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THE STABILITY OF ATTITUDES IN A LONGITUDINAL STUDY RESULTING FROM A SUMMER CONFERENCE ON INDIVIDUALIZED INSTRUCTION

A Dissertation

Presented for the

Doctor of Education

Degree

The University of Tennessee

Timothy John Touzel

August 1975

1229451

ACKNOWLEDGMENTS

Trying to include everyone who has helped acquire a lengthy goal such as a doctoral degree is difficult, but I wish to especially thank the following people: A. Paul Wishart, my chairman, because he inspired me to be scientific, but not without feeling; Earl Ramer, Wilbur Slawson, and Kermit Blank, my committee members, because they cared, encouraged, and assisted; Suzi Touzel for inspiring me and being the greatest source of stimulation possible; Jim Wingate for being the father I missed in late adolescence; Stewart Touzel, my deceased father, for his beliefs and aspirations; Margaret Touzel for being a dedicated and loving mother; Bess Wingate, since "I am part of all that I have met"; Randy Hobbs who insisted that I finish; Jesse C. Mills for believing in me when the chips were down; my Memphis students because they challenged me to be a better teacher; my UTK students because they helped me "put it together"; Lew Hodge, Bob Howard, Anand Malik, and Clint Allison because they taught; Bill Butefish for being Bill Butefish; Russ French for his stimulating ideas and enthusiasm; Jerry Bellon for he knows; and Marilyn Caponetti and Linda Dent because they can type better than I can.

ABSTRACT

Purpose

The purpose of the study was to determine the stability of attitudes formed or changed as a result of a summer conference about individualizing instruction.

Procedures

A Non-Equivalent Control Group Design was used rather than a completely randomized design due to the nature of the study. The participants in the two summer conferences completed a pretest, posttest, and delayed posttest. There was one week between the pre- and post-test. Nine months later the delayed posttest was given to participants of both conferences. A 10 percent random sample received the Edwards Personal Preference Schedule.

Collection of Data and Methods Used to Analyze the Data

The semantic differential technique was used to collect the attitudinal data. The resulting data were analyzed by the independent samples t-test based on gain scores. Personality differences were determined by the Edwards Personal Preference Schedule which were analyzed by the t-test.

Results

Many individual polar adjectives exhibited improvement, but on the whole, the concept of the Open Classroom

was the only concept to show a marked difference between the two groups. The experimental group had a much more positive attitude about the Open Classroom after one week than the control group although both groups began with very low feelings about the Open Classroom. The treatment caused a more positive feeling about the Open Classroom.

Results from the delayed posttest were similar to the original posttest. There was a general drop in mean scores for all concepts, but the experimental group maintained higher scores. Gain scores again showed that the concept, Open Classroom, was still held in higher esteem by the experimental group although the scores were still below the average for all concepts.

The Edwards Personal Preference Schedule revealed a slight difference in the two groups. The experimental group was more deferent and less aggressive.

Selected Conclusions

1. Attitudes were shown to be changeable as a result of a short conference.

2. The majority of attitudes were unchanged.

3. Many attitudes that were changed initially reverted back to originally held levels.

4. One half of the attitudes changed remained changed after nine months.

Implications

1. Attitude measurement, even for short conferences can be an important source of evaluative information.

2. Evaluations should include immediate and long-term data to explicate the true worth of a program.

Recommendations

1. The congruence between attitudes changed and behaviors changed as a result of a short conference should be examined.

2. The relationship between affective, cognitive, and behavioral outcomes of short conferences should be assessed further.

3. The use of other attitudinal instruments, such as Guttman and Likert scales, should be tried to assess their effectiveness for short conferences.

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CHAPTER I

INTRODUCTION AND GENERAL CONSIDERATIONS

I. RESEARCH PURPOSES

The primary purpose of this research was to assess, for the evaluation of short educational programs, attitudinal stability that results from affective changes as a consequence of an intensive treatment.

Due to the increasing importance with which the use of affective outcomes and evaluative information in educational and social science programs is utilized, there exists a need to clarify the extent to which attitudinal information should be applied in assessing an educational program.

II. SIGNIFICANCE OF THE STUDY

In the comprehensive assessment of educational programs, attitudinal measures are often used in determining the program's effectiveness. Attitudinal measures are often considered to be more useful than cognitive measures, since more cognitive measurements are often needed to acquire as much information as one affective measurement. In addition to offering more information, it is generally assumed that

support of a particular attitude indicates that a behavioral disposition will follow towards the promoted value of the program developers. These reasons in conjunction with the ease with which it is possible to administer affective instruments make the use of attitudinal measures widespread.

Even though attitudinal devices are in frequent use, the optimal timing of the administration of any measure for the assessment of the true effects of a program is unclear as mentioned by Caro (1973, p. 318). He found that the stability and durability of program effects are also uncertain. Yet, when attitudes are significantly altered during a conference or workshop, it is assumed that those changes in attitudes are relatively permanent. Attitudes, however, as explained by Hoge and Bender (1974, pp. 579-580) can be affected in an environment by many situational variables. Environmental variables can affect both a new change in attitudes or a relapse to attitudes held previously. Therefore, assuming that changes are even relatively stable may lead to indefensible generalizations. McGuire (1960, p. 350) and Chen (in Hovland, et al., 1953, p. 243) found that attitudes changed in a certain direction can be mitigated over time, which implies that although attitudinal measures at time x_1 show a significant shift towards some desired attitude,

that at a later time, x_2, a reversal towards originally-held attitudes is possible. For this reason, the administration and use of attitudinal devices at the immediate conclusion of a given treatment may not be useful and may possibly be misleading.

It is acknowledged by many investigators such as Remmers, et al. (1942), Hovland, et al. (1953), Hughes (1971), and Khan and Weiss (1973) that attitudes can be changed, even radically, but typical attitude measures taken at the end of a program may not be the best indication of a permanent attitudinal and behavioral structure.

III. HYPOTHESES

The following hypotheses were tested in this study:

1. There is no significant difference between experimental and control groups at the 0.05 level between the pretest, x_1, attitudinal scores as measured by a semantic differential and the posttest, x_2, attitudinal scores.

2. There is no significant difference between experimental and control groups at the 0.05 level between the pretest, x_1, attitudinal scores as measured by a semantic differential and the delayed posttest, x_3, attitudinal scores.

3. There is no significant difference between

experimental and control groups at the 0.05 level between the posttest, x_2, attitudinal scores as measured by a semantic differential and the delayed posttest, x_3, attitudinal scores.

4. There is no significant difference between the control and experimental groups in personality types as measured by the Edwards Personal Preference Schedule.

IV. PROCEDURES

Identification of the Experimental Population

The population of the study was composed of educators associated with member school systems and institutions of the Southern Association of Colleges and Schools and educators associated with the Educational Opportunities Planning Center for Tennessee and Kentucky.

Identification of the Control Population

All educators registering for a two week, July 28 through August 10, 1974, workshop in conservation education were included in the control group. Like participants in the experimental group, the control group was composed of teachers, primary through high school, and administrators.

Sampling Procedures for the Experimental Population

All educators chosen by their system or institution who participated in a conference at The University of

Tennessee dealing with "Individualized and Personalized Instruction" during the week of June 24 through June 28, 1974, were included in the sample. A total of 183 participants contributed data. Several participants attended the conference in an auxiliary capacity and did not contribute to the results and were, therefore, not part of this study.

Sampling Procedures for the Control Population

The whole population (37) was included in the sample except for one individual who was forced to miss the administration of the instruments due to illness.

Characteristics of the Populations

Both the experimental and control populations were relatively similar. The control population had a greater percentage of young participants (35.1 percent less than 30 years old) than the experimental population (21.9 percent). The age differences might explain why there were a greater number of B.S. degree participants in the control group (70.3 percent) than the experimental group (42.5 percent). Most other characteristics in Tables I, II, and III and Appendix C can be seen to be very similar between the two groups. They both had about the same number of males and females and had participated equally in recency of college courses. The last major difference was that the experimental group consisted of 27.4 percent principals while the control group consisted of 8.1 percent.

TABLE I

CHARACTERISTICS OF EXPERIMENTAL AND CONTROL GROUPS

Characteristics	Values	Experimental		Control	
		Abs. Freq.	Rel. Freq.	Abs. Freq.	Rel. Freq.
Education	B.S.	62	42.5	26	70.3
	M.S.	53	36.3	7	18.9
	M.S. + 45 hrs.	24	16.4	4	10.8
	Ed.D	5	3.4	0	0.0
	Missing Responses	2	1.4	0	0.0
Totals		146	100.0	37	100.0
Time since last college course	Less than 1/2 yr.	63	43.2	20	54.1
	Between 1/2 & 1 yr.	20	13.7	4	10.8
	Between 1 & 2 yrs.	30	20.5	5	13.5
	Between 2 & 4 yrs.	10	6.8	3	8.1
	More than 4 yrs.	23	15.8	5	13.5
Totals		146	100.0	37	100.0
Educational experience	Less than 4 yrs.	17	11.6	5	13.5
	Between 4 & 8 yrs.	26	17.8	17	45.9
	Between 8 & 11 yrs.	26	17.8	4	10.8
	Between 12 & 15 yrs.	21	14.4	3	8.1
	Between 16 & 20 yrs.	26	17.8	5	13.5
	More than 20 yrs.	30	20.6	2	5.4
	Missing Responses	0	0.0	1	2.7
Totals		146	100.0	37	100.0

TABLE II

SEX AND AGE OF PARTICIPANTS

Characteristics	Experimental Group Abs. Freq.	Experimental Group Rel. Freq. (Percent)	Control Group Abs. Freq.	Control Group Rel. Freq. (Percent)
Sex				
Male	51	34.9	16	43.2
Female	95	65.1	21	56.8
Missing Responses	0	0.0	0	0.0
Totals	146	100.0	37	100.0
Age				
Less than 25 yrs.	8	5.5	4	10.8
Between 25 & 29 yrs.	24	16.4	9	24.3
Between 30 & 39 yrs.	22	15.1	3	8.1
Between 40 & 44 yrs.	36	24.7	4	10.8
Between 45 & 49 yrs.	7	4.8	8	21.6
More than 49 yrs.	28	19.2	3	8.1
Missing Responses	1	0.7	0	0.0
Totals	146	100.0	37	100.0

TABLE III

PROFESSIONAL POSITION

Position	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
Teacher	85	58.2	32	86.5
Principal	40	27.4	3	8.1
Administrator or supervisor	14	9.6	1	2.7
Higher education	0	0.0	1	2.7
Counselor	2	1.4	0	0.0
Other	5	3.4	0	0.0
Missing responses	0	0.0	0	0.0
Totals	146	100.0	37	100.0

Sources and Methods for the Literature Search

In assessing the research done in the area of the affective domain, attitudes (as they relate to education, teachers and the like), longitudinal studies, and workshop/conferences, the researcher conducted a search of the literature using the following methods and tools. ERIC computer searches for the adjective descriptors Evaluation Techniques and Program Description were completed in the spring of 1974, and a manual ERIC search for the descriptors Summer Workshops, Teacher Attitudes, and Longitudinal Studies was completed in the summer of 1974. The Second Handbook of Research on Teaching (1973, pp. 758-804) was the most helpful tool used to determine the research which had been done in the area of the affective domain. In the education section of Dissertation Abstracts, studies relating to the affective domain, longitudinal studies, and workshops were searched in the second quarter of 1973; and in May 1975 an exhaustive search was made in the new education index to Dissertation Abstracts using the adjective descriptors mentioned above. The Education Index was searched from July 1963 to May 1975 for the following descriptors: Educational Workshops, Follow Up Studies, Attitude (Change of), Attitudes (of Principals, of Teachers), and Evaluation. The Current Index for Journals in Education was searched from 1969

through 1973 for the descriptors Evaluation Techniques, Program Description, Teacher Attitudes, and Summer Workshops, and through 1974 for the latter two descriptors. Along with the card catalog, these were the primary sources that served as the basis for developing the review of the literature for this study.

Instruments

A semantic differential was used as an indicator of attitudinal change in a pretest, $posttest_1$, and $posttest_2$ design for 18 concepts relating to individualized instruction, readiness to change, and education in general. The concepts included in the instrument are listed in Table IV. The concepts used were developed by the conference planning team and professors included in the conference. A selected group of eight conference topics (see Table IV) were chosen as representative of the total conference agenda. Three concepts--failure, methods, and motivation--were chosen to determine if participants were responding according to a socially desirable response set. Seven concepts (see Table IV) were chosen to assess participants' feelings in areas of educational change connected to conference topics.

The test-retest reliability coefficient of the semantic differential was reported by Osgood, Suci, and Tannenbaum (1957, p. 127) as being 0.85.

TABLE IV

SEMANTIC DIFFERENTIAL CONCEPTS

Conference Topics	Preassessed Topics	Action Topics
Personalized teaching	Methods	Organized
Assessing individual needs	Failure	Innovation
Open classroom	Motivation	Stick-to-itiveness
Systematic planning		To be helped
Continuous progress		To follow directions
Program evaluation		To help
Learning styles		Achievement
Independent study		

Personality variables were examined with the use of the Edwards Personal Preference Schedule, which was used to assess the possible effects of personality types on evaluative data.

The Edwards Personal Preference Schedule (EPPS) has been one of the most widely-used personality devices. Its popularity in research literature, as mentioned by Stricker (in Buros, 1966, p. 1005), comes from its theoretical base of Murray's 15 needs (see Table V). Also, Stricker continued, Edwards' attempt to minimize the effects of social desirability in self-reporting instruments has added to its usefulness. In the construction of the EPPS, socially-desirable items were included and these were correlated 0.87 with the testees frequency of endorsement.

Reliability measures for the EPPS are similar to other personality devices having a test-retest reliability coefficient of 0.73.

V. DEFINITION OF TERMS

Affective Domain

The affective domain is the broad constellation of variables relating to feelings, emotions, interests, attitudes, values, and other personality characteristics (Khan and Weiss, 1973, p. 760).

TABLE V

MURRAY'S FIFTEEN MANIFEST NEEDS INCLUDED IN THE EDWARDS PERSONAL PREFERENCE SCHEDULE

Manifest Needs	Summary Description
Achievement	To do one's best, to be successful
Deference	To get suggestions from others, to follow directions, to praise others, to conform to custom
Order	To have written work neat and organized, to have things organized
Exhibition	To say witty and clever things, to be the center of attraction
Autonomy	To be independent of others in making decisions, to feel free to do what one wants
Affiliation	To be loyal to friends, to do things with friends rather than alone
Intraception	To analyze one's motives and feelings, to understand how others feel about problems
Succorance	To seek encouragement from others
Dominance	To argue for one's point of view, to be a leader in groups to which one belongs
Abasement	To feel guilty when one does something wrong
Nurturance	To help friends when they are in trouble
Change	To do new and different things, to meet new people
Endurance	To keep at a job until it is finished
Heterosexuality	To go out with members of the opposite sex
Aggression	To attack contrary points of view

Attitude

An attitude is the affective component attached to a stimulus object (Fishbein, 1967c, p. 258), which is an implicit evaluative response (Osgood, et al., 1957, p. 189).

Belief

A belief is a probabilistic judgment about the existence of the attitude object (a belief in) and/or about the existence between the attitude object and another concept (a belief about) (Fishbein, 1967c, p. 259).

Evaluation

Evaluation is defined as the process of designing methods, collecting information, and using data to make decisions about a desired educational program (adapted from Stufflebeam, p. 53, 1969; and Stake, p. 5, 1967).

Opinion

An opinion is an impression or guess of an affective response.

Program

A program is any educational event designed for the purpose of instruction that considers objectives and the means for attaining them. The substance of the program has been created and/or reorganized from a field

of knowledge and is developed for teachers and learners (Myers and Klein, 1969).

Semantic Differential

The semantic differential is a technique used to develop an instrument for measuring attitudes (Heise, 1970, p. 236). The form chosen for this research consisted of 18 concepts and a seven-unit rating scale with 12 bipolar adjectives.

VI. DELIMITATIONS

The following limitations were imposed upon this study:

1. The research sample was limited to educators in the southeastern region of the United States.

2. The experimental treatment was similar but not identical for each participant since several options were available for each person.

3. The participants in the experimental group were selected by the cooperating school system and may not be representative of educators in general.

4. No random control group was available.

VII. EXPERIMENTAL DESIGN AND STATISTICAL ANALYSIS

A design was employed (see below) that Campbell and Stanley (1963, p. 47) described as the Nonequivalent Control Group Design. They continued by adding that in cases where equivalence of control and experimental groups are impossible, this design is a beneficial one. In field-based research where naturally-occurring groups are found, Huck, et al. (1974, p. 302), declared that the Nonequivalent Control Design is an appropriate design.

Experimental Group	O	X	O
Control Group	O		O

O = administration of instrumentation

X = treatment

The usefulness of this quasi-experimental design is patently obvious when one examines Tables 1, 2, and 3 of Campbell and Stanley (1963, pp. 8, 40, 56). This design has few weaknesses possessing little threat to external validity and controlling for all threats to internal validity, except those from personological variables and possibly from regression effects. Regression is partially controlled for though in the use of a control group, albeit it is nonequivalent. Although it does not

control for every threat to internal and external validity, it offers the experimentor as good a design as is possible in dealing with intact groups such as workshops, conferences and the like.

The statistical analysis of the attitudinal data obtained from the semantic differential was completed following the procedures outlined in Huck, et al. (1974, pp. 54, 304-305), for use with a pretest-posttest group design and the nonequivalent control group design. Gain scores were calculated for the differences in pretest-posttest, pretest-posttest$_2$, and posttest$_1$-posttest$_2$. An independent samples t test was computed to determine if the differences in attitude scores of the control and experimental groups were significant. The Statistical Package for the Social Sciences (SPSS) computer program for the t test of independent samples was used to compute the 3 values. Nie (1975, pp. 267-274) explained the calculation procedures followed in this program include the F value to test the homogenity of variance. This test, according to Huck, et al. (1974, p. 57), indicates the appropriateness of using the regular form of the t test (which is the pooled variance estimate) or a special form (which is the separate variance estimate). The pooled variance estimate, as reported by Hays (1963, p. 209), is considered a superior test, as it gives a smaller sampling error than the separate

variance estimate. The F test produced values that 84 percent of the time were acceptable for the pooled variance estimate. In instances when this was not true the separate variance estimate was used.

The Edwards Personal Preference Schedule was also analyzed by the methods described previously, using the independent samples t test.

CHAPTER II

RELATED LITERATURE

I. USE OF ATTITUDES IN EDUCATION EVALUATION

Introduction

Attitudes are becoming increasingly popular as a measurement object for evaluation in the social sciences and education. Since the attitudes of students influence their future behaviors, Johnson (1974, p. 99) stated that affective responses may be more important than either knowledge or skills. For this reason it becomes necessary to investigate the usage and usefulness of attitudinal measurement in educational settings. This study attempts to delineate the type of results that can be expected for short summer conferences, institutes, and conferences.

