Murray's needs theory, in which a need is defined as:

. . . a construct (a convenient fiction or hypothetical concept) which stands for a force (the physiochemical nature of which is unknown) in the brain region, a force which organizes perception, apperception, intellection, conation, and action in such a way as to transform in a certain direction an existing, unsatisfying situation. The best subjective criterion (of the existence of a need) is the occurrence of a wish or resolution to do a certain thing (to bring about a certain effect).¹

Guba and Jackson, in their study of the need structures of in-service teachers and occupational analysis, summarized the operation of the test:

Responses to the schedule are summarized in terms of fifteen needs scores, these variables being based upon the list of manifest needs, rather than latent needs, first proposed by Murray. A high score in any one of these fifteen measures indicates that the subject tended to choose activities associated with the need in preference to activities designed to reflect other needs. ²

¹Henry A. Murray, et al., Explorations in Personality (New York: Oxford University Press, 1938), pp. 123-124.

²E. G. Guba and P. W. Jackson, "The Need Structure of In-Service Teachers and Occupational Analysis," School Review, LXV (1957), p. 176.

Kerlinger assessed the reliability and validity of the Edwards Personal Preference Schedule:

A promising newer development is the measurement of needs. The most interesting, highly objective instrument that measures a variety of needs and that should be useful in behavioral research is Edwards Personal Preference Schedule (PPS). The PPS is theoretically oriented, being based on Murray's needs theory. It measures needs for achievement, dependence, succorance, deference, affiliation, and so on. The construction and rationale of this scale are psychometrically satisfying. In addition to basing the inventory on needs theory, for example, Edwards attempted to control the social desirability of items by pairing items approximately equal in social desirability. ³

One use of paired comparisons is the pairing of statements in Edwards Personal Preference Schedule (PPS). One item measuring the need for autonomy, for instance, is paired with another item measuring the need for change. The subject is asked to choose one of these items. It is assumed that he will choose the one item that fits his own needs. A unique feature of the scale is that the social desirability values of the paired members were determined empirically and the pairs matched accordingly. The instrument yields profiles of need scores for each individual. ⁴

Consult the Manual of the Edwards PPS for further verification of the reliability and validity of each variable. ⁵

³Fred B. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, 1965), p. 491.

⁴Ibid., p. 497.

⁵Allen L. Edwards, Edwards Personal Preference Schedule Manual (Second Edition Revised; New York: The Psychological Corporation, 1959), pp. 19-24.

Copies of the test booklet are available from the publisher or nearly any college Counseling Center.

The Edwards PPS is an ipsative scale rather than normative. The implication for the researcher is that the t test results may need to be considered rather conservatively:

A normative score reflects the absolute level of the variable; an ipsative score reflects the level of the variable relative to the other variables in the ipsative format. Hence, two people with the same normative score on a variable may differ markedly in their ipsative scores on the same variable because of differences on one or more of the other variables that are included in the ipsative format. 6

The t test is the statistical test most commonly used by researchers who use the EPPS.

⁶Lawrence J. Stricker, "The Edwards Personal Preference Schedule," The Sixth Mental Measurements Yearbook, Oscar Buros, ed. (Highland Park, New Jersey: Gryphon Press, 1965), p. 201.

APPENDIX C-2

KRUSKAL-WALLIS⁷ ANALYSIS OF VARIANCE BY SUMS
OF RANKS TEST (ONE CRITERION OF CLASSIFICATION)
ON EDWARDS PPS VARIABLES BY DOGMATIC GROUPINGS*

$$H = \frac{\frac{12}{N(N+1)} \sum_{i=1}^k \frac{R_i^2}{N_i} - 3(N+1)}{1 - \frac{\sum T}{N(N^2 - 1)}}$$

$$H = \frac{\frac{12}{50(50+1)} \left(\frac{298.5^2}{12} + \frac{528^2}{20} + \frac{448.5^2}{18} \right) - 3(50+1)}{1 - \frac{180}{35(35+1)}}$$

$$H = \frac{\frac{12}{2550} \left(\frac{89,302.25}{12} + \frac{278784}{20} + \frac{201152.25}{18} \right) - 153}{1 - .004}$$

$$H = \frac{.0047(7441.85 + 13939.2 + 1117.51) - 153}{.9957}$$

* O : open-minded externs, n = 12

N : neither open- nor closed-minded
externs, n = 20

C : closed-minded externs, n = 18

⁷William H. Kruskal and W. A. Wallis, "Use of Ranks in One-Criterion Variance Analysis," Journal of the American Statistical Association, 47 (1952), pp. 583-621.

$$H = \frac{.0047 (22498.56) - 153}{.9957}$$

$$H = \frac{105.75 - 153}{.9957}$$

$$H = \frac{-47.25}{.9957}$$

$$H = -48.25^{**}$$

****Highly significant beyond .001 level of confidence, tabled value of Chi-square, 2 d.f., .01 level of confidence is 9.2 (actually highly significant beyond .001 level).**

APPENDIX C-3

CHI-SQUARE TESTS FOR HOMOGENEITY OF VARIANCES⁸
FOR EXTERNS' PRE-TEST EDWARDS PPS AND
NORM GROUP
(N = 50)

Sig. level: $\chi^2_{.95,49} = 79.08$

$\chi^2_{(N-1)} = \frac{(N-1) \hat{S}^2}{\sigma_o^2}$ where (1) \hat{S}^2 = variance of sample
 σ_o^2 = variance of norm group

χ^2 = pre-test of externs and norm group variances

Variable	(1) \hat{S}^2	σ^2	χ^2_1
1. Achievement	16.24	17.14	46.7
2. Deference	14.14	15.29	46.1
3. Order	18.23	23.72	37.8
4. Exhibition	11.56	15.92	36.4
5. Autonomy	13.25	19.18	33.4
6. Affiliation	13.25	18.66	35.0
7. Intraception	22.56	19.54	56.4
8. Succorance	14.36	22.18	31.5
9. Dominance	12.39	27.77	21.9
10. Abasement	24.50	26.32	45.7
11. Nurturance	20.70	24.70	41.4
12. Change	20.70	22.66	44.8
13. Endurance	23.72	24.01	48.4
14. Heterosexuality	34.34	59.29	28.4
15. Aggression	20.79	21.16	48.2
Consistency Score	5.856	3.842	74.7

$$H_0 : \hat{S}^2 = \sigma_o^2$$

$$H : \hat{S}^2 \neq \sigma_o^2$$

The null hypothesis of no differences in variances is accepted on each EPPS variable.

⁸Walker, op. cit., pp. 179-180.

APPENDIX C-4

HARTLEY'S TESTS FOR HOMOGENEITY OF VARIANCES
FOR EXTERNS' PRE- AND POST-TEST
EDWARDS PPS SCORES
(N = 50)

Formula: Hartley's Test⁹

$$F_{\max} = \frac{S_{\max}^2}{S_{\min}^2} \quad \text{where: } \begin{array}{l} \max = \text{maximum variance} \\ \min = \text{minimum variance} \end{array}$$

$$H_0 : S_1^2 = S_2^2 \quad \text{Sig. level: } F_{.05,40} = 2.07$$

$$H : S_1^2 \neq S_2^2 \quad \begin{array}{l} S_1 = \text{pre-test variance} \\ S_2 = \text{post-test variance} \end{array}$$

Variable	S ₁	S ₂	F
1. Achievement	16.24	14.06	n.s.
2. Deference	14.14	13.84	n.s.
3. Order	18.23	20.25	n.s.
4. Exhibition	11.56	12.74	n.s.
5. Autonomy	13.25	14.36	n.s.
6. Affiliation	13.25	12.82	n.s.
7. Intraception	22.56	25.60	n.s.
8. Succorance	14.36	20.98	n.s.
9. Dominance	12.39	19.10	n.s.
10. Abasement	24.50	27.88	n.s.
11. Nurturance	20.70	19.89	n.s.
12. Change	20.70	17.47	n.s.
13. Endurance	23.72	27.14	n.s.
14. Heterosexuality	34.34	33.64	n.s.
15. Aggression	20.79	21.34	n.s.
Consistency Score	5.856	3.842	n.s.