Controversy in the Use of Attitudes for Program Evaluation

In spite of the acknowledged importance of attitudes and the affective domain, the usage of attitudinal measures in the evaluation of programs has not been extensive. Much of the reason for this neglect of the affective domain can be traced to a narrow understanding about the concept of evaluation and the variability in meaning that this concept has had. During its embryonic stages of development, Anderson, et al. (1975, p. 141) described program evaluation as

being equated simply with measurement. Merwin (1969, p. 6) concurred as he explained that the conception of evaluation has steadily changed through the years to include such concerns as what should be evaluated and how evaluations should be made. Evaluation, then, is no longer seen as a narrow term, simply measuring cognitive outcomes. This expansion of the term evaluation has promoted a comprehensive view of assessing a program, in which would be incorporated measures in the affective as well as the cognitive domain. Today the problem in program assessment is not whether attitudinal measures should be used, but how they should be used.

Instruments Used in Education

Since the voluminous investigations of attitudes in the early half of this century in the fields of psychology, sociology, and public opinion research, education has become deeply concerned with the study of attitudes and related constructs. With the publication of the taxonomy of educational objectives in the affective domain by Krathwohl (1964), the field of education began to develop an objective and systematic strategy to examine new areas in the attitudinal dimension. The Taxonomy, along with the Minnesota Teacher Attitude Inventory (MTAI) by Cook, Leeds and Callis (1951), the Survey of Study Habits and Attitudes by Brown and Holtzman (1967), other Likert

type scales, and the semantic differential technique by Osgood, Tannenbaum, and Suci (1957) allowed the educational researcher a greater variety of instruments with which to investigate attitudes.

Controversy in the Use of Attitudinal Measures

In the area of the evaluation of educational programs, the measurement of attitudes has raised many questions pertaining to their usefulness. Some researchers have advocated the total abandonment of attitudinal measures in favor of behavioral measures. Recently, however, the need for accountability and for evaluation has led to an increased emphasis on affective outcomes in education, as explained by Khan and Weiss (1973, pp. 759-760). Whether the feelings or attitudes of students, teachers, or parents are being assessed, affective measures are in great demand and of great importance. Because of their significant influence on learning, some educators, as mentioned by House (1974, p. 63), view attitudes and other affective constructs as the major goals of education. The importance, usefulness, and necessity of attitudinal variables, therefore, demand at least an earnest attempt to measure these concepts as well as can be done.

Some educational evaluators believe the importance of "hard data" should take precedence, urging the use of behavioral instead of attitudinal measures in assessing

programs since behavioral data is generally considered to be more impressive, as cited by E. H. Freeman (in Caro, 1973, p. 317). Two eminent scholars, Robert Stake and Samuel Messick, who have contributed much to evaluative theory would disagree. Messick (1970, pp. 183-202) contended that both cognitive and affective variables are important and should be used in an evaluation of a program. According to Stake (1970, 1972), attitudes are part of a complex of values which in turn define the success of a program. For both Stake and Messick, attitudes are seen as an integral part of a comprehensive evaluation strategy which is in sharp contrast to Freeman and perhaps others who purport a heavy reliance on behavioral measures.

Bloom (1974), in discussing the implications of the International Educational Assessment (IEA), underscored the importance of the evaluation in the affective domain when he said:

> But it is likely that reading habits, interest (and disinterest) in particular subjects, and positive as well as negative attitudes toward school and school learning may become more stable characteristics of the individual in the long run than the cognitive abilities and capabilities developed by appropriate learning experiences. If individuals are to continue learning in the major subject fields and areas of interest introduced by schools, much will depend on the affective qualities that schools have developed in them, whether they were developed intentionally or not. This is an area that warrants cooperative research throughout the world (p. 428).

Even though many researchers have repudiated

affective measures because of their past history of low reliability and validity, the use of such measures has continued to increase over the past 10 years as evidenced by a review of any educational index. The results of such affective measures are not as conclusive as might be hoped for, but continual improvements have been observed.

The majority of the significant studies in education during the past 10-year period has reflected at least a moderate interest in the affective area. The Coleman (1966) report, perhaps the most analyzed and comprehensive educational assessment to date, examines the attitudes of students, teachers, and administrators. Attitudes are seen as possibly the most important factor in predicting student achievement. The report emphasizes the importance of attitudes in this way:

> Taken alone these attitudinal variables [towards themselves (relating to self concept), toward learning, and towards their environment and their control of it] account for more of the variation in achievement than any other set of variables (all family background variables together, or all school variables together). When added to any other set of variables, they increase the accounted-for variation more than does any other set of variables (p. 319).

Such strong language has been an impetus for researchers to persevere in this oftentimes nebulous area to make the refinements necessary to promote attitudinal research.

The implication that non-cognitive variables are a significant predictor of school success, possibly the

best predictor, has been supported by an ever-increasing mass of data. One of the specified attitudinal areas mentioned by Coleman, attitudes towards one's self or self concept, has received much attention. Indeed, Purkey (1970, p. v-vi) explained the development of a theory of self concept; although it is not an all-inclusive theory, it is now backed by a tremendous volume of data. Throughout the book correlates of self concept and achievement are shown; Purkey (1970, p. 24) cited some studies which conclude that measures of self concept are better predictors of school success than I.Q.! Several years before Purkey's (1970) work, Stern (1963), in reporting about non-cognitive variables, stated that teachers' attitudes are significant for student learning. His evidence also pointed to the correlation between attitudes and achievement. Continued improvements in techniques and instrumentation will yield more and better attitudinal studies which should give greater substantiation to the relationship between attitudes and achievement, and increase the reputation of attitudinal devices.

But even if many improvements have been made with the instrumentation and techniques in the affective domain, to properly evaluate the effects of a conference or workshop requires a multitude of criterion measures over a given time span. In short, a comprehensive assessment of a program is needed if decisions are to be useful and

predictable. To insure comprehensiveness it becomes necessary to record data in as many different ways and angles as possible. One of the most important ways to locate possible outcomes in educational programs is to measure secondary and unintended outcomes. If a program shows no cognitive gains, is that program a failure? What happens when the intended outcome is not the real outcome, or what if there is more than one outcome? Scriven (1967, 1972, and 1973) pointed out that often the unintended outcomes are important; sometimes the most important outcomes of a program. The vital importance of unintended outcomes is also supported by Messick (1970), Chauncey (1971), and Anderson (1975, p. 245). They all contend that many different measures are needed to assess all possible program effects to insure that the true effects and not just the apparent effects of a program are measures.

II. CONCEPTS OF ATTITUDE

Diversity of Thought

Since the early 1900's, the concept of attitudes has been generating a tremendous volume of research as mentioned by Wagner (1969, p. v). While the development of the study of attitudes has not been consistent, as explained by Himmelfarb and Eagly (1974, p. 595), the knowledge gained has been immense and complex. The same

authors (1974, p. 2) reported that attitudinal studies appear to have developed different emphases and methods through the years. The centrality and the importance of attitudes in so many areas of human concern have led investigators in psychology, sociology, political science, communications, education, and other disciplines to delve into the interrelationships of attitudes and their relationship with other constructs.

With the expenditure of effort in so many diverse arenas of knowledge, it is not surprising to find a multitude of attitudinal theories. Wrightsman (1972, p. 292) stated that despite the tremendous amount of information available about the many theories, much needs to be done to understand the dynamics of attitudinal change. It appears that each theory can explain a certain type of attitude change rather than a broad range of change that would allow greater understanding and predictability. With the absence of a generally accepted theory, Halloran (1967, pp. 15, 110) and Zimbardo and Ebbesen (1969, p. v) mentioned that confusion and controversy will be present in attitudinal research.

Inasmuch as there is not a single attitudinal theory that a clear majority of the theorists support, the major theoretical positions which have implications for this research, will be examined briefly.

Cognitive Consistency Theory

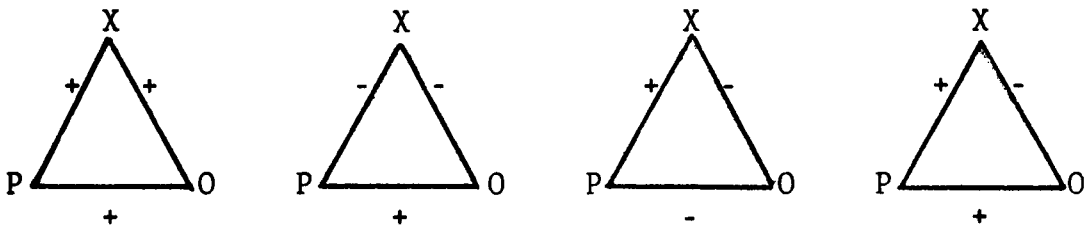
This theory is composed of many related sub-theories, but, according to Zajonc (1960, p. 280), they all assume that the process by which attitudes are changed is rational and that the driving force behind this change is the belief that people are motivated to be and to appear consistent. Viewed in another way, Maccoby and Maccoby (1961) expressed the similarities in the cognitive theorists in this manner:

> Most of these theoretical approaches to attitude change have at least one major characteristic in common. They involve a kind of balance-of-forces . . . in which the overloading of one type . . . gives rise to changes designed to restore balance. In short all employ homeostasis in some form or other (p. 539).

Stated simply, Cognitive Consistency theories, according to Himmelfarb and Eagley (1974, p. 9), "are drive-reduction models of behavior in which the motivating force for change is inconsistency, a noxious state." Coates (1970, p. 52) mentioned that the major principles of the consistency theorists are contained in the balance approach of Abelson and Rosenberg, the dissonance approach of Festinger and the congruity approach of Osgood and Tannenbaum.

Balance theory. Wagner (1969, p. 12) stated that the notion of consistency began with Heider's (1946, pp. 107-112) statement on attitudes and cognitive organization. In describing Heider's views a series of simple

graphs (Wagner, 1969, p. 12; Wrightsman, 1972, p. 304; Zajonc, 1960, p. 284) similar to the following are usually presented (Figure 1):



(a) (b) (c) (d)

Figure 1. A graphic representation of Heider's Balance Theory.

In Figure 1 the first three graphs (a, b, and c) show a balanced or consistent state of being where a relationship between two people P and O, and one object, X, is considered. In both 2a and 2b both persons in the dyad are in agreement about an object and also in both instances both P and O are positive toward each other. The graph in 2c shows that person P feels negatively toward person O, so that the relationship is consistent when person P holds different views about object X than person O. In graph 2d, however, even though person P and O feel positively toward each other, an unbalanced state is found because person P has positive feelings toward X but person O does not. Thus either P or O would have a tendency to change one or more of the relationships

involved in order to put system, 2d, back in balance. Such relationships with only three entities are easily understood. Unfortunately, in real life situations, attitudes usually involve more than three entities. Efforts have been made to expand Heider's theory and even to alter it in order to make it more predictive and inclusive (Fishbein, 1967a; Abelson, 1960; and Rosenberg and Abelson, 1958).

Cognitive dissonance theory. Wagner (1969, p. 17) stated that the consistency theory of Leon Festinger's is probably the best known and the theory that has stimulated the greatest amount of research. Essentially Festinger's (1957) theory is rather simple, employing a minimum of elements.

Essentially cognitive consistency theory states that new ideas and opinions that are consistent with old opinions and ideas are received by the individual without any cognitive or mental disruptions. New ideas or opinions, however, that are contrary to the opinions and attitudes of an individual create a dissonance or disequilibrium that will be resolved in order to reduce the pressure of the dissonance. Changes in attitudes will result that affect the least amount of cognitive reorganization or internal dissonance.

Congruity theory. The major theoretical bases for

this study on attitudes is founded on the congruity principles, although all cognitive consistency theories were relied on.

Like the balance theory of Heider and the dissonance theory of Festinger, the congruity theory of Osgood and Tannenbaum (1955) has limited applicability. However, where the former two theories try to describe the manner in which attitudes are changed along with an approximation of the direction of the change, Osgood and Tannenbaum have attempted to predict the exact amount of attitude change, as described by Wagner (1969, p. 16), in addition to the direction of the change. In fact, Zajonc (1960, p. 289) asserted that the congruity principle has considerable superiority over earlier theories, principally the balance theory, because of its preciseness in predicting the direction of the attitudinal change. Zajonc continued, with this statement:

> Moreover, while it is not clear from Heider's statement of balance in just what direction changes will occur when unbalanced state exists, such predictions can be made on the basis of the congruity principle (1960, p. 290).

Osgood's congruity theory offers a basis for determining uniformity between attitudes presently held and new opinions or attitudes presented. If given in a pre-post method, the degree of influence exerted can be calculated quantitatively and the effects assessed.

In this study the strength of the change in attitudes as a result of a conference will be determined and also the stability of attitudes nine months after the conference will be investigated.

III. ATTITUDE MEASUREMENT

Introduction

The literature on attitudinal measurement is replete with controversies and discrepancies, yet a relatively stable set of guidelines has been refined. In this section such problems as the difficulty of measuring attitudes, the effect of social desirability and the ability to predict behavior from attitudes will be examined.

Self Reports

One of the great problems in attitudinal research, as in the evaluation of educational programs, is the extensive use of self-reporting or inventory type instruments. Khan and Weiss (1973, p. 764) stated that the self-reporting technique is the most frequently used procedure for attitudinal measurement, yet they (p. 766), Edwards (1957, p. 53), and others stated that it is susceptible to faking, response set, and social desirability errors. Edwards (1957) and others, however, have developed procedures for the construction of paper and pencil, self-reporting type instruments that are free of most of the

critical components of poorly constructed inventories.

Social Desirability

Another major problem in the measurement of attitudes involves the tendency of subjects to react to self-reporting measures in a way so as to be socially desirable. In reply to this specific variable Allen Edwards (1957) described how researchers might avoid this pitfall. Before listing the three ways Edward's proposed to control for social desirability, his own argumentun ad hominem is given, not suggesting certainty, but offering a plausible explanation. He said:

> [I]t is possible that the traits or items which are judged socially desirable are those that are fairly common or dominant among the members of a group (1957, pp. 85-86).

In other words if socially desirable responses are given, they may be measuring the overt group norms. In this case, two types of responses are possible on self-reporting instruments: an individual's true feelings or that of the group (1957, p. 91). It appears that Edwards is purporting one is just as good an indicator as the other. Regardless of the validity of this argument, he gave three suggestions which if followed would improve a personality (or other self-reporting instruments) inventory (paraphrased):

1. Develop subtle statements in which subjects will have difficulty determining social desirability.

2. Include social desirability scales in the instrument and then adjust accordingly.
3. Use a forced choice rather than free response format, because it will be more difficult for the respondee to determine social desirability (1957, pp. 59-60).

In addition to these ideas, Oppenheim (1966, pp. 62-63) suggested, repeating orally or in writing, that accuracy is the primary consideration of the study and that negative responses are certainly as important as positive ones. When a person perceives that negative responses are acceptable, it is more likely that negative responses will be given. Hence, the probability of true responses is strengthened. Such instructions will also relieve the anxiety that might cause a person to try to hide inadequacies.

In some instances where chances of personal reward are involved, self-reporting can result in biased answers. In determining occupational selection of individuals, Super and Bohn (1970, p. 42) declared that people are strongly motivated to distort self-reporting interest type measures in order to appear that one's interests are similar to a certain occupation. Therefore there may be a definite reward if one responds in a particular manner. For this reason, self-reporting measures are not suggested for such conditions, and care must be taken by the researcher to insure that inventory measures are not used in situations where self-aggrandizement is possible.

Anxiety of Testing Situation

Investigators who need to identify respondees, in order to make several comparisons, are faced with a dilemma that might be affected by poor self concept or subject inadequacies. This difficulty centers around anxiety of a testing situation and the anonymity of the tests. Anxiety is certainly involved in anonymity, but it is of a more general nature. Fox (1969) aptly explained the relationship between anxiety and anonymity while showing further insight into the incremental complexity of the situation:

> The basic techniques to minimize anxiety in measurement all involve persuading the respondent that he is not being studied as an individual, but rather as a representative of a role or as a member of a group. The most frequent way in which researchers seek to communicate this is to permit the respondent to remain anonymous. But this effort exemplifies a particularly troublesome aspect of handling respondent anxiety: Efforts (sic) to anticipate and diminish anxiety may very well have an interlocking and opposite effect on the respondent's motivation (to respond sincerely) (p. 581).

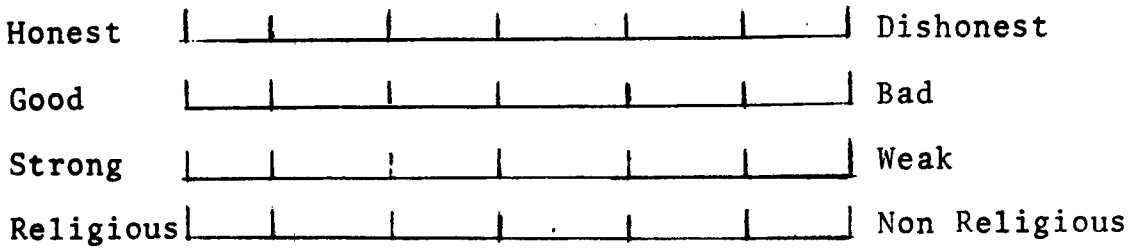
Essentially the ultimate question, as mentioned by Rosen (1960), is whether the subjects' perceive signing their names as a threatening situation. Eight out of ten studies are cited by Rosen which support the contention that when there are no threatening circumstances, subjects who are asked to sign their names to an attitudinal instrument show no serious distortion. Corey's (1937) study is a perfect example. As long as the respondents

felt that the data would not in any way harm them, they answered honestly. He included a foil to trap respondees with an inclination toward distortion. Very few showed distortion of any kind.

Response Set

Response set is another type of serious error encountered in self-reporting instruments. In a forced-choice testing device the position on the left or right side of a page of words such as good, agree, or yes versus bad, disagree, or no can cause a response set, e.g. Whether Lincoln was religious or not would be influenced by the previous three bipolar adjective scales since honest, good, and strong are characteristics generally ascribed to

ABRAHAM LINCOLN



him. Therefore a person might be tempted to mark the religious side of the scale if nothing of Lincoln's religious nature were known.

Since a response set is a distinct possibility in any type of forced instrument, Oppenheim (1966, p. 85)

suggested mixing positive and negative response words on the right and left sides of a page. In the example of Abraham Lincoln above, good and religious might appear on the right side of the page instead of the left side. Specifically relating to the semantic differential, Osgood, et al., (1957, p. 82), Heise (1970, p. 240), and Maguire (1973, p. 299) all recommended alternating the polarity direction of the adjective scales to prevent the formation of this type of response set. Even though many more researchers could be cited who would support the recommendation of alternating the polarity of direction some researchers disagree. Nunnally (1967, pp. 542-543) asserted that by switching polarity directions, even though in a random fashion, the chances of error in measurement are increased because of confusion on the part of the respondee. He stated that a response set may be prevented, but at the cost of another type of error. For the sake of argumentation Nunnally has a point, but he offered no empirical proof to back up his statements.

Predictors of Behavior

Another problem in affective measurement, maybe the most hotly debated, is whether self-reported attitude measures are adequate predictors of behavior. Since La Piere's classic study in 1934, a multitude of researchers have offered evidence supporting both sides of the issue.

The question is not one of attitudes affecting behavior; Lambert and Lambert (1964, p. 53) stated very directly: "Attitudes play an essential role in determining our behavior. . . ." But do the measures of attitudes that are used by researchers predict behavior?

Bloom (1964, p. 133) admitted that attitudes are indeed difficult to measure, more difficult than the physical characteristics to which he gave excellent treatment. But in quite adamant terms another researcher, Halloran (1967) stated:

> [The concept of attitude] represents our major equipment for dealing with reality . . . it is a step in the right direction of reducing the complex to the simple, it helps to make sense and give meaning to individual behaviour and in all probability it is the best basis for prediction yet devised (emphasis added) (p. 28).

Therefore, Halloran believes that attitudinal measures do comprise the most reliable criterion researchers have available for predicting behavior.

Deutscher (1969) dis/agreed vehemently, stressing heavily La Piere's (1934) research with lodgings of racially mixed couples. Many investigators have corroborated La Piere's findings; however, an equal number of investigators have given reasons why such investigators may have drawn false conclusions from their studies. Dollard (1949) has given ample reasoning discussing the conditions under which opinions may not be predictive of behavior. A

summary of Dollard's conditions for nonpredictability of attitude measures are:

1. In cases where threats or rewards are possible influencers of behavior.
2. In cases where the experiment is concluded after a period of time in which some people behave differently than they would have if tested immediately after their verbal opinions were elicited; excitability is a factor.
3. In cases where the testing situation is different than anticipated by the testee.
4. In cases where people inadequately express their true feelings verbally.
5. In cases where an intervening experience alters the testee response in the subsequent testing situation.
6. In cases where an unstable personality is involved.
7. In cases where behaviors have not been rewarded for a given verbal response (pp. 623-632).

Ajzen and Fishbein (1969, 1970, 1972, 1973), Fishbein (1967a, 1973), Fishbein and Ajzen (1974), and Himmelstrand (1960) offered evidence, suggesting situational variables, which may lead to greater prediction in correlating attitudes with behavior. All their research found that a single criterion measure for behavior is poorly predicted from attitudes. They stressed the need for a multiple criterion for the prediction of behavior. Ajzen and Fishbein (1974, p. 61) offered a statement from Thurstone (1931) which adds insight into the multiple behavior of individuals. Thurstone said that even when two persons hold the same attitude towards an object that "their overt actions (may) take quite different forms." The implications are that attitudes and behavior are related in a very complex way and that trying to explain either

from single instruments or by single observational techniques (single criterion measures) will end in failure.

Fishbein (1967b, p. 491) stated that three variables must be considered to increase behavioral predictability: (1) attitudinal intentions about doing the behavior(s) in question, (2) attitudes towards the object itself, and (3) situational variables in which the behavior is to be elicited. These situational variables included the environmental factors which the predicted behavior is to take place and the people with whom the behavior is to be done. For example, team teaching might be a relatively neutral concept with negative behavioral implications, but if the Ss were in a new building and were teamed with the teachers the Ss most admired, the probability for the Ss to want to team might be increased tremendously.

The conflict between attitudes and behavior cannot be resolved completely by any one theory, as mentioned by Himmelfarb and Eagley (1974, p. 609), yet they feel that the implications from Fishbein and Ajzen's research can lead to important results which may prove helpful in reconciling this extremely important construct.

IV. CONFERENCES AND WORKSHOPS STRESSING ATTITUDINAL MEASUREMENT

Introduction

Workshops, institutes and in-service activities

all serve to develop increased awareness (of new ideas), competencies, and professionalism in teachers, supervisors, and administrators. In a world where knowledge doubles every 30 years, Alvin Tofler (1970) said that jobs and knowledge become obsolete at an ever-quickening pace necessitating coping problems. A possible answer to this shock of coping with new stimuli is explained by John Gardner (1966) by suggesting that people can remain viable by self-renewal. For this reason, the continual improvement of educational personnel is a critically important activity in our modern society.

Richey (1969, p. 62) cited evidence that next to actual courses, workshops were the most often used type of self-renewal activities for school personnel. Summer workshops and conferences are probably the most important since teachers have a chance to devote full-time effort to them without time restrictions imposed by teaching the students. In response to the value of summer workshops, Miles (1972, p. 21) reported teacher participants responding extremely positively. In a USOE sponsored workshop for urban superintendents (Urban Education, pp. 291-292), the participants responded similarly by saying that on their jobs it is difficult to step back and analyze their problems, but in a workshop setting with the stimulation of other educators from different places with similar problems, brainstorming

problem solutions was possible and enjoyable.

Even though this type of feedback is gratifying, it is not sufficient information to make improvements, nor to assess the "real" worth of the program. In workshops or conferences like the above, written assessments are often done; Leary and Wolf (1972, p. 23) reported an evaluation at the end of a conference something like the following:

> Before you leave this conference setting, kindly fill out the short questionnaire available on chairs at the rear of the room. The questionnaire will give us an opportunity to view your perceptions of the conference against our own. We hope to use your comments for two purposes: first, to improve our future performance; and second, to ascertain what you are taking home which relates to the meeting. Please take your time.

Even though the intended purposes of the above evaluation are laudable, the possibility of getting valid data with such instructions is slim. Efforts at the evaluation of conferences and the like have typically been of this superficial nature. Leary and Wolf went on to say that this incomplete method of evaluation has been characteristic of conferences, workshops, and institutes. Stufflebeam (1967) reported similarly poor evaluations of Title III projects. Recently Evans (1974) asserted that progress has been made although there is still a tremendous need for improvement.

An interesting and important phenomena that Leary and Wolf (1972, p. 23) reported was that participants'

evaluations are generally supportive. The participants expressed having had a meaningful experience in which they learned a lot, and that the effects will be noticed in their work. But a problem of greater importance than the participants' feeling is what and how much actually were learned, and how much were behaviors changed? This is a crucial problem. Are attitudinal instruments good predictors of subsequent behavior? If the findings of Fishbein and Ajzen are true, attitudes towards an object, intentions to behave, and situational variables must be considered for accurate predictions. But even now these measures are still in their infancy. The semantic differential technique has recently received acclaim, but some researchers still hold all attitude measures in suspect.

If attitudinal evaluations are suspect, why are behavioral evaluations not used more? Leary and Wolf (1972, p. 23) said that few evaluations ever try to find out exactly what participants take back to their jobs.

Influence of Federal Government

During the past 10 years the awareness for better evaluations has grown tremendously. The National Advisory Council on Education Professions Development (1973) stated that evaluation is one of the major issues in education. Indeed, they (p. 3) continued by showing the federal

government's interest in evaluation by reporting an increase in non-defense spending on evaluation from $19 million in 1969 to $110 million just three years later. With this rapidly increasing emphasis on evaluation, it seems that more effort should be spent on the evaluation of summer short courses. Unfortunately, it is precisely the fact that any program, including short institutes or workshops, is expensive and time consuming to evaluate that little money has been invested in the evaluation of workshops, conferences, and the like.

Since it is the federal government who has spearheaded the drive and the monetary input into doing evaluations, relatively small endeavors like short courses have not merited enough attention and consideration while larger and more global efforts like Title III projects have been scrutinized and demands of accountability thrust on them. Therefore along with the demands of more educational accountability to justify increased spending for large projects came the same demands for smaller projects.

Hindrances to Proper Evaluation

In addition to the money, staff, and time that is needed to accomplish comprehensive evaluations, another variable hinders the evaluation of short courses. Since workshops are of a very short duration, usually from one-to-two days to two weeks, using participants' time in

evaluation is often seen as wasteful and even counter-productive, in that the participants have such a short time to assimilate the content of the workshop. Given that few people like to go through the troubles to be evaluated unless they see the payoff involved, the more complete the evaluation, the more time is consumed giving participants rationales. It is very complex to minimize the ill effects of this never-ending cycle. However, with the increasing emphasis on evaluation and the payoff that is possible, the evaluation of even short workshops and conferences is gaining in support.

The need to evaluate all institutional activities has not been solely thrust on education from the federal or state governments. Many scholars have seen the ameliorative effects of evaluation and have offered rational support for educational developers, supervisors, and others to implement evaluative strategies for the purpose of self improvement. Lee Cronbach (1963) was perhaps one of the prime evaluative theorists who influenced the need for the improvement of all educational endeavors through evaluation. After his classic paper, "Course Improvement Through Evaluation," was published other evaluative theorists have continued to stress that evaluation is a process whereby a systematic, active plan can point out weaknesses and strengths so that decisions for improvements are more easily made and for a more justified reason.

One of the few substantial efforts known to this author, at evaluating short-term workshops is the study by Leary and Wolf (1972) mentioned earlier. The results of their work are significant in that they included follow-up activities after the workshop, which very few other workshop evaluations have incorporated.

Leary and Wolf's summer workshops and institutes involved over 2400 participants during 1967 and 1968 in I/D/E/A and PACE (Projects to Advance Creativity in Education) workshops all across the country. The major goal of the programs was to improve skills and knowledge of educators about individualized education. To assess the effectiveness of their workshops, the researchers predicted 10 percent of their participants could predict the source of their innovation as being part of the workshops and most important that 5 percent would actually adopt innovations found within their workshop. Reported findings showed much greater awareness and adoption than anticipated. Of the 10 percent predicted to show an awareness of the program, 29 percent actually reported an awareness of the innovation six months later. Also 11 percent instead of 5 percent actually tried some of the innovations. A possibly surprising event, however, was that there was no attitudinal change in the participants towards the innovations after two weeks of the workshop nor after a six-month interlude.

V. LONGITUDINAL MEASUREMENT OF ATTITUDES

Benjamin Bloom's work (1964) on the Stability and Change in Human Characteristics is one of the few books of its kind on longitudinal studies dealing with human affective variables as well as cognitive and physical (biological) variables. In this text Bloom has gathered explicit and comprehensive data of the physical characteristics, but he stated (p. 133) that the data for the personality-attitudinal area are difficult to measure. In particular, Bloom searched for stable characteristics (p. 4), those that are pervasive and durable. His rationale was that stable characteristics were based on interactional processes, one's way of relating to phenomena, life styles, and the like. Fads and mannerisms would be unstable (unless symptomatic of underlying needs or processes). Turning to attitudes, Bloom (1964, p. 173) believed that basic values remained stable, whereas particular beliefs, attitudes, and opinions may change over time. For example, one's attitude about war should be longer lasting than one's attitude or opinion about the Second World War or the Vietnam War.

The data Bloom gathered on personality variables restricted definite generalizations, but throughout he (pp. 132-133) inferred a belief that personality development takes place most rapidly in early childhood with

definite changes taking place during adolescence and then only relatively minor changes happening in adulthood. Foss (1969, p. 15) writing on moral development stated that this relationship in the stability of the attitudinal-value structure has not as yet been determined, but there is strong feeling that it is true.

Only a few major longitudinal attitudinal studies have been done through the years, and most of them include college students as their initial population. The attitudes measured usually deal with conservative versus liberal values and their persistence and change.

Since there has been a paucity of educational longitudinal studies specifically dealing with attitudes and education, other areas of the literature were used. One of the premier longitudinal studies was done by Nelson (1954) from 1936 to 1950. His research corroborates Bloom's and Foss' beliefs. One's attitudes, Nelson found, tend to persist through post college years, being relatively stable. Generally his population, about 900, became somewhat more liberal from 1936 to 1950, but he defends this as only a minor change. Hoge (1969, 1971), Hoge and Bender (1974), Kelly (1955), and Newcomb, et al., (1967) reported that significant attitudinal changes do take place in a person over time. Comparing Hoge and Bender's data with Nelson's (1954) definite similarities

are found. Both reported that after at least 14 years the attitudes of alumni have changed from their earlier college years. An investigation of the data shows that alumni in both studies are more like the contemporary college students (at the time of testing) than their old attitudes.

In summary Bloom (1964, p. vii) stated that his complete book could be summarized in three statements as follows:

1. The relation between parallel measurements over time is a function of the levels of development represented at different times.
2. Change measurements are unrelated to initial measurements but they are highly related to the relevant environmental conditions in which the individuals have lived during the change period.
3. Variations in the environment have greatest quantitative effect on a characteristic at its most rapid period of change and least effect on the characteristic during the least rapid period of change.

Hoge and Bender's (1974) research gave support to the assertion that environmental conditions affect individuals more so than the tests given to measure characteristics. This assertion can be attributed to a model of change that Hoge and Bender (p. 584) mentioned--the current experiences model. Essentially the current experiences model stresses the influence of events in society. The events and experiences that cause and influenced changes in values of the "campus radicals" of the late 1960's caused and influenced businessmen and

other older adults to also have a change in values. Charles Reich (1972) in his Greening of America recounted just this sort of change in people of all ages. Although it is not the same for all people, the fact that environmental variables (such as religious causes, liberal ideas, political behaviors) influence the behavior of people is of utmost importance.

VI. SUMMARY

The significance of using attitudinal devices in the evaluation of educational programs, especially short programs, pertains to the permanence of the measures. It is generally assumed that a positive change in attitudinal scores at the conclusion of a conference indicates that there will be a change in future behavior towards the promoted value system of the program rather than a short-term "Halo effect" reaction to the conference.

The recency effect offers a rationale for a short-term "Halo effect" reaction as explained by Hovland (in Himmelfarb and Eagly, 1974, p. 263). This suggests a positive reaction to the conference simply because it is most recent in a person's experience. Since in a post conference measurement both a "Halo," recency reaction and a permanent change in attitude is possible, the decision concerning the timing of the measurement for possible attitudes change is a precarious one.

According to the congruity theory of Osgood, a discrepancy in attitudes towards an object will result in the readjustment of a consolidated attitude in the direction of the stronger-held feeling. Therefore, responding in the wake of a conference to a questionnaire on the concept of the open classroom might influence a participant towards the positive direction from the pretest, but after the effect of recency has worn off, the attitudes may show a reversal to their earlier position. This is consistent with the research about the recency effect by Miller and Campbell (in Himmelfarb and Eagly, 1974, p. 285). There is no guarantee, however, that the strongest-felt attitude will be in the direction of the pretest score. If the treatment has had a significant effect on the attitudinal structure of an individual then the posttest attitude should remain stable over time. In this case there should be no recency effect.

Given the critical nature of attitudinal change, the usefulness of affective data for program evaluation can be altered significantly depending on the timing of the test administration. Since short programs are of such a transitory nature, the chances of an end of the conference change that is not permanent is more likely than a program where the treatment lasts for weeks, months, or years. Therefore the efficaciousness of many short testings over the treatment and after for short

programs seems more necessary than for longer programs where the effects of the treatment are greater and where measurement is more likely to be substantiated on one long testing. The problems inherent in longitudinal designs are obvious indeed and no discussion of them is needed here. A major reason for using attitudinal data is that it is of a more enduring nature than cognitive data as explained by Bloom (1974, p. 428). With the difficulties in attitudinal measurement, knowing that affective data is a true indicator of subjects' attitudes is of great importance. The evaluator is caught in a quandary, desiring the maximal efficiency in a data source, but realizing that which is most economical is also most variable.

One of the affective instruments that offers much data per unit of time and response is the semantic differential. Khan and Weiss (1973, p. 767) and Stake and Denny (1969, p. 379) suggested that the semantic differential has a promising potential for attitudinal research. Even though the semantic differential is economical in terms of data produced and offers much information in the affective domain, its use is hardly the panacea for evaluators.

An examination of the literature in the field of attitudinal evaluation of short educational programs revealed scant information for evaluators and program

planners. The researcher will not obtain many references which can be readily found in most libraries. The ERIC system offers some references, but those directly useful are limited to only a few cases. Dissertation Abstracts also lists a number of studies that could be helpful to the researcher.

In looking for suggestions as to the categories of attitudes that should be assessed, in how this data should be collected, or by what means it should be collected, very few recommendations are made. Since the fields of evaluation and accountability have been developing rapidly in the past few years, more mention has been made to what should be assessed and how this should be done. Unfortunately, little has been given to aid in assessment of short courses which are hard pressed for time to complete even necessary content. If one specifically wants to investigate the part attitudes play in a comprehensive evaluation then only the scantest references are found.

This study was designed to investigate the role of attitudes in a comprehensive programatic assessment. Specifically, the topic of this study will be the determination of stability over time of attitudes in evaluating an educational program at the end of a summer conference and nine months later.

CHAPTER III

ANALYSIS OF DATA

I. INTRODUCTION

A purpose of this study was to determine the effectiveness of short educational programs in influencing attitudes towards individualized instruction. Many hundreds of millions of dollars have gone into the development of staff improvement during the last two decades in the United States. Has this money been effectively spent? Similarly hundreds of millions of dollars have gone into the development of a multitude of programs and curriculum projects with little payoff in terms of the cognitive growth of students (Haggerty, 1973, pp. 4-10). Some researchers have suggested that investigators have only examined a limited area of results, i.e., immediate short-term effects in memory or attitudes. Few studies have investigated even long-term effects in memory or attitudes, much less other areas such as thinking patterns, working and learning habits, value systems, interpersonal relationships, and other unobtrusive data. The researcher in this study examined the immediate and longitudinal effects on attitudes of a short conference on individualized instruction.

Data Gathering Techniques

The attitudinal data presented in this chapter were gathered by the semantic differential technique of Osgood, Suci, and Tannebaun (1957). Characteristics of the population sample were gathered in a separate instrument developed by the author (see Appendix B). Personality attributes were assessed by the Edwards Personal Preference Schedule which was collected on a 10 percent random sample from the control and experimental groups.

Characteristics of the Samples

The similarities of the experimental and control groups in personal and professional characteristics were examined in the area of education, communication sources (i.e., reading, listening, watching), travel, professional involvement, age, and sex. Both groups were composed mainly of persons with a B.S. degree, although the control group had a much greater percentage (70.3 percent vs. 42.5 percent, see Table I, page 6) of educators with B.S. degrees. This variance could be attributed to the fact that there was a greater percentage of younger teachers in the control group. Both groups were extremely active in different modes of professional and social communicative information channels. In both groups more than 55 percent had been enrolled in a college course

within a year of the conference; more than 79 percent regularly read two or more educational journals a month (see Appendix C for a breakdown by type of journal); more than 73 percent regularly read two or more general magazines a month; more than 65 percent read two or more newspapers regularly; and more than 86 percent listened to both radio and TV news. This data shows that the educators in this study are extremely immersed in communicative information channels of all kinds. Indeed, when an examination is made of these participants' entertainment time, a description emerges which is more professional in scope than one might expect. Radio listening is primarily for music and news (including local or state educational news), but television time, even though largely spent for family entertainment, is often (12 percent) spent viewing the educational (PBS) channel or other purely educational shows. In addition to their regular reading and listening habits, the participants acquired new information through educational travel and attendance at conferences and workshops from local to national in scope. Over 70 percent had attended at least one other conference within the previous two years.

The importance of knowing the modes in which people receive new information (beliefs) on the development of attitude formation and change is great. Hovland, et al. (1953, p. 155), explained the influence that modes of

communication (modes such as college courses, educational conferences, television viewing) exert upon the attitudes of people. Therefore by enrolling in college courses or participating in educational conferences and assimilating the information in these conferences, a person's attitudes can be influenced in the direction of the content of such programs. In addition to active participation in programs, the passive participation of radio and television programming also affects a person's beliefs and attitudes as explained by Cline (1974). In summary, all sources of personal experience influence one's beliefs, attitudes, and behaviors. The fact that educators in this study exhibited a tremendous amount of printed, visual, and oral experience points to the probability that they are perhaps more likely than most to be influenced by new information since they were exposed to so many communication sources.