⁹Ibid., pp. 191-192.

APPENDIX C-5

TESTS FOR DIFFERENCES IN MEANS (1) BETWEEN EXTERNS' PRE-TEST MEANS AND NORM GROUP MEANS AND (2) BETWEEN EXTERNS' PRE- AND POST-TEST MEANS ON EDWARDS PPS
(50 Externs and 4031 Norm Group)

$$(1) \quad t = \frac{(\bar{X}_1 - \bar{Y})}{\sqrt{S/n}} \quad \text{d.f.} = 50 - 1 = 49$$

$$(2) \quad t = \frac{(\bar{X}_1 - \bar{X}_2) \cdot 0}{\sqrt{\frac{S_1^2}{n} + \frac{S_2^2}{n}}} \quad \text{d.f.} = 50 + 50 - 2 = 98$$

where \bar{X}_1 = mean of externs' pre-test

\bar{X}_2 = mean of externs' post-test

\bar{Y} = mean of norm group

n = number of externs

S_1^2 = pre-test sample variance

S_2^2 = post-test sample variance

S = standard deviation of extern pre-test

$$(1) \quad H_0 : \bar{X}_1 = \bar{Y}$$

$$H : \bar{X}_1 \neq \bar{Y}$$

$$(2) \quad H_0 : \bar{X}_1 = \bar{X}_2$$

$$H : \bar{X}_1 \neq \bar{X}_2$$

Variables of Edwards PPS	\bar{Y}	\bar{X}_1	S	(1) t	\bar{X}_2	S_1^2	S_2^2	(2) t
1. Achievement	14.79	14.08	4.14	0.86	14.08	16.24	14.06	0.95
2. Deference	14.19	12.96	3.91	1.58	12.96	14.14	13.84	-1.09
3. Order	14.69	11.04	4.87	3.95**	11.04	18.23	20.25	-2.03*
4. Exhibition	12.75	14.30	3.99	-2.07*	14.30	11.56	12.74	-0.14
5. Autonomy	14.02	13.12	4.38	1.07	13.12	13.25	14.36	-0.23
6. Affiliation	14.51	13.56	4.32	1.18	13.56	13.25	12.82	2.74**
7. Intraception	14.18	17.40	4.42	-3.47**	17.40	22.56	25.60	0.42
8. Succorance	10.78	8.48	4.71	2.66*	8.48	14.36	20.98	1.61
9. Dominance	14.50	18.26	5.27	-4.15**	18.26	12.39	19.10	0.52
10. Abasement	14.59	12.82	5.13	1.74	12.82	24.50	27.88	-0.49
11. Nurturance	15.67	12.82	4.97	2.96**	12.82	20.70	19.89	1.22
12. Change	13.87	16.76	4.76	-3.07**	16.76	20.70	17.47	-0.57
13. Endurance	16.97	14.42	4.90	2.58*	14.42	23.72	27.14	-2.44*
14. Heterosexuality	11.21	16.32	7.70	-3.70**	16.32	34.34	33.64	0.20
15. Aggression	13.06	13.36	4.60	-0.32	13.36	20.79	21.34	-0.83
Consistency Score	11.35	11.08	1.96	0.61	11.08	5.856	3.842	-0.05

(1) *t_{.975,40} = 2.021

(2) *t_{.975,60} = 2.000

**t_{.995,40} = 2.704

**t_{.995,60} = 2.660

Note: The values given for t are those appropriate for 40 d.f. (1), and 60 d.f. (2). These values, then, are conservative values for 49 d.f. (1), and 98 d.f. (2). 10

¹⁰Ibid., pp. 135-178, and 465.

APPENDIX C-6

COEFFICIENTS OF RELIABILITY, STANDARD
DEVIATIONS, AND STANDARD ERRORS OF
MEASUREMENT¹¹ FOR EDWARDS PPS
(N = 50)

Edwards PPS			
S.E.M. = $s \sqrt{1 - r_{tt}}$			
Variable	r_{tt}^*	S.D.**	S.E.M.
1. Achievement	.74	4.03	2.05
2. Deference	.78	3.76	2.37
3. Order	.87	4.27	2.17
4. Exhibition	.74	3.40	2.12
5. Autonomy	.83	3.96	1.93
6. Affiliation	.77	3.64	1.99
7. Intraception	.86	4.75	2.17
8. Succorance	.78	3.79	1.85
9. Dominance	.87	3.52	1.53
10. Abasement	.88	4.95	1.98
11. Nurturance	.79	4.55	2.13
12. Change	.83	4.55	2.08
13. Endurance	.86	4.87	2.11
14. Heterosexuality	.85	5.86	2.10
15. Aggression	.78	4.56	1.82
Consistency Score	.78	2.42	--

*Edwards PPS Manual

**Externs' pre-test standard deviations

¹¹Robert L. Ebel, Measuring Educational Achievement
(Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965)
pp. 330-333.

APPENDIX C-7

RAW DIFFERENCE SCORES; TOTAL DIFFERENCE SCORES PER EXTERN;
TOTAL DIFFERENCE SCORES PER VARIABLE; MEANS PER VARIABLE;
GRAND MEAN FOR FIFTEEN VARIABLES, BY DOGMATIC GROUPINGS
OF EXTERNS ON THE EDWARDS PPS PRE- TO POST-TEST

These data were used to make the figures 4.1, 4.2 and 4.3 and for analysis of variance by sum of ranks on page 63.

(1) Open-Minded Externs (n = 12)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Extern 1	1	1	0	2	6	0	4	5	1	2	1	1	8	3	1	36
2	2	0	0	1	2	2	4	3	0	0	3	7	1	2	1	28
3	4	0	5	2	1	4	8	1	4	1	0	0	7	5	2	44
4	1	3	1	0	1	2	5	1	0	1	4	0	4	10	1	34
5	1	3	1	7	1	2	4	8	1	5	5	2	3	2	1	46
6	3	0	5	4	0	4	11	5	1	1	0	4	7	9	4	58
7	1	3	1	9	0	1	3	6	1	3	6	1	5	3	1	44
8	0	1	6	1	3	5	2	7	7	1	1	4	5	3	1	47
9	5	1	4	3	6	3	7	4	2	2	0	5	6	2	2	52
10	3	1	1	4	0	6	1	13	8	4	1	3	2	5	5	57
11	1	4	2	8	4	5	5	1	5	4	1	1	4	12	4	61
12	1	5	2	5	3	4	3	4	5	3	2	1	7	1	6	52
Totals	23	22	28	46	27	38	57	58	35	27	24	29	59	57	29	559
Means	1.9	1.8	2.3	3.8	2.3	3.2	4.8	4.8	2.9	2.3	2	2.4	4.9	4.8	2.4	