Presentation and Treatment of the Data

The analysis of the data from the semantic differential instrument of the posttest2 (nine months after the conference) was made from an 88.3 percent return from the experimental group and a 81.0 percent return from the control group.

Analysis of Concepts Pertaining to Instructional Strategies

In Tables VI through XXIII the semantic differentials are analyzed by computing the gain scores from one testing to another for each concept and each polar adjective. Therefore, each polar adjective has a gain score for the $posttest_1$ minus the pretest, $posttest_2$ minus the pretest, and $posttest_2$ minus $posttest_1$.

For the eight concepts on the semantic differential instrument that dealt specifically with conference topics, seven showed significant difference to varying degrees. The first concept, Independent Study (see Table VI), revealed positive significant differences at the 0.05 level in mean gain scores over the control group on three scales (e.g., Practical-Theoretical and Meaningful-Meaningless) at the conclusion of the conference. Nine months later, the difference between pretest scores and $posttest_2$ scores showed significant differences on five scales, three at the 0.05 and two at the 0.01 level (e.g., Practical-Theoretical and Meaningful-Meaningless). There were no differences between the experimental and control groups from $posttest_1$ to $posttest_2$. For the seven remaining conference topics each will be examined briefly, in a similar manner, elucidating those scales which reach significance at the 0.01 level.

TABLE VI

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT INDEPENDENT STUDY

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.3514	1.033	0.5278	1.306	0.76
$Post_2$-Pre	0.1333	1.358	0.3359	1.353	0.74
$Post_2$-$Post_1$	-0.1667	1.341	-0.1667	1.373	0.00
Eager-Reluctant					
$Post_1$-Pre	0.1892	1.288	0.2708	1.552	0.29
$Post_2$-Pre	-0.0667	1.964	0.1641	1.425	0.61
$Post_2$-$Post_1$	-0.3000	1.745	-0.1508	1.431	0.49
Practical-Theoretical					
$Post_1$-Pre	-0.1892	2.053	0.5245	1.457	1.96*
$Post_2$-Pre	-0.9000	1.936	0.1797	2.048	2.62**
$Post_2$-$Post_1$	-0.4667	1.634	0.3360	1.805	0.36
Valuable-Worthless					
$Post_1$-Pre	-0.2973	1.697	0.2222	1.161	1.76
$Post_2$-Pre	-0.4667	1.306	0.0234	1.187	2.00*
$Post_2$-$Post_1$	-0.1000	1.768	-0.1190	1.204	-0.06
Domineering-Lax					
$Post_1$-Pre	-0.7838	1.397	-0.1538	1.440	2.39*
$Post_2$-Pre	-0.4333	1.974	-0.2578	1.608	0.53
$Post_2$-$Post_1$	0.3667	1.377	-0.1825	1.422	-1.91
Meaningful-Meaningless					
$Post_1$-Pre	-0.4595	1.464	0.1189	1.387	2.24*
$Post_2$-Pre	-0.5667	1.278	0.1094	1.110	2.94**
$Post_2$-$Post_1$	0.0667	1.484	-0.0159	1.110	-0.29
Active-Passive					
$Post_1$-Pre	-0.2703	1.484	0.2324	1.481	1.84
$Post_2$-Pre	-0.4000	1.868	0.0156	1.516	1.29
$Post_2$-$Post_1$	-0.0333	1.921	-0.1774	1.557	-0.43
Useful-Useless					
$Post_1$-Pre	-0.1622	1.280	0.1736	1.248	1.45
$Post_2$-Pre	-0.5333	1.479	0.0078	1.331	1.96*
$Post_2$-$Post_1$	-0.3667	1.426	-0.1984	1.153	0.69
Good-Bad					
$Post_1$-Pre	-0.1892	1.681	0.3007	1.222	1.66
$Post_2$-Pre	-0.4667	1.432	0.0866	1.228	2.15*
$Post_2$-$Post_1$	-0.1667	1.621	-0.1667	0.978	0.00
Pleasant-Unpleasant					
$Post_1$-Pre	-0.1081	1.524	0.3357	1.477	1.62
$Post_2$-Pre	-0.4000	1.404	0.0078	1.395	1.44
$Post_2$-$Post_1$	-0.1667	1.510	-0.2540	1.271	-0.33
Strong-Weak					
$Post_1$-Pre	0.1081	1.149	0.3681	1.603	1.12
$Post_2$-Pre	-0.3667	1.474	0.1250	1.375	1.74
$Post_2$-$Post_1$	-0.3667	1.629	-0.1984	1.327	0.60
Varied-Monotonous					
$Post_1$-Pre	-0.2973	1.309	0.1181	1.508	1.53
$Post_2$-Pre	-0.5667	1.223	0.0391	1.416	1.88
$Post_2$-$Post_1$	-0.2333	1.305	0.2063	1.520	0.09

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, and $Post_2$ = $Posttest_2$.

* $p = < .05$.

** $p = < .01$.

TABLE VII

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT PERSONALIZED TEACHING

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.1071	0.965	-0.2222	1.124	1.76
$Post_2$-Pre	0.0240	1.066	-0.4483	1.617	1.50
$Post_2$-$Post_1$	-0.1600	0.945	0.0000	1.894	-0.45
Eager-Reluctant					
$Post_1$-Pre	0.1000	1.310	-0.1892	1.613	1.14
$Post_2$-Pre	-0.0240	1.215	-0.0333	1.542	0.04
$Post_2$-$Post_1$	-0.1680	1.401	0.2667	1.893	-1.42
Practical-Theoretical					
$Post_1$-Pre	0.3741	1.643	-0.4324	1.425	2.78**
$Post_2$-Pre	0.3306	1.719	-0.7000	1.466	3.03**
$Post_2$-$Post_1$	-0.1120	1.642	-0.1313	1.925	0.06
Valuable-Worthless					
$Post_1$-Pre	0.1214	1.014	0.0541	0.880	0.37
$Post_2$-Pre	0.0080	0.988	-0.5000	1.225	2.41*
$Post_2$-$Post_1$	-0.1280	0.984	-0.4667	1.224	1.61
Domineering-Lax					
$Post_1$-Pre	-0.1223	1.894	0.0541	1.413	-0.62
$Post_2$-Pre	-0.2080	1.404	-0.1000	1.470	-0.37
$Post_2$-$Post_1$	0.0484	1.556	-0.1000	0.923	0.68
Meaningful-Meaningless					
$Post_1$-Pre	0.1571	1.034	0.0811	1.460	0.30
$Post_2$-Pre	-0.0240	1.066	-0.4000	1.694	1.16
$Post_2$-$Post_1$	0.1920	1.075	-0.4000	1.276	0.92
Active-Passive					
$Post_1$-Pre	0.3094	1.334	-0.3243	1.684	2.42*
$Post_2$-Pre	0.1280	1.238	-0.1667	1.053	1.20
$Post_2$-$Post_1$	-0.2339	1.282	0.1000	1.768	-0.97
Useful-Useless					
$Post_1$-Pre	0.0786	1.314	0.3243	1.617	1.58
$Post_2$-Pre	0.0640	1.113	-0.5667	1.382	2.66**
$Post_2$-$Post_1$	-0.1120	1.220	-0.0333	1.884	-0.22
Good-Bad					
$Post_1$-Pre	0.2929	0.917	0.1081	1.100	1.04
$Post_2$-Pre	0.0320	1.015	-0.5333	1.306	2.58**
$Post_2$-$Post_1$	-0.2480	0.939	-0.4333	1.357	0.71
Pleasant-Unpleasant					
$Post_1$-Pre	0.3429	1.124	-0.1081	1.370	2.07*
$Post_2$-Pre	0.0560	1.173	-0.7000	1.393	3.05**
$Post_2$-$Post_1$	0.3840	0.982	-0.3667	1.586	-0.06
Strong-Weak					
Post1-Pre	0.3071	1.383	-0.1081	1.595	1.57
Post2-Pre	0.0320	1.436	-0.5333	1.548	1.91
$Post_2$-$Post_1$	0.3520	1.346	0.1333	1.833	-0.61
Varied-Monotonous					
$Post_1$-Pre	0.0292	1.317	0.0541	1.508	-0.10
$Post_2$-Pre	-0.1557	1.432	-0.3000	1.512	0.49
$Post_2$-$Post_1$	-0.2705	1.477	0.3000	1.601	0.10

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* p = < .05.

** p = < .01.

TABLE VIII

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT LEARNING STYLES

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.9167	1.624	0.5135	1.193	1.69
$Post_2$-Pre	0.4922	1.397	0.0667	1.530	1.47
$Post_2$-$Post_1$	-0.3730	1.396	-0.3667	1.351	-0.02
Eager-Reluctant					
$Post_1$-Pre	0.9021	1.455	0.2703	1.283	2.41*
$Post_2$-Pre	0.4331	1.472	0.1667	1.392	0.90
$Post_2$-$Post_1$	-0.4921	1.288	-0.2000	1.424	-1.09
Practical-Theoretical					
$Post_1$-Pre	0.7465	1.966	0.0811	1.801	1.86
$Post_2$-Pre	0.2344	1.859	0.2000	1.919	0.09
$Post_2$-$Post_1$	-0.5081	1.787	0.0667	2.067	-1.53
Valuable-Worthless					
$Post_1$-Pre	0.6597	1.135	-0.1622	1.365	3.76**
$Post_2$-Pre	0.1953	1.137	-0.2000	1.126	1.72
$Post_2$-$Post_1$	-0.4365	1.031	0.1333	1.479	-2.00*
Domineering-Lax					
$Post_1$-Pre	-0.0845	1.669	-0.1892	1.450	0.35
$Post_2$-Pre	-0.1172	1.378	0.1000	1.807	-0.73
$Post_2$-$Post_1$	-0.0565	1.339	0.3667	1.520	-1.51
Meaningful-Meaningless					
$Post_1$-Pre	0.7552	1.317	0.2973	1.392	1.86
$Post_2$-Pre	0.3150	1.314	0.0000	1.486	1.15
$Post_2$-$Post_1$	-0.4365	0.916	-0.1333	1.432	-1.11
Active-Passive					
$Post_1$-Pre	0.7183	1.896	0.0000	1.394	2.57**
$Post_2$-Pre	0.3386	1.765	-0.4000	1.734	2.07*
$Post_2$-$Post_1$	-0.4880	1.389	-0.3000	1.643	-0.64
Useful-Useless					
$Post_1$-Pre	0.4056	1.679	0.2973	1.288	0.37
$Post_2$-Pre	0.1328	1.745	-0.3333	1.971	1.28
$Post_2$-$Post_1$	-0.4400	1.613	-0.4000	1.868	-0.12
Good-Bad					
$Post_1$-Pre	0.7273	1.323	0.1351	1.843	-1.84
$Post_2$-Pre	0.3780	1.253	-0.1333	1.676	1.57
$Post_2$-$Post_1$	-0.3968	1.118	0.0333	1.810	-1.25
Pleasant-Unpleasant					
$Post_1$-Pre	-0.5734	1.494	0.1622	1.385	1.51
$Post_2$-Pre	-0.1732	1.375	-0.2667	1.311	1.59
$Post_2$-$Post_1$	-0.4444	1.456	-0.2000	1.584	-0.81
Strong-Weak					
$Post_1$-Pre	0.6154	1.587	0.2162	1.475	1.38
$Post_2$-Pre	0.1484	1.735	-0.1333	1.717	0.80
$Post_2$-$Post_1$	-0.5280	1.634	-0.2000	1.937	-0.95
Varied-Monotonous					
$Post_1$-Pre	0.2569	1.499	-0.0541	2.054	0.86
$Post_2$-Pre	0.0547	1.449	-0.3667	1.938	1.12
$Post_2$-$Post_1$	-0.2222	1.419	-0.0333	1.629	-0.64

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, and $Post_2$ = $Posttest_2$.

* $p = < .05$.

** $p = < .01$.

TABLE IX

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT OPEN CLASSROOM

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.5804	1.371	-0.2973	1.664	3.32*
$Post_2$-Pre	0.0781	1.429	-0.7667	1.524	2.88**
$Post_2$-$Post_1$	-0.5040	1.589	-0.4667	1.224	-0.12
Eager-Reluctant					
$Post_1$-Pre	0.5524	1.731	0.0000	2.345	1.34
$Post_2$-Pre	-0.0625	1.839	-0.5331	1.756	1.27
$Post_2$-$Post_1$	-0.5600	1.623	-0.4000	1.850	-0.47
Practical-Theoretical					
$Post_1$-Pre	0.9071	2.000	0.2703	2.064	1.71
$Post_2$-Pre	-0.2266	1.875	-0.6667	1.826	2.36*
$Post_2$-$Post_1$	-0.7016	1.725	-0.9000	1.605	0.57
Valuable-Worthless					
$Post_1$-Pre	0.6383	1.289	-0.1622	1.573	3.21**
$Post_2$-Pre	-0.0547	1.257	-0.6000	1.303	2.12*
$Post_2$-$Post_1$	-0.6992	1.299	-0.4000	1.522	-1.09
Domineering-Lax					
$Post_1$-Pre	-0.1748	1.479	-0.6757	1.717	1.77
$Post_2$-Pre	-0.1094	1.598	-0.3333	2.123	0.54
$Post_2$-$Post_1$	0.1040	1.534	0.4000	2.175	-0.70
Meaningful-Meaningless					
$Post_1$-Pre	0.6014	1.349	-0.0541	1.353	2.63**
$Post_2$-Pre	-0.0078	1.417	-0.8333	1.704	2.76**
$Post_2$-$Post_1$	-0.6160	1.325	-0.8333	1.392	0.80
Active-Passive					
$Post_1$-Pre	0.4615	1.519	0.0811	1.479	1.95*
$Post_2$-Pre	0.0625	1.611	-0.8333	1.683	2.72**
$Post_2$-$Post_1$	-0.4400	1.537	-0.5667	1.431	0.41
Useful-Useless					
$Post_1$-Pre	0.6241	1.709	-0.1081	1.197	3.00**
$Post_2$-Pre	0.1417	1.562	-0.7333	1.574	2.76**
$Post_2$-$Post_1$	-0.5081	1.445	0.5333	1.456	0.09
Good-Bad					
$Post_1$-Pre	0.5804	1.280	-0.2432	1.480	3.37**
$Post_2$-Pre	-0.2422	1.396	-0.9333	1.530	2.40*
$Post_2$-$Post_1$	-0.8400	1.328	-0.5667	1.331	-1.01
Pleasant-Unpleasant					
$Post_1$-Pre	0.4895	1.409	-0.4865	1.407	3.76**
$Post_2$-Pre	-0.0859	1.453	-1.0667	1.639	3.25**
$Post_2$-$Post_1$	-0.5920	1.333	-0.5667	1.612	-0.09
Strong-Weak					
$Post_1$-Pre	0.4126	1.611	0.0000	1.683	1.38
$Post_2$-Pre	-0.1641	1.566	-0.7333	2.377	1.25
$Post_2$-$Post_1$	-0.5840	1.602	-0.7667	1.942	0.54
Varied-Monotonous					
$Post_1$-Pre	0.1901	1.202	-0.4595	1.538	2.39*
$Post_2$-Pre	-0.0394	1.466	-0.2667	1.484	0.76
$Post_2$-$Post_1$	-0.2560	1.373	0.0333	1.542	-1.01

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* P = < .05.

** P = < .01.

TABLE X

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT CONTINUOUS PROGRESS

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.1736	1.130	-0.0451	1.373	1.04
$Post_2$-Pre	0.0234	1.220	-0.4667	1.306	1.95*
$Post_2$-$Post_1$	-0.1587	1.268	-0.2333	1.478	0.28
Eager-Reluctant					
$Post_1$-Pre	0.1972	1.333	-0.2162	1.601	1.61
$Post_2$-Pre	-0.0547	1.544	-0.2000	1.095	0.60
$Post_2$-$Post_1$	-0.3145	1.579	0.1333	1.570	-1.40
Practical-Theoretical					
$Post_1$-Pre	0.1667	1.384	0.2703	2.317	-0.26
$Post_2$-Pre	-0.1094	1.633	-0.0667	1.929	-0.12
$Post_2$-$Post_1$	-0.2778	1.542	-0.0333	2.025	-0.62
Valuable-Worthless					
$Post_1$-Pre	0.1042	1.267	-0.0541	1.290	0.68
$Post_2$-Pre	-0.1328	1.300	-0.1667	1.085	0.13
$Post_2$-$Post_1$	-0.2698	1.242	-0.0667	1.285	-0.80
Domineering-Lax					
$Post_1$-Pre	0.1818	1.608	-0.4324	1.591	2.08*
$Post_2$-Pre	-0.1406	1.635	-0.2333	1.251	0.29
$Post_2$-$Post_1$	-0.2960	1.675	0.1667	0.913	-2.06*
Meaningful-Meaningless					
$Post_1$-Pre	0.0625	1.178	-0.1081	1.197	0.78
$Post_2$-Pre	-0.1250	1.057	-0.4000	1.102	1.27
$Post_2$-$Post_1$	-0.1905	1.185	-0.3000	1.291	0.45
Active-Passive					
$Post_1$-Pre	0.2083	1.647	0.1081	1.663	0.33
$Post_2$-Pre	0.0859	1.597	-0.5000	1.796	1.77
$Post_2$-$Post_1$	-0.1349	1.768	-0.5000	1.757	1.02
Useful-Useless					
$Post_1$-Pre	0.1748	1.274	-0.2162	1.548	1.59
$Post_2$-Pre	0.0787	1.360	-0.3333	1.398	1.48
$Post_2$-$Post_1$	-0.1508	1.369	0.0000	1.509	-0.53
Good-Bad					
$Post_1$-Pre	0.1119	1.022	0.2423	1.256	1.79
$Post_2$-Pre	0.0313	1.183	-0.3667	1.098	1.42
$Post_2$-$Post_1$	-0.2000	1.185	0.0000	1.390	-0.80
Pleasant-Unpleasant					
$Post_1$-Pre	0.1667	1.051	-0.1622	1.385	1.35
$Post_2$-Pre	-0.3359	1.427	-0.5000	1.280	0.58
$Post_2$-$Post_1$	-0.4841	1.367	-0.1333	1.676	-1.21
Strong-Weak					
$Post_1$-Pre	-0.0903	1.509	-0.0541	1.580	-0.13
$Post_2$-Pre	-0.1250	1.495	-0.2667	1.507	0.47
$Post_2$-$Post_1$	0.0556	1.602	-0.0333	1.903	-0.07
Varied-Monotonous					
$Post_1$-Pre	0.0000	1.301	0.0278	1.647	-0.11
$Post_2$-Pre	-0.1641	1.396	-0.5172	1.661	1.19
$Post_2$-$Post_1$	-0.2302	1.421	-0.3000	1.466	0.24

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, and $Post_2$ = $Posttest_2$.

* p = < .05.

** p = < .01.

TABLE XI

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT PROGRAM EVALUATION

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.5556	1.550	0.2432	1.588	1.09
$Post_2$-Pre	0.1016	1.500	-0.0333	1.426	0.45
$Post_2$-$Post_1$	-0.4365	1.521	-0.1667	1.821	-0.84
Eager-Reluctant					
$Post_1$-Pre	0.5069	1.943	-0.1389	1.869	1.80
$Post_2$-Pre	0.3438	1.807	-0.1000	1.863	1.20
$Post_2$-$Post_1$	-0.1905	1.724	0.0333	1.732	-0.64
Practical-Theoretical					
$Post_1$-Pre	0.7762	1.923	0.4595	2.142	0.87
$Post_2$-Pre	0.2283	1.953	-0.3333	2.090	1.40
$Post_2$-$Post_1$	-0.4841	1.457	-0.9667	1.712	1.57
Valuable-Worthless					
$Post_1$-Pre	0.3056	1.308	0.1351	1.228	0.72
$Post_2$-Pre	-0.0078	1.264	-0.3333	1.729	0.97
$Post_2$-$Post_1$	-0.2619	1.005	-0.4000	1.354	0.53
Domineering-Lax					
$Post_1$-Pre	0.4306	1.341	0.0541	1.779	1.20
$Post_2$-Pre	0.0703	1.376	0.3000	1.915	-0.62
$Post_2$-$Post_1$	-0.3095	1.472	0.2667	1.818	-1.84
Meaningful-Meaningless					
$Post_1$-Pre	0.2847	1.233	-0.1622	1.259	1.96*
$Post_2$-Pre	-0.0703	1.311	-0.4333	1.278	1.37
$Post_2$-$Post_1$	-0.3333	1.028	-0.1667	1.510	-0.57
Active-Passive					
$Post_1$-Pre	0.3147	1.821	-0.0541	2.260	1.04
$Post_2$-Pre	0.1016	1.814	-0.5333	2.097	1.67
$Post_2$-$Post_1$	-0.2800	1.707	-0.3333	1.768	0.15
Useful-Useless					
$Post_1$-Pre	0.3542	1.397	0.5135	1.660	-0.59
$Post_2$-Pre	-0.0313	1.537	-0.0667	1.461	0.11
$Post_2$-$Post_1$	-0.4365	1.210	-0.5667	1.251	0.53
Good-Bad					
$Post_1$-Pre	0.1944	1.154	0.1351	1.182	0.28
$Post_2$-Pre	-0.0625	1.228	-0.3000	1.368	0.93
$Post_2$-$Post_1$	-0.2857	1.165	-0.3333	1.373	0.19
Pleasant-Unpleasant					
$Post_1$-Pre	0.5524	1.739	0.2162	1.917	1.03
$Post_2$-Pre	-0.0476	1.538	-0.2333	2.063	0.46
$Post_2$-$Post_1$	-0.6270	1.584	-0.4000	1.793	-0.69
Strong-Weak					
$Post_1$-Pre	0.1458	1.809	0.1081	1.308	0.14
$Post_2$-Pre	0.1484	1.730	-0.1667	1.663	0.90
$Post_2$-$Post_1$	-0.0952	1.704	-0.3000	1.393	0.61
Varied-Monotonous					
$Post_1$-Pre	0.2153	1.614	-0.1081	1.941	1.04
$Post_2$-Pre	-0.1250	1.646	-0.4667	1.676	1.02
$Post_2$-$Post_1$	0.4206	1.675	-0.2000	1.690	-0.65

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, and $Post_2$ = $Posttest_2$.

* $p = < .05$.

** $p = < .01$.

TABLE XII

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT ASSESSING INDIVIDUAL NEEDS

Polar Adjectives/Test[a]	Mean Gain	SD	Mean Gain	SD	t
Kind-Cruel					
$Post_1$-Pre	0.2042	1.042	-0.1622	1.143	1.87
$Post_2$-Pre	0.0397	1.280	-0.3000	1.535	1.26
$Post_2$-$Post_1$	-0.1746	1.103	-0.0667	1.596	-0.35
Eager-Reluctant					
$Post_1$-Pre	0.1915	1.368	0.0000	1.795	-0.60
$Post_2$-Pre	0.0635	1.407	-0.2667	2.067	0.83
$Post_2$-$Post_1$	-0.1667	1.463	-0.1333	1.697	-0.11
Practical-Theoretical					
$Post_1$-Pre	0.2340	1.593	-0.2162	1.336	1.58
$Post_2$-Pre	0.0397	1.617	-0.4000	1.632	1.34
$Post_2$-$Post_1$	-0.2240	1.555	-0.1333	1.548	-0.29
Valuable-Worthless					
$Post_1$-Pre	0.0286	1.131	-0.2162	0.976	1.20
$Post_2$-Pre	0.0238	0.942	-0.4667	1.358	1.87
$Post_2$-$Post_1$	-0.1048	0.834	-0.1333	1.548	0.10
Domineering-Lax					
$Post_1$-Pre	0.1831	1.351	0.0270	0.986	-0.79
$Post_2$-Pre	-0.1905	1.319	-0.0333	1.474	-0.57
$Post_2$-$Post_1$	-0.0317	1.302	-0.0333	1.273	0.01
Meaningful-Meaningless					
$Post_1$-Pre	0.1056	1.195	-0.2432	1.011	1.63
$Post_2$-Pre	0.0556	1.014	-0.5333	1.252	2.73**
$Post_2$-$Post_1$	-0.1270	0.938	-0.1000	1.242	-0.11
Active-Passive					
$Post_1$-Pre	0.1056	1.515	-0.1622	1.708	0.93
$Post_2$-Pre	-0.0556	1.571	-0.1667	1.763	0.34
$Post_2$-$Post_1$	-0.1349	1.631	-0.2333	1.813	0.29
Useful-Useless					
$Post_1$-Pre	0.1197	1.101	-0.2162	1.766	1.10
$Post_2$-Pre	-0.0556	1.083	0.0333	1.520	-0.30
$Post_2$-$Post_1$	-0.2381	1.113	0.1000	1.322	-1.44
Good-Bad					
$Post_1$-Pre	0.2113	1.214	-0.1622	1.143	1.69
$Post_2$-Pre	0.0714	0.965	-0.2333	1.305	1.20
$Post_2$-$Post_1$	-0.1825	0.843	-0.0333	1.273	-0.61
Pleasant-Unpleasant					
$Post_1$-Pre	0.1277	1.336	0.3784	1.497	-0.99
$Post_2$-Pre	-0.2302	1.340	0.3000	1.579	-1.88
$Post_2$-$Post_1$	-0.3280	1.343	-0.0333	1.351	-1.08
Strong-Weak					
$Post_1$-Pre	0.0851	1.579	-0.2973	1.151	1.65
$Post_2$-Pre	-0.1111	1.689	-0.2333	1.794	0.35
$Post_2$-$Post_1$	-0.1680	1.740	0.1000	1.155	-0.72
Varied-Monotonous					
$Post_1$-Pre	0.1702	1.483	-0.2973	1.412	1.72
$Post_2$-Pre	-0.0240	1.445	-0.1333	1.655	0.36
$Post_2$-$Post_1$	-0.2460	1.384	0.1000	1.094	-1.28

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* P = < .05.

** P = < .01.

TABLE XIII

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT SYSTEMATIC PLANNING

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.2937	1.238	0.0000	1.080	1.32
$Post_2$-Pre	0.1102	1.565	-0.1000	1.689	0.65
$Post_2$-$Post_1$	-0.2302	1.272	0.1000	1.583	-1.22
Eager-Reluctant					
Post1-Pre	0.3194	1.480	0.1892	1.450	0.48
$Post_2$-Pre	0.1172	1.710	-0.1667	1.744	0.82
$Post_2$-$Post_1$	-0.2540	1.344	-0.2667	1.337	0.05
Practical-Theoretical					
$Post_1$-Pre	0.1538	1.646	-0.2162	2.299	0.92
$Post_2$-Pre	-0.0313	1.674	0.0667	1.780	-0.28
$Post_2$-$Post_1$	-0.2640	1.854	0.1333	2.013	-1.04
Valuable-Worthless					
$Post_1$-Pre	0.1875	1.134	-0.0270	1.323	0.99
$Post_2$-Pre	-0.0391	1.200	-0.0667	1.172	0.11
$Post_2$-$Post_1$	-0.2540	1.095	0.1000	1.242	-1.55
Domineering-Lax					
$Post_1$-Pre	0.0417	1.608	-0.4058	1.481	1.53
$Post_2$-Pre	0.0938	1.519	-0.3000	1.418	1.29
$Post_2$-$Post_1$	0.0397	1.365	0.1333	1.196	-0.35
Meaningful-Meaningless					
$Post_1$-Pre	0.2431	1.053	0.0000	1.312	1.19
Post2-Pre	-0.1250	1.080	-0.2333	1.278	0.48
$Post_2$-$Post_1$	0.3968	1.103	-0.0667	1.048	-1.49
Active-Passive					
$Post_1$-Pre	0.4375	1.581	0.4324	1.659	0.02
$Post_2$-Pre	0.0391	1.518	-0.3000	2.168	0.81
$Post_2$-$Post_1$	-0.4048	1.398	-0.5000	1.656	-0.32
Useful-Useless					
$Post_1$-Pre	0.1806	1.186	-0.1351	1.378	1.40
$Post_2$-Pre	-0.1406	1.148	-0.3333	1.422	0.79
$Post_2$-$Post_1$	-0.3571	1.169	-0.0333	1.497	-1.29
Good-Bad					
$Post_1$-Pre	0.1736	1.086	0.1351	1.337	0.18
$Post_2$-Pre	-0.0781	1.069	-0.4333	1.135	1.62
$Post_2$-$Post_1$	-0.2857	1.137	-0.3333	1.322	0.20
Pleasant-Unpleasant					
$Post_1$-Pre	0.4336	1.475	-0.0541	1.413	1.81
$Post_2$-Pre	0.0938	1.529	-0.2333	2.012	0.84
$Post_2$-$Post_1$	-0.3280	1.441	-0.0667	1.760	-0.85
Strong-Weak					
$Post_1$-Pre	0.2394	1.593	0.2703	1.677	-0.10
$Post_2$-Pre	0.0547	1.508	0.0333	1.771	0.07
$Post_2$-$Post_1$	-0.2661	1.250	-0.2000	1.324	-0.26
Varied-Monotonous					
$Post_1$-Pre	0.3830	2.013	0.4595	2.231	-0.20
$Post_2$-Pre	0.1732	1.658	0.2333	2.459	-0.13
$Post_2$-$Post_1$	-0.2823	1.496	-0.4333	1.960	0.47

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* p = < .05.

** p = < .01.

TABLE XIV

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT MOTIVATION

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.1197	1.127	0.3784	1.479	-0.99
$Post_2$-Pre	0.0391	1.276	0.2000	1.157	-0.63
$Post_2$-$Post_1$	-0.0800	1.189	-0.1667	1.555	0.29
Eager-Reluctant					
$Post_1$-Pre	0.0493	1.094	0.1622	1.259	-0.54
$Post_2$-Pre	-0.1016	1.368	0.3333	1.213	-1.60
$Post_2$-$Post_1$	-0.1984	1.284	0.1000	1.583	-1.09
Practical-Theoretical					
$Post_1$-Pre	0.5423	1.592	0.6216	1.673	-0.27
$Post_2$-Pre	0.5078	1.577	0.0667	1.780	1.35
$Post_2$-$Post_1$	-0.0960	1.254	-0.4333	1.223	1.33
Valuable-Worthless					
$Post_1$-Pre	0.1119	0.912	0.1622	1.323	-0.22
$Post_2$-Pre	-0.0391	0.926	-0.2333	1.251	0.80
$Post_2$-$Post_1$	-0.1190	0.765	-0.3333	1.124	0.99
Domineering-Lax					
$Post_1$-Pre	0.1786	1.579	-0.0541	1.153	1.00
$Post_2$-Pre	0.1280	1.621	-0.1000	1.583	0.69
$Post_2$-$Post_1$	-0.1032	1.436	0.0000	1.597	-0.35
Meaningful-Meaningless					
$Post_1$-Pre	0.1608	1.282	0.2703	1.446	-0.45
$Post_2$-Pre	0.0313	1.183	-0.0667	1.172	0.41
$Post_2$-$Post_1$	-0.1111	1.006	-0.2667	1.172	0.74
Active-Passive					
$Post_1$-Pre	-0.0070	1.858	-0.1892	1.596	0.55
$Post_2$-Pre	-0.0315	1.613	-0.0667	1.617	0.11
$Post_2$-$Post_1$	-0.1905	1.435	0.1333	2.047	-0.82
Useful-Useless					
$Post_1$-Pre	0.1119	1.268	0.1081	1.449	0.02
$Post_2$-Pre	-0.1172	1.344	-0.4333	1.716	1.10
$Post_2$-$Post_1$	-0.2063	1.358	-0.4667	1.137	0.97
Good-Bad					
$Post_1$-Pre	0.1056	1.195	0.0541	1.079	0.24
$Post_2$-Pre	-0.0315	1.031	-0.2333	1.382	0.75
$Post_2$-$Post_1$	-0.1270	0.996	-0.3667	1.273	1.12
Pleasant-Unpleasant					
$Post_1$-Pre	0.1119	1.273	0.2432	1.362	-0.55
$Post_2$-Pre	-0.0938	1.053	-0.1333	1.717	0.12
$Post_2$-$Post_1$	-0.1984	1.153	-0.4333	1.547	0.78
Strong-Weak					
$Post_1$-Pre	0.1338	1.425	0.2162	1.635	-0.30
$Post_2$-Pre	0.0313	1.345	0.0333	2.109	-0.01
$Post_2$-$Post_1$	-0.0960	1.489	-0.1667	1.895	0.22
Varied-Monotonous					
$Post_1$-Pre	0.0210	1.397	-0.0811	1.320	0.40
$Post_2$-Pre	-0.1875	1.333	-0.2000	1.495	0.05
$Post_2$-$Post_1$	-0.2222	1.199	-0.3667	1.752	0.43

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, and $Post_2$ = $Posttest_2$.

* $p = < .05$.

** $p = < .01$.

TABLE XV

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT METHODS

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.4444	1.471	-0.0811	1.164	2.02*
$Post_2$-Pre	0.0469	1.587	-0.2667	1.596	0.97
$Post_2$-$Post_1$	-0.4127	1.370	-0.2333	1.194	-0.66
Eager-Reluctant					
$Post_1$-Pre	0.5070	1.623	0.1351	1.494	2.18*
$Post_2$-Pre	0.0709	1.544	-0.3333	1.936	1.23
$Post_2$-$Post_1$	-0.4048	1.611	-0.1333	1.961	-0.79
Practical-Theoretical					
$Post_1$-Pre	0.3125	1.822	0.4595	1.966	-0.43
$Post_2$-Pre	-0.1953	1.903	0.0333	2.580	-0.46
$Post_2$-$Post_1$	-0.5317	1.662	-0.6000	1.850	0.20
Valuable-Worthless					
$Post_1$-Pre	0.1049	1.124	-0.0270	1.771	0.43
$Post_2$-Pre	-0.2598	1.197	-0.1667	1.464	-0.37
$Post_2$-$Post_1$	-0.3651	1.204	0.0000	1.619	-1.16
Domineering-Lax					
$Post_1$-Pre	-0.0352	1.699	0.0811	1.441	-0.38
$Post_2$-Pre	-0.0315	1.608	0.1333	1.613	-0.50
$Post_2$-$Post_1$	-0.0159	1.668	-0.0333	1.245	0.05
Meaningful-Meaningless					
$Post_1$-Pre	0.2361	1.038	0.1351	1.273	0.50
$Post_2$-Pre	-0.2813	1.261	-0.2333	1.612	-0.18
$Post_2$-$Post_1$	-0.5000	1.178	-0.2000	1.186	-1.25
Active-Passive					
$Post_1$-Pre	0.2517	1.508	-0.1081	1.612	1.28
$Post_2$-Pre	-0.1328	1.633	-0.5000	1.925	1.07
$Post_2$-$Post_1$	-0.3680	1.654	-0.4000	1.567	0.10
Useful-Useless					
$Post_1$-Pre	-0.2014	1.367	-0.1892	1.450	1.53
$Post_2$-Pre	-0.0703	1.528	-0.4667	1.525	1.28
$Post_2$-$Post_1$	-0.3095	1.478	-0.0333	1.650	-0.90
Good-Bad					
$Post_1$-Pre	0.1806	1.126	0.0270	1.658	0.67
$Post_2$-Pre	-0.2344	1.307	-0.3000	1.765	0.23
$Post_2$-$Post_1$	-0.3810	1.308	-0.2000	1.324	-0.68
Pleasant-Unpleasant					
$Post_1$-Pre	0.1250	1.306	-0.2703	1.407	1.62
$Post_2$-Pre	-0.4766	1.607	-0.4333	1.633	-0.13
$Post_2$-$Post_1$	-0.6508	1.525	0.1667	1.206	-1.62
Strong-Weak					
$Post_1$-Pre	0.0625	1.469	-0.1622	1.323	0.85
$Post_2$-Pre	-0.4609	1.562	-0.1333	2.013	-0.98
$Post_2$-$Post_1$	-0.5000	1.579	0.0333	1.564	-1.67
Varied-Monotonous					
$Post_1$-Pre	0.0139	1.519	-0.5135	1.138	1.92
$Post_2$-Pre	-0.2266	1.533	-0.5000	1.871	0.84
$Post_2$-$Post_1$	-0.1984	1.565	0.0333	1.790	-0.71

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* p = < .05.

** p = < .01.

TABLE XVI

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT FAILURE

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	-0.1111	1.836	0.7027	1.762	-2.42*
$Post_2$-Pre	0.1406	1.645	-0.6667	1.484	0.63
$Post_2$-$Post_1$	0.2778	1.805	-0.8333	1.877	3.01**
Eager-Reluctant					
$Post_1$-Pre	-0.2028	1.714	0.2432	1.754	-1.40
$Post_2$-Pre	0.0787	1.735	-0.4667	1.502	1.59
$Post_2$-$Post_1$	0.1825	1.646	-0.6667	1.605	2.55**
Practical-Theoretical					
$Post_1$-Pre	-0.1338	1.791	-0.0270	1.443	-0.34
$Post_2$-Pre	-0.0547	1.749	-0.5000	2.097	1.21
$Post_2$-$Post_1$	0.0320	1.992	-0.3333	1.882	0.91
Valuable-Worthless					
$Post_1$-Pre	-0.2569	1.777	0.5135	1.644	-2.39*
$Post_2$-Pre	0.0313	1.984	0.3667	2.484	-0.79
$Post_2$-$Post_1$	0.1825	1.965	-0.1667	1.967	0.87
Domineering-Lax					
$Post_1$-Pre	-0.2553	1.994	-0.0541	1.580	-0.57
$Post_2$-Pre	0.1181	1.815	-0.2667	1.946	1.03
$Post_2$-$Post_1$	0.4355	1.654	0.2333	2.029	1.90
Meaningful-Meaningless					
$Post_1$-Pre	-0.2569	2.048	0.0000	1.599	-0.71
$Post_2$-Pre	0.0469	1.935	0.0000	2.302	0.12
$Post_2$-$Post_1$	0.2302	2.064	-0.0333	2.173	0.62
Active-Passive					
$Post_1$-Pre	-0.2708	1.983	-0.1081	1.595	-0.46
$Post_2$-Pre	0.2344	1.759	-0.0667	2.083	0.81
$Post_2$-$Post_1$	0.4048	2.005	0.0667	1.911	0.84
Useful-Useless					
$Post_1$-Pre	-0.3194	1.906	0.4595	1.592	-2.29*
$Post_2$-Pre	0.0938	1.653	0.4000	2.191	-0.72
$Post_2$-$Post_1$	0.2937	1.943	-0.1667	1.840	1.18
Good-Bad					
$Post_1$-Pre	0.0208	1.931	0.4595	1.426	-1.29
$Post_2$-Pre	0.3828	1.985	0.0667	1.982	0.79
$Post_2$-$Post_1$	0.2937	2.083	-0.5667	1.794	2.08*
Pleasant-Unpleasant					
$Post_1$-Pre	0.0000	1.832	0.4324	1.708	-1.30
$Post_2$-Pre	0.2500	1.739	0.2000	1.518	0.15
$Post_2$-$Post_1$	0.2143	1.751	-0.4333	1.906	1.79
Strong-Weak					
$Post_1$-Pre	-0.1818	1.871	0.6757	1.780	-2.51**
$Post_2$-Pre	0.1328	1.772	0.1667	2.260	-0.09
$Post_2$-$Post_1$	0.1040	1.913	-0.5000	1.961	1.55
Varied-Monotonous					
$Post_1$-Pre	0.1000	1.764	0.1081	1.745	0.64
$Post_2$-Pre	0.0317	1.743	-0.3000	2.246	0.88
$Post_2$-$Post_1$	-0.0565	2.053	-0.2333	1.906	0.43

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* $p = < .05$.