- | | | | | | |
|---|-------------|----|---------------|----|-----------------|
| 1 | Achievement | 6 | Affiliation | 11 | Nurturance |
| 2 | Deference | 7 | Intracception | 12 | Change |
| 3 | Order | 8 | Succorance | 13 | Endurance |
| 4 | Exhibition | 9 | Dominance | 14 | Heterosexuality |
| 5 | Autonomy | 10 | Abasement | 15 | Aggression |

(2) Neither Open- nor Closed-Minded Externs (n = 20)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Extern 1	3	1	3	3	5	0	3	0	0	0	1	3	0	1	3	26
2	7	6	5	3	0	3	5	10	5	1	8	2	8	4	1	68
3	1	4	2	2	1	3	4	5	2	2	1	5	1	3	2	48
4	2	1	3	3	1	8	1	1	4	12	5	1	1	1	6	50
5	5	2	0	4	5	4	9	6	0	1	8	1	7	3	3	60
6	8	2	2	1	1	6	2	1	4	4	0	1	1	4	2	40
7	2	0	3	3	3	1	3	2	0	3	3	1	8	4	2	35
8	6	1	1	0	6	10	1	5	1	6	5	2	2	2	0	45
9	1	2	10	3	2	1	0	0	2	2	2	5	4	6	5	45
10	4	8	7	5	6	2	10	2	4	3	0	3	0	3	3	62
11	1	5	1	2	1	2	3	8	3	5	0	4	2	12	1	40
12	0	5	5	8	0	4	5	6	3	1	4	1	2	1	5	65
13	1	3	1	1	0	1	1	2	2	3	3	7	1	4	5	30
14	0	4	1	5	0	4	7	3	1	5	4	5	0	12	8	51
15	2	1	4	3	4	1	1	2	5	7	3	2	3	6	3	54
16	3	0	5	3	1	2	2	3	6	2	2	5	2	2	3	47
17	4	2	1	1	1	8	0	1	4	2	11	3	8	2	1	51
18	8	0	9	5	2	5	6	4	2	2	9	3	9	0	3	67
19	1	1	2	1	0	2	0	1	2	0	0	6	4	5	3	28
20	0	8	2	0	1	1	5	5	3	2	5	6	0	7	5	50
Totals	59	56	67	56	40	68	68	67	53	61	74	72	74	82	65	962
Means	3.0	2.8	3.4	2.8	2	3.4	3.4	3.4	2.7	3.1	3.7	3.6	3.7	4.1	3.3	

(3) Closed-Minded Externs (n = 18)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Extern 1	1	1	0	3	5	4	2	1	2	7	5	1	0	1	1	34
2	1	8	2	4	4	3	7	2	2	7	5	4	9	7	3	68
3	6	0	2	1	5	5	2	5	9	1	3	4	8	1	0	52
4	4	1	7	0	8	6	1	6	1	5	2	2	2	1	3	49
5	4	0	5	5	5	1	9	3	4	1	1	2	3	1	2	46
6	2	5	1	3	3	4	2	3	4	2	6	4	4	2	1	46
7	0	0	1	1	3	4	1	1	2	1	6	5	3	1	1	30
8	14	2	5	1	2	4	18	8	4	1	0	5	8	1	6	89
9	2	2	1	1	2	6	9	0	2	3	3	1	1	2	1	36
10	3	0	6	1	1	8	7	8	2	3	4	4	10	4	4	65
11	1	1	2	0	2	2	1	2	4	1	4	2	2	5	2	31
12	5	2	2	3	0	0	1	3	3	0	4	4	3	3	2	34
13	4	2	5	2	6	7	3	6	5	1	2	4	14	0	3	64
14	0	1	4	2	0	2	6	2	3	2	1	4	2	3	3	45
15	5	3	0	4	10	4	2	3	6	3	3	0	2	6	3	54
16	0	4	3	1	3	6	1	3	3	6	5	6	4	4	1	50
17	1	0	5	1	2	8	2	3	1	4	1	0	3	0	1	32
18	0	5	1	4	3	1	2	6	2	3	1	4	4	6	1	43
Totals	53	47	52	37	64	75	76	65	59	51	55	56	82	58	38	868
Means	2.9	2.6	2.9	2.1	3.6	4.2	4.2	3.6	3.3	2.8	3.1	3.1	4.6	3.2	2.1	

APPENDIX C-8

HIGHEST AND LOWEST CHANGE SCORES FOR EACH
DOGMATIC GROUP OF EXTERNS BETWEEN PRE- AND
POST-TESTS ON THE EDWARDS PPS*

O : open-minded externs

N : neither open- nor closed-minded externs

C : closed-minded externs

Variable	O : n=12		N : n=20		C : n=18	
	High	Lo	High	Lo	High	Lo
1. Achievement		x		x		x
2. Deference		x		x		x
3. Order		x	x			x
4. Exhibition	x			x		x
5. Autonomy		x		x	x	
6. Affiliation		x	x		x	
7. Intraception	x		x		x	
8. Succorance	x		x		x	
9. Dominance		x		x		x
10. Abasement		x		x		x
11. Nurturance		x	x			x
12. Change	x		x			x
13. Endurance		x	x		x	
14. Heterosexuality	x		x			x
15. Aggression		x	x			x

*Highest : above the mean

Lowest : at or below the mean

(See Figures 4.1, 4.2, and 4.3 on pages 67, 68, and 69.)

APPENDIX C-9

PRE- AND POST-TEST SCORES FOR EACH VARIABLE OF THE EDWARDS PERSONAL PREFERENCE SCHEDULE, SHOWING THE SIGNIFICANT CHANGES (ONE STANDARD ERROR OF MEASUREMENT) AND THE SIGNIFICANCE OF THE DIRECTION OF CHANGE ($p = .5$), FOR EACH DOGMATIC GROUP OF EXTERNS 12

O : open-minded externs

N : neither open- nor closed-minded externs

C : closed-minded externs

Variable 1. Achievement

S.E.M. 2.05 or 3.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
12	11		0		14	17			+	16	15		0	
10	12		0		17	10	-			17	16		0	
10	14			+	19	18		0		10	16			+
10	09		0		16	14		0		15	19			+
19	18		0		13	18			+	14	18			+
18	15	-			10	08		0		16	14		0	
20	19		0		15	17		0		19	19		0	
09	09		0		17	11	-			07	21			+
22	17	-			18	19		0		13	15		0	
10	07	-			12	16			+	08	11			+
14	15		0		11	12		0		14	13		0	
19	18		0		04	04		0		12	17			+
					13	14		0		09	13			+
					15	15		0		16	16		0	
					20	18		0		13	18			+
					12	15			+	15	15		0	
					18	14	-			10	09		0	
					09	17			+	15	15		0	
					21	22		0						
					18	18		0						
Totals		3	8	1			3	12	5			0	10	8*

* Significant beyond .05 level of confidence

¹²Walker, op. cit., pp. 310-311.

Variable 2. Deference

S.E.M. 2.37 or 3.00

O : n = 12					N : n = 20					C : n = 18					
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change			
08	09		0		15	16		0		06	07		0		
11	11		0		09	03	-			21	13	-			
14	14		0		13	17			+	15	15		0		
18	15	-			15	14		0		09	10		0		
12	15			+	12	10		0		15	15		0		
10	10		0		18	16		0		20	15	-			
10	07	-			14	14		0		11	11		0		
14	13		0		11	10		0		12	14		0		
07	06		0		09	07		0		07	09		0		
09	08		0		06	14			+	13	13		0		
13	09	-			10	15			+	11	12		0		
16	11	-			13	18			+	14	12		0		
					17	14	-			09	11		0		
					13	17			+	14	03	-			
					21	20		0		16	13	-			
					17	17		0		17	13	-			
					12	14		0		15	15		0		
					15	15		0		13	08	-			
					09	08		0							
					19	11	-								
Totals		4*	7	1				3	12	5			6*	12	0

*Significant beyond .05 level of confidence.