** $p = < .01$.

TABLE XVII

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT ORGANIZED

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.3194	1.388	0.1351	1.337	0.73
$Post_2$-Pre	0.1719	1.256	0.0000	1.509	0.65
$Post_2$-$Post_1$	-0.1825	1.267	0.0000	1.313	-0.70
Eager-Reluctant					
$Post_1$-Pre	0.3611	1.563	0.2703	1.465	0.32
$Post_2$-Pre	0.0938	1.539	-0.0333	1.586	0.40
$Post_2$-$Post_1$	-0.2381	1.536	-0.1000	1.322	-0.45
Practical-Theoretical					
$Post_1$-Pre	0.2517	1.527	0.0270	1.500	0.80
$Post_2$-Pre	0.1250	1.431	-0.1333	1.737	0.85
$Post_2$-$Post_1$	-0.1600	1.526	-0.2333	1.305	0.24
Valuable-Worthless					
$Post_1$-Pre	0.1667	0.869	0.0811	0.894	0.53
$Post_2$-Pre	-0.0391	1.038	-0.0333	1.033	-0.03
$Post_2$-$Post_1$	-0.2302	1.067	-0.0333	1.189	-0.89
Domineering-Lax					
$Post_1$-Pre	0.2083	1.599	-0.3514	1.670	1.88
$Post_2$-Pre	-0.0703	1.496	-0.4000	1.476	1.09
$Post_2$-$Post_1$	-0.1825	1.394	0.2667	1.311	-1.60
Meaningful-Meaningless					
$Post_1$-Pre	0.2361	0.989	0.0541	1.079	0.98
$Post_2$-Pre	0.0313	1.049	-0.0333	1.326	0.29
$Post_2$-$Post_1$	-0.2143	0.985	-0.0333	1.299	-0.72
Active-Passive					
$Post_1$-Pre	0.1111	1.747	0.0270	2.374	0.20
$Post_2$-Pre	0.0469	1.725	-0.1333	1.925	0.50
$Post_2$-$Post_1$	-0.0635	1.584	0.0000	1.619	-0.20
Useful-Useless					
$Post_1$-Pre	0.2986	1.207	0.0811	1.341	0.96
$Post_2$-Pre	0.1641	1.391	0.0667	1.363	0.82
$Post_2$-$Post_1$	-0.1429	0.994	-0.1333	1.502	-0.03
Good-Bad					
$Post_1$-Pre	0.2500	1.034	0.0000	0.972	1.33
$Post_2$-Pre	0.0391	1.045	-0.2333	1.331	1.22
$Post_2$-$Post_1$	-0.1270	1.073	-0.2000	1.215	0.33
Pleasant-Unpleasant					
$Post_1$-Pre	0.1111	1.333	0.1622	1.463	-0.20
$Post_2$-Pre	-0.2813	1.436	-0.2667	1.552	-0.05
$Post_2$-$Post_1$	-0.2857	1.373	-0.3333	1.826	0.13
Strong-Weak					
$Post_1$-Pre	0.0000	1.630	-0.1351	1.653	0.45
$Post_2$-Pre	0.0156	1.501	-0.2333	1.755	0.79
$Post_2$-$Post_1$	0.0238	1.494	0.0000	1.509	0.08
Varied-Monotonous					
$Post_1$-Pre	0.3846	1.574	0.4324	2.141	-0.13
$Post_2$-Pre	-0.0945	1.711	-0.5000	1.822	0.58
$Post_2$-$Post_1$	-0.5079	1.614	-0.5333	1.676	0.08

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* P = < .05.

** P = < .01.

TABLE XVIII

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT INNOVATION

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.1189	1.207	0.0000	0.943	0.56
$Post_2$-Pre	-0.0938	1.508	-0.4333	1.278	1.14
$Post_2$-$Post_1$	-0.2560	1.419	-0.3000	1.179	0.16
Eager-Reluctant					
$Post_1$-Pre	0.1678	1.623	0.0811	1.256	0.30
$Post_2$-Pre	0.0625	1.499	-0.0333	1.217	0.33
$Post_2$-$Post_1$	-0.1920	1.395	-0.0667	1.507	-0.44
Practical-Theoretical					
$Post_1$-Pre	0.6408	1.639	0.3514	1.379	0.99
$Post_2$-Pre	0.3465	1.635	-0.0667	2.100	1.18
$Post_2$-$Post_1$	-0.3840	1.518	-0.2000	1.808	-0.57
Valuable-Worthless					
$Post_1$-Pre	0.0420	1.198	-0.0541	1.311	-0.43
$Post_2$-Pre	-0.1563	1.068	-0.3000	1.208	0.65
$Post_2$-$Post_1$	-0.1920	1.236	0.0667	1.172	-1.04
Domineering-Lax					
$Post_1$-Pre	0.0567	1.403	0.1622	1.302	0.86
$Post_2$-Pre	-0.1496	1.222	-0.3667	1.520	0.83
$Post_2$-$Post_1$	-0.0887	1.282	-0.1000	1.788	0.03
Meaningful-Meaningless					
$Post_1$-Pre	-0.2098	1.180	-0.0541	1.508	0.58
$Post_2$-Pre	-0.1250	1.136	-0.2000	1.324	0.32
$Post_2$-$Post_1$	-0.2960	1.070	0.0667	1.639	-1.95
Active-Passive					
$Post_1$-Pre	0.3287	1.600	0.0270	1.590	1.02
$Post_2$-Pre	0.0234	1.629	-0.3667	1.564	1.19
$Post_2$-$Post_1$	-0.3680	1.527	-0.2333	1.478	-0.44
Useful-Useless					
$Post_1$-Pre	0.2098	1.467	-0.0270	1.756	0.84
$Post_2$-Pre	-0.0547	1.382	-0.2000	1.750	0.49
$Post_2$-$Post_1$	-0.2560	1.231	0.0000	1.509	-0.98
Good-Bad					
$Post_1$-Pre	0.1608	1.325	-0.0270	1.258	0.78
$Post_2$-Pre	-0.1172	1.265	-0.3333	1.470	0.82
$Post_2$-$Post_1$	-0.3120	1.088	-0.3333	1.697	-0.55
Pleasant-Unpleasant					
$Post_1$-Pre	0.1608	1.377	0.1892	1.244	-0.11
$Post_2$-Pre	-0.1563	1.307	-0.3000	1.622	0.52
$Post_2$-$Post_1$	-0.3200	1.377	-0.3333	1.709	0.05
Strong-Weak					
$Post_1$-Pre	0.2238	1.585	-0.0811	1.801	1.01
$Post_2$-Pre	-0.0234	1.498	-0.3667	1.650	1.11
$Post_2$-$Post_1$	-0.2640	1.398	0.1333	1.502	-1.38
Varied-Monotonous					
$Post_1$-Pre	0.0000	1.232	-0.2778	1.750	-0.90
$Post_2$-Pre	-0.1875	1.182	-0.2069	1.590	0.06
$Post_2$-$Post_1$	-0.2097	1.114	0.2333	1.695	-1.36

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* p = < .05.

** p = < .01.

TABLE XIX

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT TO HELP

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.2292	1.199	-0.2222	1.290	1.99*
$Post_2$-Pre	-0.0859	1.204	-0.2759	1.032	0.79
$Post_2$-$Post_1$	-0.2698	1.203	-0.0667	1.285	-0.82
Eager-Reluctant					
$Post_1$-Pre	0.1528	1.142	-0.2432	1.300	1.83
$Post_2$-Pre	-0.1250	1.436	-0.5000	1.456	1.28
$Post_2$-$Post_1$	-0.3095	1.229	-0.3000	1.705	-0.03
Practical-Theoretical					
$Post_1$-Pre	0.3592	1.328	0.2432	1.673	0.45
$Post_2$-Pre	0.0547	1.579	-0.0667	1.929	0.36
$Post_2$-$Post_1$	-0.3760	1.281	-0.3667	1.426	-0.04
Valuable-Worthless					
$Post_1$-Pre	0.1875	1.064	0.1351	1.110	0.26
$Post_2$-Pre	-0.1796	1.125	-0.1333	0.937	-0.21
$Post_2$-$Post_1$	-0.3968	1.089	-0.3000	1.208	-0.43
Domineering-Lax					
$Post_1$-Pre	0.1875	1.693	-0.5946	2.061	2.39*
$Post_2$-Pre	-0.1328	1.360	-0.8000	1.955	1.77
$Post_2$-$Post_1$	-0.3175	1.527	0.0667	1.639	-1.22
Meaningful-Meaningless					
$Post_1$-Pre	0.2639	1.084	0.2973	1.431	-0.13
$Post_2$-Pre	-0.0469	1.303	-0.2000	1.243	0.58
$Post_2$-$Post_1$	-0.3889	0.929	-0.4333	1.357	0.17
Active-Passive					
$Post_1$-Pre	0.0347	1.470	0.0811	1.460	-0.17
$Post_2$-Pre	-0.0391	1.251	-0.0333	1.497	-0.02
$Post_2$-$Post_1$	-0.0635	1.527	-0.2667	1.680	0.64
Useful-Useless					
$Post_1$-Pre	0.1319	1.474	0.4054	1.707	-0.97
$Post_2$-Pre	-0.0625	1.272	0.2333	1.501	-1.11
$Post_2$-$Post_1$	-0.2222	1.362	-0.2667	1.311	0.16
Good-Bad					
$Post_1$-Pre	0.2887	1.056	0.0270	1.301	1.28
$Post_2$-Pre	0.0469	1.203	0.2000	1.349	0.61
$Post_2$-$Post_1$	-0.3520	1.057	-0.3000	1.179	-0.24
Pleasant-Unpleasant					
$Post_1$-Pre	0.2448	1.036	-0.2432	0.983	2.58**
$Post_2$-Pre	-0.2205	1.356	-0.4000	1.248	0.66
$Post_2$-$Post_1$	-0.5079	1.225	-0.1667	1.367	-1.34
Strong-Weak					
$Post_1$-Pre	0.0210	1.625	-0.1081	1.265	0.45
$Post_2$-Pre	0.0547	1.492	-0.4667	1.737	1.67
$Post_2$-$Post_1$	0.0080	1.1568	-0.3333	1.322	1.10
Varied-Monotonous					
$Post_1$-Pre	0.1319	1.425	-0.4865	1.216	2.42*
$Post_2$-Pre	-0.2578	1.523	-0.3333	1.269	0.25
$Post_2$-$Post_1$	-0.4683	1.548	0.3333	1.497	-1.61

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* $P_{=} < .05$.

** $P_{=} < .01$.

TABLE XX

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT TO BE HELPED

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.1250	1.134	-0.4054	1.066	2.57**
$Post_2$-Pre	0.0234	1.417	-0.4333	1.104	1.65
$Post_2$-$Post_1$	-0.0714	1.266	0.0000	1.083	-0.29
Eager-Reluctant					
$Post_1$-Pre	0.3916	1.478	-0.0541	1.153	1.70
$Post_2$-Pre	0.1328	1.638	0.0000	1.742	0.39
$Post_2$-$Post_1$	-0.3040	1.530	-0.0667	1.680	-0.75
Practical-Theoretical					
$Post_1$-Pre	0.1049	1.595	0.0811	1.516	0.08
$Post_2$-Pre	-0.2266	1.512	-0.4000	1.754	0.55
$Post_2$-$Post_1$	-0.4160	1.587	-0.2667	1.660	-0.46
Valuable-Worthless					
$Post_1$-Pre	0.2378	1.061	-0.1892	1.151	2.14*
$Post_2$-Pre	-0.1797	1.193	-0.4333	1.251	1.04
$Post_2$-$Post_1$	-0.4524	1.177	-0.0333	1.033	-1.79
Domineering-Lax					
$Post_1$-Pre	0.1888	1.463	-0.3514	2.429	1.29
$Post_2$-Pre	0.0938	1.251	-0.6667	2.090	1.91
$Post_2$-$Post_1$	-0.0240	1.371	0.1000	1.668	-0.43
Meaningful-Meaningless					
$Post_1$-Pre	0.2083	1.083	-0.0811	1.164	1.43
$Post_2$-Pre	-0.1094	1.199	-0.3333	1.184	0.92
$Post_2$-$Post_1$	-0.3571	1.031	-0.1000	0.995	-1.24
Active-Passive					
$Post_1$-Pre	0.3147	1.874	0.4324	1.608	2.22*
$Post_2$-Pre	-0.1172	1.951	-0.4333	1.755	0.81
$Post_2$-$Post_1$	-0.4081	1.805	-0.3333	1.502	-0.77
Useful-Useless					
$Post_1$-Pre	0.1329	1.246	-0.0270	1.518	0.66
$Post_2$-Pre	-0.0630	1.344	-0.0333	1.402	-0.11
$Post_2$-$Post_1$	-0.2937	1.309	0.0000	1.232	-1.12
Good-Bad					
$Post_1$-Pre	0.1815	1.229	-0.4324	1.676	2.11
$Post_2$-Pre	-0.1406	1.272	-0.2667	1.363	0.48
$Post_2$-$Post_1$	-0.3571	1.323	0.0000	1.259	-1.34
Pleasant-Unpleasant					
$Post_1$-Pre	0.2778	1.173	-0.1667	1.682	1.50
$Post_2$-Pre	-0.0703	1.311	-0.1667	1.763	0.28
$Post_2$-$Post_1$	-0.3810	1.379	-0.1379	1.302	-0.86
Strong-Weak					
$Post_1$-Pre	0.2778	1.593	0.2973	1.372	-0.07
$Post_2$-Pre	0.1250	1.537	0.0667	1.741	0.18
$Post_2$-$Post_1$	-0.1746	1.486	-0.2333	1.716	0.19
Varied-Monotonous					
$Post_1$-Pre	0.2361	1.519	-0.1892	1.777	1.47
$Post_2$-Pre	-0.1953	1.415	0.2000	1.690	-1.33
$Post_2$-$Post_1$	-0.4603	1.424	0.2667	1.388	-2.53*

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* p = <.05.

** p = <.01.

TABLE XXI

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT TO FOLLOW DIRECTIONS

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.1806	1.294	-0.1892	1.221	1.57
$Post_2$-Pre	0.2266	1.421	-0.6000	1.567	2.81**
$Post_2$-$Post_1$	0.0397	1.155	-0.5000	1.333	2.23*
Eager-Reluctant					
$Post_1$-Pre	0.2097	1.609	0.1351	1.437	0.26
$Post_2$-Pre	0.1719	1.651	-0.1333	1.776	0.90
$Post_2$-$Post_1$	-0.0317	1.193	-0.3333	1.863	0.85
Practical-Theoretical					
$Post_1$-Pre	-0.0069	1.335	-0.0270	2.101	0.06
$Post_2$-Pre	-0.1016	1.279	-0.1000	2.023	0.00
$Post_2$-$Post_1$	-0.1032	1.301	0.0667	1.982	-0.45
Valuable-Worthless					
$Post_1$-Pre	0.0000	1.044	0.1892	1.450	-0.75
$Post_2$-Pre	-0.1563	0.959	0.0333	1.273	-0.77
$Post_2$-$Post_1$	-0.1508	1.051	-0.1333	1.358	-0.08
Domineering-Lax					
$Post_1$-Pre	0.3099	1.677	-0.2433	1.498	1.83
$Post_2$-Pre	0.1496	1.496	-0.5667	1.501	2.36*
$Post_2$-$Post_1$	-0.1440	1.360	-0.1667	1.315	0.08
Meaningful-Meaningless					
$Post_1$-Pre	0.0556	1.139	0.0811	1.422	-0.12
$Post_2$-Pre	-0.1328	0.999	0.0000	1.259	-0.62
$Post_2$-$Post_1$	-0.1190	1.211	-0.0667	1.484	-0.20
Active-Passive					
$Post_1$-Pre	0.2222	1.864	-0.1351	2.162	1.01
$Post_2$-Pre	-0.0781	2.049	0.0333	1.903	-0.27
$Post_2$-$Post_1$	-0.2778	1.765	-0.0667	1.680	-0.59
Useful-Useless					
$Post_1$-Pre	0.1469	1.337	0.1351	1.456	0.05
$Post_2$-Pre	-0.0945	1.601	-0.0667	1.507	-0.09
$Post_2$-$Post_1$	-0.2460	1.325	-0.2333	1.165	-0.05
Good-Bad					
$Post_1$-Pre	0.0000	1.134	-0.3243	1.180	1.54
$Post_2$-Pre	-0.0781	1.098	-0.5000	0.861	1.97*
$Post_2$-$Post_1$	-0.0476	1.094	-0.2000	1.562	0.51
Pleasant-Unpleasant					
$Post_1$-Pre	0.0000	1.444	0.1892	1.411	-0.71
$Post_2$-Pre	-0.2344	1.590	-0.1333	1.697	-0.31
$Post_2$-$Post_1$	-0.1905	1.446	-0.4000	1.545	-0.70
Strong-Weak					
$Post_1$-Pre	-0.2448	1.530	-0.1081	1.822	-0.46
$Post_2$-Pre	-0.1563	1.529	-0.1333	1.479	-0.07
$Post_2$-$Post_1$	0.0080	1.467	-0.0333	1.752	0.08
Varied-Monotonous					
$Post_1$-Pre	0.2676	1.856	0.5135	1.758	-0.73
$Post_2$-Pre	0.1260	1.628	0.1333	1.697	-0.78
$Post_2$-$Post_1$	-0.5200	1.659	-0.7000	1.685	0.53

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* P = <.05.

** P = <.01.

TABLE XXII

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT ACHIEVEMENT

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.4444	1.457	0.3784	1.361	0.25
$Post_2$-Pre	0.3906	1.579	0.2333	1.591	0.49
$Post_2$-$Post_1$	-0.5556	1.444	0.0333	1.790	-0.29
Eager-Reluctant					
$Post_1$-Pre	0.2361	1.333	0.0541	1.527	0.72
$Post_2$-Pre	0.1406	1.462	0.5667	1.569	-1.42
$Post_2$-$Post_1$	-0.1270	1.380	0.5333	1.306	-2.38*
Practical-Theoretical					
$Post_1$-Pre	0.2624	1.948	0.5946	1.863	-0.93
$Post_2$-Pre	0.2441	1.905	0.2667	2.033	-0.06
$Post_2$-$Post_1$	-0.1587	1.656	-0.1333	1.925	-0.07
Valuable-Worthless					
$Post_1$-Pre	0.1944	0.984	-0.1081	1.220	1.58
$Post_2$-Pre	0.0547	0.983	-0.3000	1.442	1.28
$Post_2$-$Post_1$	-0.1746	1.028	-0.1000	0.960	-0.36
Domineering-Lax					
$Post_1$-Pre	0.1761	1.647	-0.1081	1.822	0.91
$Post_2$-Pre	-0.2205	1.408	-0.1333	1.814	-0.29
$Post_2$-$Post_1$	-0.3360	1.576	-0.0333	1.829	-0.92
Meaningful-Meaningless					
$Post_1$-Pre	0.2222	1.167	-0.0541	1.153	1.29
$Post_2$-Pre	-0.0078	0.976	-0.3333	1.647	1.04
$Post_2$-$Post_1$	-0.2302	1.104	-0.2000	1.400	-0.13
Active-Passive					
$Post_1$-Pre	0.1597	1.891	-0.0270	1.536	0.56
$Post_2$-Pre	0.2813	1.711	0.0000	1.174	1.07
$Post_2$-$Post_1$	0.1032	1.579	0.1000	1.348	0.01
Useful-Useless					
$Post_1$-Pre	0.2222	1.356	-0.2162	1.902	1.32
$Post_2$-Pre	0.0313	1.408	0.1333	1.252	-0.36
$Post_2$-$Post_1$	-0.2540	1.193	-0.4000	1.545	-2.17*
Good-Bad					
$Post_1$-Pre	0.0486	1.276	-0.1081	1.329	0.66
$Post_2$-Pre	0.0156	1.190	-0.1333	1.479	0.59
$Post_2$-$Post_1$	-0.0714	1.140	0.0333	1.497	-0.36
Pleasant-Unpleasant					
$Post_1$-Pre	0.2028	1.340	0.0000	1.247	0.83
$Post_2$-Pre	0.0157	1.285	-0.1333	1.737	0.44
$Post_2$-$Post_1$	-0.1984	1.028	-0.0667	1.363	-0.50
Strong-Weak					
$Post_1$-Pre	0.0833	1.456	-0.0541	1.682	0.50
$Post_2$-Pre	0.1250	1.542	0.2000	1.349	-0.25
$Post_2$-$Post_1$	0.0079	1.456	0.2667	1.507	-0.87
Varied-Monotonous					
$Post_1$-Pre	0.0139	1.274	0.0270	1.500	0.17
$Post_2$-Pre	0.2109	1.445	-0.0667	1.639	-0.48
$Post_2$-$Post_1$	-0.2778	1.495	0.1333	1.592	-0.47

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, and $Post_2$ = $Posttest_2$.

* P = < .05.

** P = < .01.

TABLE XXIII

SEMANTIC DIFFERENTIAL CONCEPT PROFILE AND t-TEST FOR THE CONCEPT STICK-TO-ITIVE-NESS

Polar Adjectives/Test[a]	Experimental Mean Gain	Experimental SD	Control Mean Gain	Control SD	t
Kind-Cruel					
$Post_1$-Pre	0.1631	1.427	0.3243	1.634	-0.59
$Post_2$-Pre	-0.0240	1.563	0.4000	1.673	-1.32
$Post_2$-$Post_1$	-0.1270	1.575	0.0333	1.273	-0.52
Eager-Reluctant					
$Post_1$-Pre	0.3050	1.572	0.0541	1.373	0.89
$Post_2$-Pre	0.0800	1.644	0.0667	1.721	0.04
$Post_2$-$Post_1$	-0.1270	1.649	-0.0667	1.230	-0.19
Practical-Theoretical					
$Post_1$-Pre	0.1511	1.546	-0.1892	1.221	1.24
$Post_2$-Pre	0.0320	1.379	-4.0000	1.545	1.50
$Post_2$-$Post_1$	-0.0800	1.517	-0.0333	1.497	-0.15
Valuable-Worthless					
$Post_1$-Pre	0.1844	1.169	-0.3514	1.160	2.49**
$Post_2$-Pre	0.0960	1.279	-0.6667	1.213	2.96**
$Post_2$-$Post_1$	-0.0640	1.038	-0.1000	1.062	0.17
Domineering-Lax					
Post1-Pre	-0.1295	1.527	-0.0270	1.500	-0.56
$Post_2$-Pre	-0.3360	1.586	-0.4000	1.714	0.20
$Post_2$-$Post_1$	-0.1613	1.445	-0.4000	1.248	0.83
Meaningful-Meaningless					
$Post_1$-Pre	0.3071	1.269	0.0541	1.129	1.10
$Post_2$-Pre	0.0565	1.345	-0.5333	1.479	2.11*
$Post_2$-$Post_1$	-0.1840	1.187	-0.4667	1.502	1.11
Active-Passive					
$Post_1$-Pre	0.1429	1.603	0.2432	1.606	-0.34
$Post_2$-Pre	0.2000	1.486	-0.1000	1.882	0.94
$Post_2$-$Post_1$	0.0640	1.564	-0.2667	1.413	1.06
Useful-Useless					
$Post_1$-Pre	0.2270	1.416	-0.2973	1.450	1.99*
$Post_2$-Pre	0.2000	1.431	-0.5333	1.358	2.54**
$Post_2$-$Post_1$	-0.0240	1.467	-0.0667	1.929	0.11
Good-Bad					
Post1-Pre	0.1986	1.272	-0.4054	1.443	2.50**
$Post_2$-Pre	0.1280	1.263	-0.4667	1.432	2.26*
$Post_2$-$Post_1$	-0.0560	1.364	0.0667	1.596	-0.43
Pleasant-Unpleasant					
$Post_1$-Pre	0.2837	1.592	0.2162	1.584	0.23
$Post_2$-Pre	-0.0240	1.614	-0.4333	1.524	1.26
$Post_2$-$Post_1$	-0.3120	1.472	-0.5333	1.167	0.77
Strong-Weak					
$Post_1$-Pre	0.2624	1.505	0.0541	1.545	0.75
$Post_2$-Pre	0.1360	1.562	0.1333	1.871	0.01
$Post_2$-$Post_1$	-0.1360	1.531	0.2000	1.627	-1.07
Varied-Monotonous					
$Post_1$-Pre	0.3404	1.832	0.2222	1.987	0.34
$Post_2$-Pre	0.1200	1.739	-0.6000	1.754	2.03*
$Post_2$-$Post_1$	-0.2560	1.675	-0.7931	1.820	1.53

[a]Tests refer to the time of testing: Pre = Pretest, $Post_1$ = $Posttest_1$, $Post_2$ = $Posttest_2$.

* p = < .05.

** p = < .01.

The concept Personalized Teaching (see Table VII, page 59) also had three significant differences--one, Practical-Theoretical, at the 0.01 level and two at the 0.05 level, between pre- and posttesting. In the following nine months the number of scales showing significance increased to five, four of which were at the 0.01 level. These scales were Practical-Theoretical, Useful-Useless, Good-Bad, and Pleasant-Unpleasant.

Learning Styles (Table VIII, page 60) initially revealed no significant differences on nine scales. Of the three significant scales, two at the 0.01 (Valuable-Worthless and Active-Passive), only one remained significant nine months from the pretest. Between $posttest_1$ and $posttest_2$ there was a significant (0.05) reversal favoring the control group in the amount of gain on one scale (Valuable-Worthless) although the mean value for the experimental group was still much higher than the control.

By far the greatest effect that the conference had on the participants was for the concept Open Classroom (see Table IX, page 61). Although this topic was one of the least highly regarded concepts in both the experimental and control groups, the experimental conference participants made significantly greater gains than the control participants in eight scales, seven at the 0.01 level, from pretest to $posttest_1$ (which measures the immediate effect of the conference) and in eight scales from pretest

to $posttest_2$ (which measures the effect of the conference over time), five at the 0.01 level. Seven scales exhibited differences in the two groups at both the conclusion of the conference and after nine months. They were Kind-Cruel (.01, .01), Valuable-Worthless (.01 and .05), Meaningful-Meaningless (.01, .01), Active-Passive (.05, .01), Useful-Useless (.01, .01), Good-Bad (.01 and .05), and Pleasant-Unpleasant (.01, .01). There were no gains or losses from $posttest_1$ to $posttest_2$.

Analysis of Concepts Pertaining to Evaluative Strategies

For the concept Continuous Progress (Table X, page 62) there was a single significant gain at the 0.05 level on each of the three testings (on two of the testings the adjective pair was Domineering-Lax).

Only one significant change at the 0.05 level was computed for the concept Program Evaluation (see Table XI, page 63). This positive difference was from pretest to $posttest_1$ for the scale Meaningful-Meaningless.

Assessing Individual Needs (Table XII, page 64) also had one significant change (0.01) in favor of the experimental group on the scale Meaningful-Meaningless, but this was from pretest to $posttest_2$, indicating a lasting effect in attitudes concerning the assessment of the needs of students. Although there was a high positive difference from pretest to $posttest_1$ scores in favor of

the experimental group, this difference was not significant at the 0.05 level.

The concept of Systematic Planning (Table XIII, page 65) had no significant differences between the control and experimental groups.

Analysis of Preassessed Terms

Of the three preassessed topics, Motivation, Failure, and Methods, no differences were expected. Only one concept Motivation (see Table XIV, page 66) showed no significant differences over all testings. It consistently gave high positive scores which is what it was anticipated to give. Methods (Table XV, page 67) had only two significant differences (0.05 level) which were from pretest to $posttest_1$. No other differences were noted for this concept. Means were higher than expected for this concept for both groups, apparently Methods (plural) was perceived as a more positive concept than the conference planning team had anticipated. There were four significant differences for the concept Failure (Table XVI, page 68) between pretest and $posttest_1$ which were in favor of the control group. Failure had three significant differences between the $post_1$- and $posttest_2$, two of which were at the 0.01 level in favor of the experimental group. These were Eager-Reluctant and Kind-Cruel. There were no differences between pretest and

posttest$_2$ on the concept Failure. Mean scores for Failure were in the expected direction being very low.

Analysis of Concepts Relating to Participant Action

Of the seven action concepts, two--Organized (Table XVII, page 69) and Innovation (Table XVIII, page 70)--exhibited no significant differences for any scale on any testing.

To Help (Table XIX, page 71) had two 0.05 level significant differences between the pretest and posttest$_1$, and two, one at the 0.05 and one at the 0.01 level, significant differences between the pretest and posttest$_2$. The 0.01 difference was for the scale Pleasant-Unpleasant; Kind-Cruel, Domineering-Lax, and Varied-Monotonous were the significant scales at 0.05.

The concept To Be Helped (see Table XX, page 72) showed three scales with significant differences at the 0.05 level or more at the conclusion of the conference. The scale Kind-Cruel was significant at the 0.01 level. A significant difference which favored the control group was found between the posttest$_1$ and posttest$_2$ for one scale (Varied-Monotonous) at the 0.05 level.

Nine scales which did not reveal significant differences for the concept To Follow Directions (Table XXI, page 73) were computed between pretest and posttest$_2$) and eleven between the posttest$_1$ and posttest$_2$. The polar

adjective Kind-Cruel was the only 0.01 level significant difference.

For the concept Achievement (see Table XXII, page 74), two scales revealed significant differences at the 0.05 level between $posttest_1$ scores and $posttest_2$ scores.

The action topic with the most differences was Stick-to-itive-ness (Table XXIII, page 75). There were three scales showing significance, two at the 0.01 level, between the pretest and $posttest_1$ and five scales between pretest and $posttest_2$, two of which were at the 0.01 level. Gain scores were highly grouped on this concept. For the scales Valuable-Worthless and Useful-Useless, the 0.01 level of significance was reached during the difference between the $post_1$- and pretests and the $post_2$- and pretests. The Good-Bad scale dropped from the 0.01 level to the 0.05 level over time. There were no significant differences between the two groups from $posttest_1$ and $posttest_2$.

Summary

An examination of Figure 2 shows the comparison for the number of significant differences found in Tables VI through XXIII, pages 58 through 75. There were 33 scales reaching significance as a result of the conference (difference between pretest and $posttest_1$). Thirty-one scales indicated differences between the pretest and

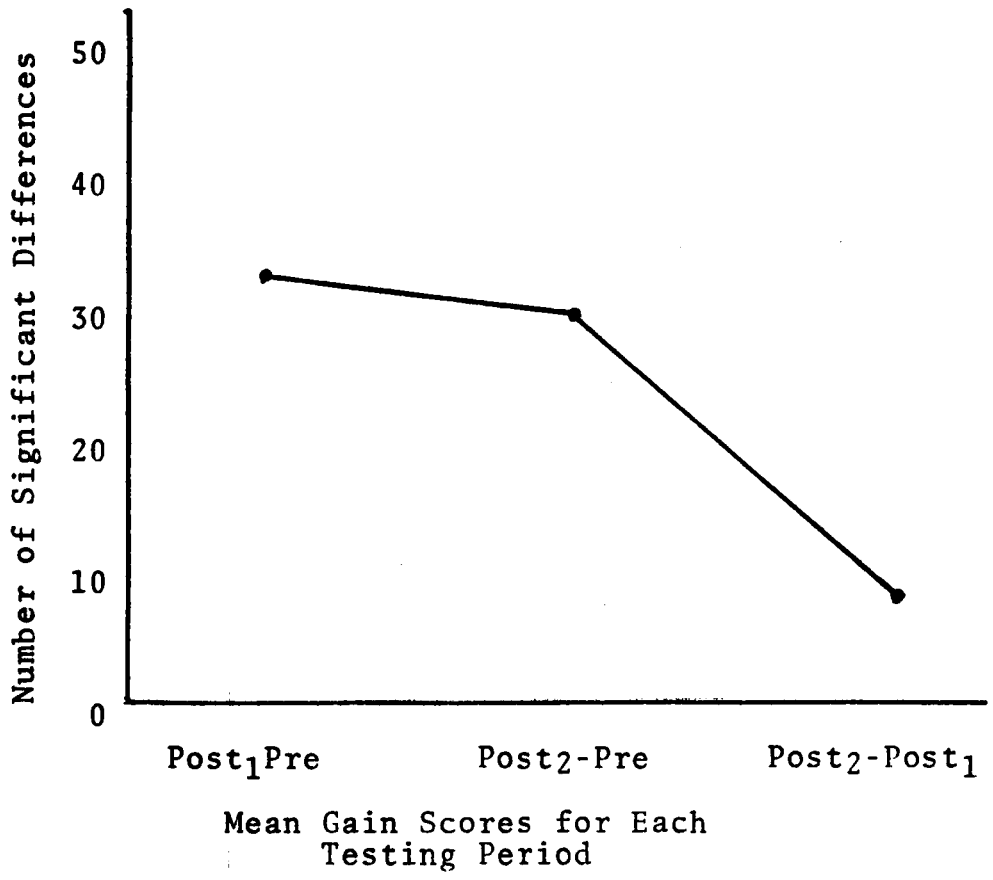


Figure 2. A comparison of the number of significant differences between the pretest, posttest$_1$, and posttest$_2$.

posttest$_2$, fourteen of which exhibited stability over the nine-month period. Only nine scales showed differences from posttest$_1$ to posttest$_2$.

Table XXIV is a summary of the significance level for each polar adjective. Six scales reached significance more than five times. Of these six scales, five (Valuable-Worthless, Kind-Cruel, Meaningful-Meaningless, Useful-Useless, and Good-Bad) were in the evaluative dimension. The other highly discriminatory scale was Active-Passive, an adjective in the activity dimension (Osgood, 1957). The potency dimension yielded poor results in discriminating differences between groups although this was somewhat expected since no scale with high factor loadings could be found to fit the research purposes with the exception of Strong-Weak which was the poorest adjective scale in discriminating between groups.

Mean scores for attitudes generally exhibited an increase from pretest to posttest$_1$ showing the effects that practice can have as mentioned by Guilford (1965, p. 197). After nine months the mean posttest$_2$ scores revealed a general decline from the posttest$_1$ scores. This reversion in attitudinal scores to an originally held position is typical as reported by Lieberman, et al. (1972, pp. 48-49), and Sales (1971). Attitudes can be changed readily for a short period of time; however, the majority of atti-

TABLE XXIV

SUMMARY OF SIGNIFICANCE LEVELS FOR EACH POLAR ADJECTIVE

Polar Adjective	$Posttest_1$-Pretest Significance		$Posttest_2$-Pretest Significance		$Posttest_2$-$Posttest_1$ Significance		Totals Reaching Significance	
	0.05	0.01	0.05	0.01	0.05	0.01	0.05	0.01
Kind-Cruel	3	2	1	2	1	1	5	5
Eager-Reluctant	2	0	0	0	1	1	3	1
Practical-Theoretical	1	1	1	2	0	0	2	3
Valuable-Worthless	2	3	3	1	1	0	6	4
Domineering-Lax	3	0	1	0	1	0	5	0
Meaningful-Meaningless	2	1	1	3	0	0	3	4
Active-Passive	3	1	1	1	0	0	4	2
Useful-Useless	2	1	1	3	1	0	4	4
Good-Bad	0	2	4	1	1	0	5	3
Pleasant-Unpleasant	1	1	0	3	0	0	1	4
Strong-Weak	1	0	0	0	0	0	1	0
Varied-Monotonous	0	1	2	0	1	0	3	1
Subtotals	20	13	15	16	7	2	42	31
Totals	33		31		9		73	

tudes show a distinct persistence over many years. Wolaver (1964) and Robinson (1971) found that attitudes show stability over time. Even though attitudes were changed as a result of the conference on individualizing and personalizing instruction, a regression followed after nine months which left many attitude scores lower than $posttest_1$ scores, but above pretest scores.

For Hypothesis 1 which indicates that there will be no differences in the groups between pretest and $posttest_1$ scores, the null hypothesis will have to be rejected on 33 of the 228 variables. Since eleven variables could be expected to occur by chance, there is sufficient reason to reject the null hypothesis. There is a significant difference in the attitudinal structure of the two groups.

The second hypothesis states that there will be no difference between pretest and $posttest_2$ scores in the two groups. The null hypothesis will have to be rejected on the basis of 31 scales reaching significance.

Hypothesis three states that there will be no difference between $posttest_1$ and $posttest_2$. Only nine scales reached significance whereas eleven could be expected by chance alone. Therefore the null hypothesis is not rejected for hypothesis three.

The Edwards Personal Preference Schedule was used to determine personality differences in the two groups. Only two of the fifteen personality traits (see Table XXV) indicated significance. The experimental group was more deferent at the 0.05 level than the control group. The experimental group, however, was less aggressive at the 0.01 level than the control group. The sixteenth item in Table XXV is the consistency with which respondents marked the schedule. Both sets of respondents were equally consistent in marking. Since one significant difference can be expected by chance the null hypothesis concerning differences in personalities between the two groups will be rejected.