Variable 3. Order

S.E.M. 2.17 or 3.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
04	04		0		09	06	-			02	02		0	
09	09		0		12	07	-			13	15		0	
16	11	-			10	08		0		08	06		0	
11	10		0		13	10	-			08	01	-		
16	15		0		13	13		0		13	08	-		
08	03	-			08	10		0		08	09		0	
09	08		0		15	12	-			08	09		0	
12	06	-			22	23		0		01	06		0	
14	10	-			16	06	-			10	09		0	
07	06		0		03	10			+	07	01	-		
10	08		0		09	08		0		08	06		0	
16	14		0		17	12	-			12	14		0	
					06	07		0		13	08	-		
					14	15		0		07	03	-		
					16	20			+	15	15		0	
					14	09	-			15	12	-		
					10	09		0		14	09	-		
					13	04	-			10	09		0	
					10	12		0						
					18	16		0						
Totals		4	8	0			8*	10	2			7*	10	1

*Significant beyond .05 level of confidence.

Variable 4. Exhibition

S.E.M. 2.13 or 3.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
18	20		0		12	15			+	11	14			+
18	17		0		12	15			+	12	16			+
18	16		0		20	18		0		13	14		0	
14	14		0		10	13			+	16	16		0	
16	09	-			09	13			+	13	18			+
11	15			+	17	16		0		13	10	-		
18	09	-			12	15			+	20	21		0	
14	13		0		16	16		0		14	13		0	
17	14	-			17	20			+	22	21		0	
18	14	-			17	12	-			14	13		0	
10	18			+	17	15		0		16	16		0	
09	14			+	16	08	-			17	14	-		
					15	14		0		14	12		0	
					13	18			+	09	07		0	
					07	04	-			07	11			+
					15	12	-			12	11		0	
					10	09		0		15	16		0	
					17	12	-			16	20			+
					13	14		0						
					15	15		0						
Totals		4	5	3			5	8	7			2	11	5

Variable 5. Autonomy

S.E.M. 1.93 or 2.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
08	14			+	13	08	-			14	09	-		
20	22			+	15	15		0		09	13			+
08	09		0		15	14		0		16	11	-		
17	16		0		09	10		0		16	08	-		
13	14		0		06	11			+	07	12			+
11	11		0		11	12		0		15	12	-		
12	12		0		20	17	-			15	12	-		
18	15	-			17	11	-			13	15			+
12	18			+	19	21			+	15	17			+
09	09		0		21	15	-			13	12		0	
12	16			+	10	09		0		14	12	-		
15	18			+	08	08		0		17	17		0	
					11	11		0		20	14	-		
					13	13		0		13	13		0	
					09	05	-			07	17			+
					12	11		0		11	08	-		
					18	17		0		08	06	-		
					11	13			+	15	18			+
					18	18		0						
					07	08		0						
Totals		1	6	5*			5	12	3			9	3	6

*Significant beyond .05 level of confidence.

Variable 6. Affiliation

S.E.M. 1.99 or 2.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
19	19		0		17	17		0		16	20			+
12	14			+	10	13			+	08	11			+
14	18			+	09	12			+	10	15			+
17	15	-			11	19			+	11	17			+
08	10			+	19	15	-			14	15		0	
11	15			+	12	18			+	13	17			+
13	14		0		13	14		0		14	10	-		
08	13			+	06	16			+	18	14	-		
18	15	-			16	17		0		15	09	-		
14	20			+	20	18	-			14	22			+
14	19			+	17	19			+	21	19	-		
14	10	-			19	23			+	09	09		0	
					10	11		0		06	13			+
					15	19			+	19	17	-		
					14	15		0		17	13	-		
					13	11	-			11	17			+
					13	21			+	14	22			+
					12	17			+	15	16		0	
					14	12	-							
					11	12		0						
Totals		3	2	7			4	6	10*			6	3	9

*Significant beyond .05 level of confidence.

Variable 7. Intraception

S.E.M. 2.17 or 3

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
24	20	-			21	18	-			13	15		0	
12	16			+	17	22			+	12	19			+
21	13	-			12	16			+	19	17		0	
20	15	-			20	19		0		12	11		0	
19	15	-			18	27			+	20	11	-		
10	21			+	24	22		0		21	23		0	
17	14	-			13	16			+	22	23		0	
24	26		0		08	07		0		23	05	-		
13	20			+	09	09		0		11	20			+
21	20		0		09	19			+	20	13	-		
15	10	-			23	20	-			15	16		0	
16	19			+	19	24			+	13	14		0	
					23	22		0		16	19			+
					24	17	-			17	23			+
					18	19		0		21	23		0	
					15	17		0		15	16		0	
					17	17		0		23	25		0	
					20	26			+	10	12		0	
					26	26		0						
					19	14	-							
Totals		6	2	4			4	9	7			3	11	4

Variable 8. Succorance

S.E.M. 1.85 or 2.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
15	20			+	08	08	0			16	15	0		
10	07	-			01	11		+		12	10	-		
11	10		0		11	06	-			08	13		+	
07	08		0		13	14	0			08	14		+	
12	04	-			08	02	-			07	04	-		
16	11	-			08	07	0			06	09		+	
13	19			+	05	03	-			03	04	0		
10	17			+	08	13		+		09	17		+	
05	09			+	08	08	0			11	11	0		
03	16			+	08	10		+		05	13		+	
14	15		0		05	13		+		06	04	-		
02	06			+	08	14		+		07	10		+	
					06	08		+		04	10		+	
					06	03	-			06	08		+	
					10	08	-			13	10	-		
					14	11	-			15	12	-		
					06	07		0		11	08	-		
					07	03	-			11	17		+	
					02	01		0						
					06	11		+						
Totals		3	3	6			7	6	7			6	3	9

Variable 9. Dominance

S.E.M. 1.53 or 2.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
18	19		0		18	18		0		26	24	-		
24	24		0		15	20			+	17	19			+
20	24			+	18	20			+	15	24			+
12	12		0		18	14	-			15	14		0	
26	25		0		19	19		0		24	20	-		
19	20		0		15	11	-			15	19			+
20	19		0		20	20		0		22	20	-		
15	22			+	18	19		0		21	25			+
21	23			+	13	15			+	20	18	-		
16	08	-			23	19	-			15	17			+
18	23			+	15	12	-			20	24			+
10	15			+	14	11	-			21	24			+
					15	17			+	20	25			+
					20	19		0		22	19	-		
					14	09	-			19	13	-		
					14	20			+	18	21			+
					20	16	-			15	16		0	
					18	16	-			22	24	-		
					19	21			+					
					21	18	-							
Totals		1	6	5*			9	5	6			7	2	9

*Significant beyond .05 level of confidence.

Variable 10. Abasement

S.E.M. 1.98 or 2.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
11	09	-			06	06		0		16	09	-		
14	14		0		16	15		0		17	10	-		
18	17		0		12	14			+	15	14		0	
23	24		0		21	07	-			04	09			+
10	15			+	10	11		0		07	08		0	
12	11		0		18	22			+	21	23			+
17	14	-			15	15		0		11	10		0	
09	10		0		16	13	-			11	12		0	
09	11			+	07	13			+	06	03	-		
10	14			+	07	05	-			08	11			+
08	04	-			17	20			+	12	13		0	
08	05	-			17	22			+	07	07		0	
					14	13		0		17	16		0	
					13	10	-			10	12			+
					26	21	-			12	15			+
					16	09	-			15	09	-		
					07	09			+	20	24			+
					15	13	-			06	03	-		
					14	14		0						
					10	08	-							
Totals		4	5	3			8	6	6			5	7	6

Variable 11. Nurturance

S.E.M. 2.13 or 3.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
17	18		0		16	15		0		19	24			+
09	06	-			05	13			+	08	13			+
14	14		0		15	16		0		10	07	-		
11	07	-			16	11	-			12	10		0	
07	12			+	20	12	-			05	06		0	
22	22		0		16	16		0		05	11			+
12	18			+	12	15			+	17	11	-		
09	10		0		09	14			+	18	18		0	
09	09		0		12	14		0		17	14	-		
23	24		0		14	14		0		11	15			+
11	10		0		16	16		0		15	11	-		
05	07		0		20	24			+	14	11	-		
					11	14			+	11	13		0	
					16	12	-			17	16		0	
					15	18			+	13	16			+
					12	14		0		13	18			+
					05	16			+	17	16		0	
					09	18			+	09	10		0	
					08	08		0						
					14	19			+					
Totals		2	8	2			3	8	9*			5	7	6

*Significant beyond .05 level of confidence.

Variable 12. Change

S.E.M. 2.08 or 3.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
10	11		0		18	21			+	14	13		0	
28	21	-			17	15		0		20	24			+
12	12		0		15	20			+	21	17	-		
17	17		0		15	16		0		22	24		0	
05	07		0		12	15			+	22	24		0	
19	15	-			21	20		0		20	16	-		
10	09		0		16	17		0		08	13			+
22	18	-			14	12		0		12	07	-		
15	20			+	17	12	-			16	15		0	
19	16	-			21	18	-			24	20	-		
17	16		0		14	10	-			14	16		0	
22	23		0		16	17		0		19	15	-		
					23	16	-			22	18	-		
					09	16			+	15	19			+
					14	09	-			15	15		0	
					16	18		0		10	16			+
					21	16	-			17	17		0	
					19	22			+	17	13	-		
					20	14	-							
					16	22			+					
Totals		4*	7	1			7	7	6			7	7	4

*Significant beyond .05 level of confidence.

Variable 13. Endurance

S.E.M. 2.11 or 3.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
13	05	-			10	10		0		03	03		0	
03	02		0		23	15	-			14	05	-		
08	15			+	23	12	-			16	08	-		
14	18			+	17	16		0		18	16		0	
21	24			+	24	17	-			12	15			+
16	09	-			13	12		0		16	12	-		
14	09	-			11	03	-			09	06	-		
14	09	-			23	21		0		11	19			+
16	10	-			10	14			+	10	09		0	
17	15		0		06	06		0		18	08	-		
13	09	-			12	09	-			14	16		0	
14	07	-			13	15		0		16	19			+
					16	17		0		22	08	-		
					15	15		0		14	12		0	
					13	16			+	18	16		0	
					13	15		0		10	14			+
					18	10	-			18	15	-		
					18	09	-			06	02	-		
					14	10	-							
					21	21		0						
Totals		7	2	3			8*	10	2			8	6	4

*Significant beyond .05 level of confidence.

Variable 14. Heterosexuality

S.E.M. 2.10 or 3.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
22	18	-			24	23		0		20	21		0	
19	21		0		18	14	-			19	12	-		
18	13	-			10	13			+	19	18		0	
14	24			+	06	07		0		28	27		0	
08	10		0		20	17	-			26	27		0	
13	22			+	09	13			+	11	09		0	
15	18			+	13	17			+	13	14		0	
20	17	-			05	03		0		24	13	-		
19	17		0		21	23		0		24	26		0	
14	19			+	23	17	-			24	20	-		
13	25			+	17	14	-			12	17			+
23	24		0		16	04	-			14	11	-		
					13	12		0		15	15		0	
					12	16			+	15	18			+
					08	20			+	15	09	-		
					15	21			+	17	13	-		
					23	21		0		07	07		0	
					16	16		0		25	19	-		
					18	23			+					
					03	10			+					
Totals		3	4	5			5	7	8			7*	9	2

*Significant beyond .05 level of confidence.

Variable 15. Aggression

S.E.M. 1.82 or 2.00

O : n = 12					N : n = 20					C : n = 18				
Pre	Post	Direction of Change			Pre	Post	Direction of Change			Pre	Post	Direction of Change		
12	13		0		09	12			+	18	19		0	
15	14		0		23	22		0		11	14			+
08	10			+	08	06	-			15	15		0	
05	06		0		09	15			+	16	13	-		
18	17		0		07	10			+	11	09	-		
14	10	-			10	07	-			08	09		0	
10	11		0		16	14	-			18	17		0	
12	13		0		20	20		0		16	10	-		
13	11	-			17	12	-			13	14		0	
19	14	-			20	17	-			17	21			+
17	13	-			17	18		0		17	15	-		
12	18			+	10	05	-			18	16	-		
					17	12	-			12	15			+
					13	05	-			17	14	-		
					05	08			+	09	06	-		
					13	10	-			15	16		0	
					13	14		0		06	05		0	
					11	08	-			22	23		0	
					04	07			+					
					12	07	-							
Totals		4	6	2			11*	4	5			7	8	3

*Significant beyond .05 level of confidence.

APPENDIX C-10

CHI-SQUARE TWO-WAY CLASSIFICATION CONTINGENCY TABLE
TESTING THE NULL HYPOTHESIS OF INDEPENDENCE BETWEEN
THE TOTAL NEGATIVE CHANGERS, NON-CHANGERS, AND
POSITIVE CHANGERS FOR ALL FIFTEEN VARIABLES
OF THE EDWARDS PPS (BY DOGMATISM
GROUPINGS)

O : open-minded externs
N : neither open- nor closed-minded externs
C : closed-minded externs

	O	N	C	Totals
-	53	90	85	228
0	79	122	109	310
+	48	88	76	212
Totals	180	300	270	750

Expected frequencies:

1. $\frac{228}{750} \times 180 = (e) \text{ or } 54.72$
2. $\frac{228}{750} \times 300 = 91.20$
3. $\frac{228}{750} \times 270 = 82.08$
4. $\frac{310}{750} \times 180 = 74.4$
5. $\frac{310}{750} \times 300 = 124.00$
6. $\frac{310}{750} \times 270 = 111.60$
7. $\frac{212}{750} \times 180 = 50.89$

$$8. \quad \frac{212}{750} \times 300 = 84.80$$

$$9. \quad \frac{212}{750} \times 270 = 76.32$$

$$\chi^2 = \frac{(-1.72)^2}{54.72} = \frac{2.96}{54.72} = .05$$

$$+ \frac{(-1.20)^2}{91.20} = \frac{1.44}{91.20} = .02$$

$$+ \frac{(2.94)^2}{82.08} = \frac{8.64}{82.08} = .11$$

$$+ \frac{(4.60)^2}{74.40} = \frac{21.16}{74.40} = .28$$

$$+ \frac{(-2.00)^2}{124.00} = \frac{4}{124} = .03$$

$$+ \frac{(-2.60)^2}{111.60} = \frac{6.26}{111.60} = .06$$

$$+ \frac{(-2.89)^2}{50.89} = \frac{8.35}{50.89} = .16$$

$$+ \frac{(3.20)^2}{84.80} = \frac{10.24}{84.80} = .12$$

$$+ \frac{(-.32)^2}{76.32} = \frac{.10}{76.32} = .001$$

$$\chi^2 = .83 \quad (\text{Not Sig.})$$

APPENDIX D

MANIFEST NEEDS OF EDWARDS PERSONAL PREFERENCE SCHEDULE

APPENDIX D

THE MANIFEST NEEDS ASSOCIATED WITH EACH OF
THE 15 EPPS VARIABLES ARE:¹

1. ach Achievement: To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

2. def Deference: To get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

3. ord Order: To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip to organize details of work, to keep letters and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change.

¹Edwards, op. cit., p. 11.

4. exh Exhibition: To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

5. aut Autonomy: To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

6. aff Affiliation: To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

7. int Intraception: To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to

judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

8. suc Succorance: To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.

9. dom Dominance: To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

10. aba Abasement: To feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered does more good than harm, to feel the need for punishment for wrong doing, to feel better when giving in and avoiding a fight than when having one's own way, to feel the need

for confession of errors, to feel depressed by inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

11. nur Nurturance: To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

12. chg Change: To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

13. end Endurance: To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in order to get a job done, to put in long hours of work without distraction, to stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

14. het Heterosexuality: To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to kiss those of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or to tell jokes involving sex, to become sexually excited.

15. agg Aggression: To attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong, to read newspaper accounts of violence.

APPENDIX E

IDEAS ABOUT "MYSELF" INVENTORY

Section	Page
1. Ideas About "Myself" Inventory.	197
2. Kruskal-Wallis Analysis of Variance by Sums of Ranks (One Criterion of Classi- fication) on Ideas About "Myself" Inventory: Pre- to Post-Total Change Scores for Externs (By Dogmatic Group- ings)	201

APPENDIX E-1

IDEAS ABOUT "MYSELF" INVENTORY

Name _____ Date _____

The statements below should be responded to in such a way as to give the best possible picture of what you are like. There are no "right" answers. We are all different. Try not to be too critical of or too favorable to yourself. Use the following response key:

- A - Statement describes me very accurately.
- B - Statement is quite descriptive of me.
- C - Statement is both true and untrue as a description of me.
- D - Statement is generally not a true description of me.
- E - Statement is decidedly false as a description of me.

- _____ 1. I think I have a pretty clear understanding of how the people I work with see themselves and the job they are trying to do.
- _____ 2. I am not the kind of person who can stand up to his superiors and disagree with them.
- _____ 3. It is important for me to maintain my individuality within any group to which I belong.
- _____ 4. My relations with other people never present much difficulty for me.
- _____ 5. I enjoy following a good leader more than being a leader myself.
- _____ 6. I will stand up for my own ideas even under a lot of pressure from others to change.
- _____ 7. I often get so involved in doing a particular job that I don't pay much attention to the feelings and reactions of other people concerned.
- _____ 8. My first reaction to a proposal that things be done differently is usually negative.
- _____ 9. I am aware of most of the shortcomings in my social behavior.

- ___10. I always try to achieve a position of power in my group.
- ___11. I try to have things thoroughly thought out before taking an active part in the group.
- ___12. I feel I am more fully expressing my personality when I am working in a group than at any other time.
- ___13. I am often tactless and hurt people's feelings without meaning to.
- ___14. I often get so wound up in what I want to say that I do not really listen to what other people are saying.
- ___15. I do not like to express my ideas unless I know they have the support of others.
- ___16. I usually react positively to new people.
- ___17. I am pretty good at taking initiative in a group to keep things moving along.
- ___18. If I believe in something, I will work for it even when this requires opposing friends and associates.
- ___19. I do not pay enough attention to the needs and feelings of individuals with whom I work.
- ___20. I am better at arguing than at conciliating and compromising.
- ___21. I am easily persuaded by others to see things their way.
- ___22. I often detach myself psychologically from the group and just watch what is going on.
- ___23. When someone is talking, I not only listen to what he says but also notice how people react to the things he says.
- ___24. I find it very frustrating to have to work on an important project with other people instead of alone.
- ___25. I get quite upset when people allow their personal feelings to affect the work they are doing.

- ____26. I am quite fearful about going into new social situations.
- ____27. I am happier when working on a project with others than I am when working on something of my own.
- ____28. I can usually predict the reactions of people I know to new suggestions.
- ____29. I enjoy sticking up for my own ideas.
- ____30. I cannot stand up against others in support of unpopular ideas.
- ____31. I am pretty good at finding ways of bringing together two people who seem to be disagreeing.
- ____32. I think I have quite a lot of influence on other people.
- ____33. I sometimes feel that a group or relationship in which I am involved gets so strong that it hampers my individuality and freedom.
- ____34. I am often amazed at the variety of impressions different participants have of the same meeting.
- ____35. It is relatively easy for me to persuade people to see things my way.
- ____36. It does not matter to me whether other people agree with my opinions or not.
- ____37. I get emotionally upset when a group member begins to introduce side issues into the group discussion.
- ____38. I do not like to have the final responsibility for making decisions.
- ____39. I would say I am more likely to dominate a group than to be dominated by it.
- ____40. I am able to silence a group member tactfully when he attempts to introduce his personal feelings into the discussion.
- ____41. I feel flocked and frustrated in my own school situation because of the difficulties resulting from the attitudes of certain people there.

- ____ 42. I work better with individuals than I do in a group.
- ____ 43. I feel very much on the spot when people discuss faults I know I have.
- ____ 44. I take a lot of initiative in starting new activities or procedures.
- ____ 45. I can make a greater contribution by working as part of a group than I can by working alone.

APPENDIX E-2

KRUSKAL-WALLIS ANALYSIS OF VARIANCE BY SUMS OF RANKS
(ONE CRITERION OF CLASSIFICATION) ON IDEAS ABOUT
"MYSELF" INVENTORY: PRE- TO POST-TOTAL CHANGE
SCORES FOR EXTERNS (BY DOGMATIC GROUPINGS)

O : open-minded externs

N : neither open- nor closed-minded externs

C : closed-minded externs

$$H = \frac{\frac{12}{N(N+1)} \sum_{i=1}^k \frac{R_i^2}{N_i} - 3 (N + 1)}{1 - \frac{\sum T}{N(N^2-1)}}$$

$$H = \frac{\frac{12}{50(50+1)} \left(\frac{344^2}{12} + \frac{438.5^2}{20} + \frac{492.5^2}{18} \right) - 3 (50 + 1)}{1 - \frac{1170}{46 (46^2 - 1)}}$$

$$H = \frac{\frac{12}{2550} \left(\frac{118336}{12} + \frac{192,282.25}{20} + \frac{242556.25}{18} \right) - 3 (51)}{1 - \frac{1170}{97290}} = 1 - .012$$

$$H = \frac{.0047 (9861.33 + 9,614.11 + 13,475) - 153}{.9880}$$

$$H = \frac{.0047 (32950.74) - 153}{.9880}$$

$$H = \frac{154.87 - 153}{.9880}$$

$$H = \frac{1.87}{.9880}$$

$$H = 1.89$$

Tabled value of $\chi^2_{.95}$, 2 d.f. is 5.99.

Since the H does not exceed this tabled value, we conclude that the externs did not differ significantly in the number of changes they cited between pre- and post-tests on the Ideas About "Myself" Inventory.

APPENDIX F

POST-MEETING REACTION SHEETS

Section	Page
1. Form A	204
2. Evaluation Form A.	205
3. Form B	214
4. Form C	215
5. Number of Times Chosen on Evaluation Form C for Externs, Identified here by Dog- matism Score Only.	216

APPENDIX F-1

POST MEETING REACTION SHEET

Name _____ Date _____ Group _____ Time _____
to _____ Activity _____

Please circle letter of answer chosen

- | | |
|---|---|
| 1. What sort of progress was the group making?

A. maintaining (interaction)
B. moving
C. groping
D. blocking
E. planning | 5. How did the leader seem to feel about what was going on?

A. resigned
B. exuberant
C. resistant
D. neutral
E. confident |
| 2. How did the leader act?

A. purposefully
B. like a member
C. watchfully
D. withdrawn
E. compulsively | 6. Who had the most influence?

A. reciprocal influence
B. the group dominated
C. the leader influenced
D. the leader dominated
E. the group influenced |
| 3. In general, how do you feel the group reacted to your participation?

A. with encouragement
B. with neutrality
C. with disagreement
D. with discouragement
E. with agreement | 7. What did the group do with its emotions?

A. expressed discomfort at them
B. give in to them completely
C. accepted and described them
D. were unaware of them
E. utilized them to understand its problems |
| 4. What did the group seem most concerned about?

A. individuals
B. its task
C. meaning of its experience
D. itself
E. relations between individuals | 8. How satisfactory do you feel the meeting was?

A. fair
B. excellent
C. good
D. terrible
E. poor |

APPENDIX F-2

EVALUATION FORM A
PERCENTAGES AND SCORES BY QUESTION (1-8) AND ITEM
(A,B,C,D,E) PER DOGMATIC
GROUPING* FOR THE FALL, DECEMBER AND
FEBRUARY MEETINGS OF EXTERNS

*O = open-minded externs

N = neither open- nor closed-minded externs

C = closed-minded externs

The percentages were computed from the totals in the second table. Only the percentage tables are presented in the body of this paper on pages 88 through 90.

1. What sort of progress was the group making?

	Totals				
	O	N	C		
		%	%		
A. Maintaining (interaction)	26	23	12	20	
B. Moving	33	39	61	44	
C. Grouping	35	38	27	34	
D. Blocking	3	0	0	1	
E. Planning	3	0	0	1	
Total	100	100	100	100	

	O (n = 12)*					N (n = 20)					C (n = 18)				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Fall	3	3	4	1	0	2	6	2	0	0	0	9	7	0	0
December	1	3	6	0	1	5	3	8	0	0	1	8	1	0	0
February	4	4	1	0	0	3	8	6	0	0	4	8	3	0	0
Totals	8	10	11	1	1	10	17	16	0	0	5	25	11	0	0

2. How did the leader act?

- A. Purposefully
- B. Like a member
- C. Watchfully
- D. Withdrawn
- E. Compulsively
- No leader

O	N	C	Totals
%	%	%	%
26	29	20	24
41	36	34	37
16	19	31	22
0	4	5	3
7	6	0	4
10	6	10	10
Total	100	100	100

	O (n = 12)*						N (n = 20)						C (n = 18)					
	A	B	C	D	E	-	A	B	C	D	E	-	A	B	C	D	E	-
Fall	1	15	2	0	0	3	5	6	3	0	0	1	2	2	8	2	0	3
December	2	4	2	0	2	0	2	5	5	2	2	1	1	7	2	0	0	0
February	4	3	1	0	0	0	7	7	1	0	1	1	5	5	3	0	0	1
Totals	7	12	5	0	2	3	14	18	9	2	3	3	8	14	13	2	0	4

3. In general, how do you feel the group reacted to your participation?

	O	N	C	Totals
	%	%	%	%
A. With encouragement	50	35	37	39
B. With neutrality	18	37	35	31
C. With disagreement	15	14	8	12
D. With discouragement	10	8	0	6
E. With agreement	7	6	20	12
Total	100	100	100	100

	O (n = 12)*					N (n = 20)					C (n = 18)				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Fall	6	0	1	1	2	6	3	3	2	2	6	7	2	0	2
December	3	4	2	1	0	5	5	4	1	1	7	2	0	0	2
February	5	1	1	1	0	6	10	0	1	0	3	6	1	0	5
Totals	14	5	4	3	2	17	18	7	4	3	16	15	3	0	9

4. What did the group seem most concerned about?

	O	N	C	Totals
	%	%	%	%
A. Individuals	36	30	24	29
B. Its task	20	6	14	12
C. Meaning of its experience	14	24	7	15
D. Itself	0	6	18	9
E. Relations between individuals	30	34	37	35
Total	100	100	100	100

	O (n = 12)*					N (n = 20)					C (n = 18)				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Fall	2	5	2	0	1	3	3	1	3	6	3	3	3	3	5
December	4	1	1	0	4	6	0	3	0	7	3	1	0	2	5
February	4	0	1	0	3	6	0	8	0	4	4	2	0	3	6
Totals	10	6	4	0	8	15	3	12	3	17	10	6	3	8	16

5. How did the leader seem to feel about what was going on?

	O	N	C	Totals
	%	%	%	%
A. Resigned	22	24	10	18
B. Exuberant	8	7	6	7
C. Resistant	8	9	20	12
D. Neutral	43	30	31	34
E. Confident	8	21	27	20
--. No leader	11	9	6	9
Total	100	100	100	100

	O (n = 12) *						N (n = 20)						C (n = 18)					
	A	B	C	D	E	-	A	B	C	D	E	-	A	B	C	D	E	-
Fall	1	1	0	6	1	1	2	1	1	5	3	1	1	1	5	2	4	3
December	4	1	2	3	0	0	6	1	1	6	1	1	0	1	1	5	4	0
February	1	0	1	3	1	2	3	1	2	3	6	2	3	1	2	5	3	0
Totals	6	2	2	12	2	3	11	3	4	14	10	4	4	3	8	12	11	3

6. Who had the most influence?

	O	N	C	Totals
	%	%	%	%
A. Reciprocal influence	28	45	21	33
B. The group dominated	14	2	19	11
C. The leader influenced	14	22	19	20
D. The leader dominated	4	4	7	5
E. The group influenced	40	27	34	31
Total	100	100	100	100

- A. Reciprocal influence
- B. The group dominated
- C. The leader influenced
- D. The leader dominated
- E. The group influenced

	O (n = 12)*					N (n = 20)					C (n = 18)				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Fall	3	2	1	0	3	9	0	5	0	2	3	4	3	0	7
December	2	1	2	1	5	6	1	1	1	6	3	2	1	1	4
February	3	1	1	0	3	6	0	5	1	5	3	2	4	2	3
Totals	8	4	4	1	11	22	1	11	2	13	9	8	8	3	14

7. What did the group do with its emotions?

	O		N		C		Totals	
	%		%		%		%	
A. Expressed discomfort at them	54		42		30		41	
B. Gave in to them completely	0		0		2		1	
C. Accepted and described them	17		40		34		32	
D. Were unaware of them	7		8		18		11	
E. Utilized them to understand its problem	22		10		16		15	
Total	100		100		100		100	

	O (n = 12)*					N (n = 20)					C (n = 18)				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Fall	5	0	3	1	1	7	0	5	3	1	5	1	7	2	2
December	6	0	2	1	1	8	0	7	0	1	2	0	3	2	4
February	4	0	0	0	4	6	0	7	1	3	5	0	5	4	1
Totals	15	0	5	2	6	21	0	19	4	5	12	1	15	8	7

8. How satisfactory do you feel the meeting was?

	O	N	C	Totals
	%	%	%	%
A. Fair	36	37	20	32
B. Excellent	7	12	22	14
C. Good	47	45	54	48
D. Terrible	3	4	0	2
E. Poor	7	2	4	4
Total	100	100	100	100

	O (n = 12)*					N (n = 20)					C (n = 18)				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Fall	3	1	4	1	1	6	2	8	1	0	4	4	7	0	2
December	3	0	6	0	1	8	1	5	1	1	1	2	8	0	0
February	4	1	3	0	0	5	3	10	0	0	3	3	8	0	0
Totals	10	2	13	1	2	19	6	23	2	1	8	9	23	0	2

FORM B

APPENDIX F-3

Date _____

Place _____

Time _____

POST-MEETING REACTION SHEET
(Members need not sign their names)

1. How did you feel about this meeting? (check)

Very	Somewhat	Neither	Somewhat	Very
Dissatisfied	Dissatisfied	Satisfied	Satisfied	Satisfied
		nor		
		Dissatisfied		

2. Please comment on why you felt this way.

3. Were there times when you wished to speak but did not?

Never	A few times	Fairly	Very	Almost all
		Often	Often	the time

4. What things helped you to take part in the meeting?

5. What things hindered you from taking part in the meeting?

6. How could our next meeting be improved?

FORM C

APPENDIX F-4

Date _____

Place _____

Time _____

GROUP MEMBER PERCEPTION INSTRUMENT

Will you please answer the questions below? Give both first and last names.

1. What three people in your Group seem to be most like you in the way they think, act and feel?

1. _____ 2. _____ 3. _____

2. What three people in your Group seem to express their feelings most easily in the group?

1. _____ 2. _____ 3. _____

3. What three people in your Group do you feel would make the best secondary school principals?

1. _____ 2. _____ 3. _____

4. What three people in your Group seem to have most increased their understanding of themselves and philosophy of education?

1. _____ 2. _____ 3. _____

Please be sure to have listed three and only three names for each question. I recognize these choices are difficult to make, but it is important that all follow the same procedure.

APPENDIX F-5

NUMBER OF TIMES CHOSEN ON EVALUATION
FORM C FOR EXTERNS, IDENTIFIED HERE
BY DOGMATISM SCORE ONLY
(N = 50)

O : open-minded externs (n = 12)
N : neither open- nor closed-minded externs (n = 20)
C : closed-minded externs (n = 18)

Scores		Item 1	Item 2	Item 3	Item 4
O	124	7	13	4	11
	118	4	3	3	2
	121	13	14	14	12
	106	13	8	13	12
	113	7	6	13	12
	89	10	12	12	8
	108	8	10	7	10
	90	9	11	8	11
	117	7	6	7	4
	64	2	7	8	7
	117	2	8	6	8
	117	9	6	13	7
N	134	4	4	9	4
	129	3	4	3	7
	131	5	7	5	12
	140	3	5	6	2
	143	9	5	5	9
	132	8	10	9	5
	144	1	1	4	4
	141	4	4	3	6
	131	3	5	4	7
	134	6	3	0	3
	130	2	0	1	0
	138	6	2	3	5
	142	6	4	8	2
	142	6	5	10	8
	132	9	9	7	10
	133	4	1	2	7
	138	7	7	8	2
	125	10	8	7	6
	125	5	6	5	6
	125	10	11	10	10

Scores		Item 1	Item 2	Item 3	Item 4
C	152	5	4	3	4
	152	10	8	9	11
	167	4	6	5	5
	153	10	6	6	7
	151	8	5	5	5
	156	10	12	11	9
	179	12	14	7	10
	160	8	5	10	12
	158	8	10	9	4
	149	6	9	8	10
	151	6	13	9	7
	149	3	1	1	1
	163	4	2	4	6
	163	10	2	8	5
	166	5	4	6	5
	160	4	7	4	6
	162	5	11	5	12
	155	11	12	10	10

APPENDIX G

EVALUATIONS

Section	Page
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APPENDIX G-1

April, 1966

Evaluation of Self and Extern Program

It will be helpful in planning for future externs if you will fill out the attached forms and mail them to me. It is suggested that you space your time so that you will not have to fill these out in one sitting. However, please try to have them completed and in the mail no later than two weeks from today. If for some reason you are not able to complete them within the next two weeks then please submit them as soon thereafter as you can.

All reports remain confidential information. You will receive a copy of Glen Brown's abstract from his dissertation and all personal data will be returned to you sometime after August, 1966.

PLEASE PUT YOUR NAME AND DATE ON EACH FORM.

Attached: Personal Opinion Form
 Edwards Personal Preference Schedule
 Ideas About Myself Inventory
 Rating of Extern Program
 Personal Data Form

APPENDIX G-2

RATING SCALE FOR EXTERN PROGRAM

NAME _____

DATE _____

Place a check-mark (✓) in the appropriate place on the continuum to indicate your evaluation of your extern and extern related experiences. Value increases as you score from left to right. Comments which you may wish to make to help clarify your answers are welcomed.

1. The Extern Program

0 1 2 3 4 5 6 7 8 9 10

2. The T-group

0 1 2 3 4 5 6 7 8 9 10

3. The small group discussions

0 1 2 3 4 5 6 7 8 9 10

4. The large group lecture

0 1 2 3 4 5 6 7 8 9 10

5. The after-class discussions

0 1 2 3 4 5 6 7 8 9 10

6. The student morale study

0 1 2 3 4 5 6 7 8 9 10

7. The teacher morale study

'	'	'	'	'	'	'	'	'	'	'
0	1	2	3	4	5	6	7	8	9	10

8. The written problems

'	'	'	'	'	'	'	'	'	'	'
0	1	2	3	4	5	6	7	8	9	10

9. The reactions to the written problems

'	'	'	'	'	'	'	'	'	'	'
0	1	2	3	4	5	6	7	8	9	10

10. The school visits by the professor

'	'	'	'	'	'	'	'	'	'	'
0	1	2	3	4	5	6	7	8	9	10

11. The weekly small group interaction meetings
with your teachers (Florida)

'	'	'	'	'	'	'	'	'	'	'
0	1	2	3	4	5	6	7	8	9	10

12. Independent reading

'	'	'	'	'	'	'	'	'	'	'
0	1	2	3	4	5	6	7	8	9	10

13. January cram sessions

'	'	'	'	'	'	'	'	'	'	'
0	1	2	3	4	5	6	7	8	9	10

APPENDIX G-3

NAME _____

DATE _____

EXTERN PROGRAM
1965-66

Please list behavioral changes that you have observed in yourself this year which you attribute to the extern program. Also, indicate behavioral changes which have been called to your attention by others with whom you live and/or work. Please identify the person by title only (e.g., student, wife, janitor, etc.).

APPENDIX G-4

NAME _____

DATE _____

EXTERN PROGRAM
1965-66

Please write down your suggestions for improving educational leadership in your school. What is the most important problem you face each morning in trying to improve the educational program in your school?

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