TABLE XXV

t-TEST BETWEEN GROUPS FOR THE EDWARDS PERSONAL PREFERENCE SCHEDULE

Characteristics	Experimental Mean	Experimental SD	Control Mean	Control SD	t
Achievement	16.0667	4.317	15.8000	3.114	-0.13
Deference	14.2000	3.028	11.0000	2.345	-2.14*
Order	11.1333	3.998	12.0000	6.124	0.37
Exhibition	12.0000	3.485	12.8000	5.450	0.39
Autonomy	11.9333	4.096	12.6000	5.941	0.28
Affiliation	17.4667	3.980	15.2000	3.768	-1.12
Intraception	18.7333	4.334	15.6000	3.715	-1.44
Succorance	12.1333	4.373	11.8000	4.764	-0.14
Dominance	13.4000	3.924	13.6000	2.510	0.11
Abasement	11.1333	4.172	13.4000	3.362	1.10
Nurturance	15.8000	4.709	17.0000	5.612	0.47
Change	15.8667	3.925	12.8000	4.324	-1.48
Endurance	14.8000	4.931	12.0000	4.743	-1.11
Heterosexuality	14.0667	3.973	17.6000	4.615	1.66
Aggression	11.8667	1.885	15.2000	2.387	3.22**
Consistency	6.8667	2.326	6.6000	2.074	-0.23

* P = < .05.

** P = < .01.

CHAPTER IV

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

I. SUMMARY

Purpose

This study evaluates the stability of attitudes resulting from a summer conference entitled "Towards Individualized and Personalized Instruction" held in the summer, 1974. In addition, the usefulness of attitudinal information collected at the immediate conclusion of the conference was compared to attitudes collected nine months later.

Procedures

The attitudinal data were gathered using the semantic differential technique to develop an instrument with eighteen concepts and twelve polar adjective scales. The conference planning team along with the experimenter developed the instrument to parallel topics of the conference. The procedures outlined in Heise (1970) were followed in preparing the semantic. A Non Equivalent Control Group Design was employed according to the procedures in Campbell and Stanley (1963).

Collection of the Data

The instrument was administered on a pretest and posttest fashion with a delayed second posttest coming nine months after the first posttest. The delayed posttest was mailed during March, 1975 to 146 participants of the conference who completed pre- and $posttest_1$. One hundred and twenty-nine were returned for an 88.3 percent return rate for the experimental group. Of the 37 participants in the control group who completed pre- and $posttest_1$, 30 returned the mailed delayed posttest for an 81.0 percent return rate for the control group.

Methods Used to Analyze the Data

Differences in the two groups were analyzed by use of an independent samples t-test based on gain scores. The statistics were computed using the SPSS program for the t-test.

To analyze the differences in the two groups in personality variables, the Edwards Personal Preference Schedule (EPPS) was administered (along with the delayed posttest) to a 10 percent random sample in both groups. Differences on the EPPS were again determined by a t-test for independent samples.

Results

In testing Hypothesis 1, evidence was presented in Tables VI through XXIII, pages 58 through 75, which indicated that attitudes towards certain concepts can be altered by the conclusion of the conference on "Towards Individualized and Personalized Instruction." Of the 33 significant differences at the end of the conference, 29 gain scores were positive in favor of the experimental group. All four significant positive gain scores in favor of the control group concerned the concept Failure.

The data concerning Hypothesis 2 in Tables VI through XXIII, examining the difference of scores from pretest to a posttest nine months after the summer conference, support the contention that attitudes toward certain concepts can be changed over a relatively long period of time as a result of a short experimental treatment. Of the 31 significant positive changes, all favor the experimental group. Fourteen of the 33 attitudes changed during the workshop exhibited a continued significant difference after nine months, indicating the stability of one-half of the initial attitudinal changes.

The change in attitudes from the conclusion of the conference ($posttest_1$) to testing nine months later ($posttest_2$) is the proposition of Hypothesis 3.

The actual data (see Tables VI through XXIII) supporting the differences in the control and experimental groups showed that nine scales acquired significance. Since eleven scales can be expected to be significant by chance, the null hypothesis cannot be rejected.

Hypothesis 4 examined the differences in personality traits of the two groups. Since two traits reached significance where one could be expected by chance alone, the conclusiveness of no personality differences is somewhat questionable. Therefore, the null hypothesis is rejected, but further research is suggested.

An examination of other personal attributes and characteristics (Appendix C) showed many similarities and some differences, further representing the approximate uniformity of the two populations.

II. CONCLUSIONS

1. Attitudes were changed as a result of the conference on individualized and personalized instruction.

2. Attitudes can be altered as a result of a short summer conference.

3. Most of the attitude changes as a result of the conference remained stable after a nine-month period.

4. Other attitudes that were changed during

the conference reverted back to originally-held positions.

5. Evaluative polar adjectives were a better tool for determining differences among groups than either the activity or potency adjectives.

6. Concepts varied in strength of responses, some receiving high positive scores, such as Motivation and To Help, while some received low scores such as Failure and Open Classroom.

7. Concepts valuable in discriminating between the experimental and the control group were Open Classroom, Independent Study, Personalized Teaching, and Stick-to-itiveness.

8. Some concepts were useless in determining differences between the experimental and control groups, such as Systematic Planning and Innovation.

9. The experimental group, with a higher percentage of principals and administrators than teachers (37.0 percent vs. 10.8 percent) and with an older mean age (77.9 percent older than 30 vs. 64.9 percent older than 30) than the control group, had personality traits that were more deferent and less aggressive.

10. Participants in both summer conferences were a highly communicative group, reading, hearing, seeing, studying and traveling to a great extent.

III. IMPLICATIONS

1. During the sixties the federal government spent millions of dollars to upgrade the quality of teaching at the elementary, secondary, and college levels with summer conferences, workshops, and institutes. Teachers continue to upgrade their skills in such summer courses, but to what effect? This study has demonstrated that an intensive summer conference dealing with a specific topic can not only effect attitude change at the conclusion of the conference, but also that the attitudes changed can remain after nine months. Therefore, such short summer courses are worthwhile in effecting change in the affective domain.

2. Attitude measurement at the immediate conclusion of a program generally elicits only the initial participant reaction to the program and not the long-term effect, since there was a difference in the findings of the present study in the attitudinal structure of the two groups nine months after the conference that was not apparent at the immediate conclusion of the two conferences. As a result of these findings, there is a need to distinguish, in evaluative reports, the differences between immediate effects and long-term or permanent effects on the attitudes of conference participants. Evaluations that report only the immediate effects never resolve the

stability of these short-term effects, nor do they reveal any maturational effects that need time in order to develop. In this regard many real effects are probably not assessable until long after the treatment which is in agreement with the work of Miles (1962, p. 216) and others.

3. Because of the inclusion of public school educators, all of whom volunteered for the experience, it is assumed that other groups who might volunteer for this type or similar experiences would also experience significant positive changes in attitudes towards the topic chosen for the conference. Therefore, private or parochial educators should be affected similarly. Groups that are non volunteers such as In-Service groups of all kinds might not benefit in a similar manner to the experimental group. Other non volunteering groups such as personnel development conferences in business, short courses for prison inmates, or similar programs for mental patients might not be effective in changing attitudes as certain covert manifestations may be operating.

4. Since a summer conference that intensively covers a single topic such as individualizing instruction can affect attitudes, it is assumed that other types of summer conferences, workshops, and institutes

can also alter attitudes in a specified manner. Sufficient planning and evaluation procedures should insure such effects.

5. It appears that when educators leave an environment that offers support and reinforcement (in this study the conference) for believing in certain ways, the strength of their attitudes declines. This dilution of feelings can be kept strong by including a system of positive reinforcement in one's environment (see Touzel, 1975).

6. The conclusion of this study was that a short summer conference can have a definite effect on attitudes, but what kind of effect does such a conference have on subsequent behaviors? In a separate study by the investigator, Touzel (1975) found that certain procedures can effect a change in behaviors, but that this required a unified effort from the school system, principal, and a positive informal working relationship among the people involved. Such findings suggest a relationship between the environmental climate educators work in and their behaviors.

IV. RECOMMENDATIONS

Implementation

1. It is recommended that to supply objective information for decision-making that both long- and

short-term data be collected to evaluate the worth of summer conferences and workshops before changes or improvements are implemented.

2. The evaluative dimension of Osgood's semantic differential be used so that optimal useage of an instrument can be made.

Further Research

1. Additional longitudinal studies of longer duration should be tried to determine the further stability of attitudes as a result of short conferences.

2. A comparison of conference evaluations in the affective domain from voluntary and non voluntary groups should be conducted to determine similarities and differences in the results.

3. Age, sex, and job position characteristics should be examined to discover if there is any relationship between the attributes and personality traits of deference and aggressiveness.

4. Further research should continue as to the effect that personality variables have on the attitudinal evaluation of short programs.

5. Additional investigation of the personality and other attributes of educators who voluntarily return for personal growth should be compared with those educators who have absented themselves from self improvement.

6. Other evaluative adjectives might be tried to improve the discriminatory value of the semantic differential technique.

7. Research into the type of concepts covered in a conference that should be used in an instrument would improve evaluations.

8. The use of other attitudinal instruments, such as Likert or Guttman scales, should be tried so as to assess the differences in scores that these different instruments offer.

9. Studies should be designed to ascertain the congruence between attitudes held and actual behavior as a result of a short conference.

10. The relationship between cognitive, affective, and behavioral outcomes of short conferences should be researched further.

11. The environmental causes of why attitudes about certain educational ideas are reinforced in some cases and not in other cases should be investigated.

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APPENDIXES

APPENDIX A

SEMANTIC DIFFERENTIAL

Name_____

INSTRUCTIONS

In filling out the following form, remember that your first impressions are needed. Please place your mark indicating the strength of your feeling. If for example you feel very approving about teacher salaries, mark as follows:

Teacher Salaries

Approving : X (1) : ___ (2) : ___ (3) : ___ (4) : ___ (5) : ___ (6) : ___ (7) : Disapproving

A very disapproving feeling would be marked above seven. If you feel moderately approving about teacher salaries, mark as follows:

Teacher Salaries

Approving : ___ (1) : X (2) : ___ (3) : ___ (4) : ___ (5) : ___ (6) : ___ (7) : Disapproving

A moderately disapproving feeling would be marked above six. A slightly approving feeling would be marked thusly:

Teacher Salaries

Approving : ___ (1) : ___ (2) : X (3) : ___ (4) : ___ (5) : ___ (6) : ___ (7) : Disapproving

A slightly disapproving feeling would be marked above five.

If you were not concerned at all about teachers' salaries or if you had perfectly neutral feelings, you would mark the middle or fourth position.

The following page is an example of the complete instrument used to collect the attitudinal data. There were 17 additional pages which were identical with the exception of the concept listed at the top of the page. The 17 additional concepts were Independent Study, Learning

Styles, Motivation, Program Evaluation, Achievement, Continuous Progress, To Help, Methods, Organized, To Follow Directions, Systematic Planning, Innovation, Open Classroom, To Be Helped, Failure, Assessing Individual Needs, Stick-to-itive-ness, and Personalized Teaching.

Cruel	:____:____:____:____:____:____:____:	Kind
Reluctant	:____:____:____:____:____:____:____:	Eager
Practical	:____:____:____:____:____:____:____:	Theoretical
Valuable	:____:____:____:____:____:____:____:	Worthless
Domineering	:____:____:____:____:____:____:____:	Lax
Meaningful	:____:____:____:____:____:____:____:	Meaningless
Passive	:____:____:____:____:____:____:____:	Active
Useless	:____:____:____:____:____:____:____:	Useful
Good	:____:____:____:____:____:____:____:	Bad
Pleasant	:____:____:____:____:____:____:____:	Unpleasant
Weak	:____:____:____:____:____:____:____:	Strong
Varied	:____:____:____:____:____:____:____:	Monotonous

APPENDIX B

CHARACTERISTICS OF PARTICIPANTS

Name_____

Position_____
School_____
Address_____
_____
zip

School System_____
_____
City or County State

1. Academic Record (please check)
___ B.S. (B.A., etc.)
___ M.S. (etc.)
___ M.S. + 45 (or ED.S.)
___ ED.D. (PH.D.)
___

2. Time since last college coursework
___ less than 6 months
___ less than 1 yr.
___ between 1 & 2 yrs.
___ between 2 & 4 yrs.
___ greater than 4 yrs.
___

3. Educational Experience (teaching & admin.)
___ less than 4 yrs.
___ between 4 & 7 yrs.
___ between 8 & 11 yrs.
___ between 12 & 15 yrs.
___ between 16 & 20 yrs.
___ greater than 20 yrs.
___

4. Age
___ less than 25 yrs. old
___ between 25 & 29 yrs.
___ between 30 & 34 yrs.
___ between 35 & 39 yrs.
___ between 40 & 44 yrs.
___ between 45 & 49 yrs.
___ more than 49
___

5. Please list any professional educational magazines that you read regularly:
_____ _____
_____ _____
_____ _____

6. Please list any other magazines that you read regularly:
_____ _____
_____ _____

7. How many newspapers do you read regularly? ___ How often do you read it (them)?
___

8. Do you listen to the news on radio? Yes___ No___
On TV? Yes___ No___

9. Please list other programs you listen to regularly on radio
_____ _____
On TV_____
_____ _____

10. Please give the names of any professional growth activities that you have participated in during the past two years: a) workshops or conferences
_____ _____
_____ _____

10. b) professional meetings
    1. Local _____
    2. Regional _____
    3. National _____

    c) Travel experiences
    _____
    _____
    _____
    _____

APPENDIX C

TABLE XXVI

PROFESSIONAL READING

Type of Journal		Experimental Group Abs. Freq.	Experimental Group Rel. Freq.		Control Group Abs. Freq.	Control Group Rel. Freq.
General Research or Academic Educational Journals		9	2.1		1	1.2
General Interest Education Journals		31	7.1		2	2.4
General Elementary Journals		128	29.4		27	32.1
General Secondary Journals		14	3.2		17	20.2
Journals in Areas of Specific Professional Interest		26	6.0		3	3.6
Journals of Educational Administration Interest		42	9.6		0	0
State Education Journals		76	17.5		23	27.4
Specific Outstanding Journals of Wide Readership		103	23.7		11	13.1
Educational Forum	4			2		
Educational Leadership	10			1		
NEA Journal	65			5		
Phi Delta Kappan	18			3		
Miscellaneous Journals		6	1.4		0	0
Totals		435	100%		84	100%

TABLE XXVII

TOTAL NUMBER OF EDUCATIONAL JOURNALS READ

Number Read	Experimental Group Abs. Freq.	Experimental Group Rel. Freq. (Percent)	Control Group Abs. Freq.	Control Group Rel. Freq. (Percent)
No magazines listed	6	4.1	1	2.7
One or two magazines read	58	39.7	19	51.3
Three or four magazines read	55	37.6	14	37.8
Five or more magazines read	25	17.2	3	8.1
Missing Responses	2	1.4	0	0.0
Totals	146	100.0	37	100.0

TABLE XXVIII

GENERAL MAGAZINES READ

Type of Magazine	Experimental		Control	
	Abs. Freq.	Rel. Freq.	Abs. Freq.	Rel. Freq.
Consumer and Business Magazines	9	2.5	3	3.1
Gardening Magazines	3	0.8	3	3.1
General Interest Magazines	108	30.0	20	20.6
Mechanical Magazines	3	0.8	1	1.0
Men's Magazines	5	1.4	2	2.0
Nature Magazines	26	7.2	30	30.9
News Magazines	84	23.3	11	11.4
Parent's Magazines	5	1.4	1	1.0
Religious Publications	6	1.7	0	0.0
Science and Technology Magazines	4	1.1	5	5.2
Sports, Hunting, and Outdoor Magazines	18	5.0	7	7.2
Women's Magazines	83	23.1	13	13.5
Miscellaneous Magazines	6	1.7	1	1.0
Totals	360	100.0	97	100.0

TABLE XXIX

TOTAL NUMBER OF GENERAL MAGAZINES READ

Number Read	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
No magazines read	19	13.0	2	5.4
One or two magazines read	47	32.2	15	40.5
Three or four magazines read	64	43.8	16	43.2
Five or more magazines read	16	11.0	4	10.8
Missing responses	0	0.0	0	0.0
Totals	146	100.0	37	100.0

TABLE XXX

NUMBER OF NEWSPAPERS READ

Number Read	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
No newspapers read	0	0	2	5.4
One newspaper read	53	36.3	11	29.7
Two newspapers read	72	49.3	22	59.5
Three or more newspapers read	21	14.4	2	5.4
Missing responses	0	0.0	0	0.0
Totals	146	100.0	37	100.0

TABLE XXXI

FREQUENCY OF NEWSPAPER READING

Frequency	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
Weekly	10	6.8	3	8.1
Biweekly	8	5.5	3	8.1
Daily	127	86.9	29	78.4
Missing responses	1	0.7	2	5.4
Totals	146	100.0	37	100.0

TABLE XXXII

LISTENING TO RADIO NEWS

Radio Listening	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
Do not listen to radio news	10	6.8	5	13.5
Do listen to radio news	135	92.5	32	86.5
Missing responses	1	0.7	0	0.0
Totals	146	100.0	37	100.0

TABLE XXXIII

WATCHING TELEVISION NEWS

TV Viewing	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
Do not see television news	2	1.4	2	5.4
Do see television news	143	97.9	34	91.9
Missing response	1	0.7	1	2.7
Totals	146	100.0	37	100.0

TABLE XXXIV

TYPE OF RADIO LISTENING

Type of Program	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
Music	42	73.7	15	71.4
News and Information	8	14.0	1	4.8
Religious	3	5.3	1	4.8
Sports	1	1.7	2	9.5
Variety Entertainment	3	5.3	2	9.5
Totals	57	100.0	21	100.0

TABLE XXXV

NUMBER OF RADIO PROGRAMS TO WHICH EACH PARTICIPANT LISTENS

Number Heard	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
Listen to no radio programs	92	63.0	18	48.6
Listen to one radio program	41	28.1	17	45.9
Listen to two radio programs	8	5.5	2	5.4
Listen to three or more radio programs	1	0.7	0	0.0
Missing responses	4	2.7	0	0.0
Totals	146	100.0	37	100.0

TABLE XXXVI

TYPE OF TELEVISION PROGRAMS WATCHED

Type of Program	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
None listed	2	0.9	0	0.0
Children's shows	9	4.2	0	0.0
Educational television (PBS)	23	10.8	4	11.8
Family entertainment	94	44.1	15	44.1
News shows	68	31.9	9	26.5
Sports shows	8	3.8	3	8.8
Miscellaneous	9	4.2	3	8.8
Totals	213	100.0	34	100.0

TABLE XXXVII

NUMBER OF TELEVISION PROGRAMS WATCHED REGULARLY

Number Watched	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
No television programs watched regularly	47	32.2	16	43.2
One television program watched regularly	20	13.7	6	16.2
Two television programs watched regularly	32	21.9	8	21.6
Three television programs watched regularly	28	19.2	3	8.1
Four television programs watched regularly	12	8.2	3	8.1
Five or more television programs watched regularly	7	4.9	1	2.7
Missing responses	0	0.0	0	0.0
Totals	146	100.0	37	100.0

TABLE XXXVIII

NUMBER OF WORKSHOPS ATTENDED IN THE PAST TWO YEARS

Number Attended	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
No workshops attended in past two years	15	10.3	11	29.7
One workshop attended in past two years	79	54.1	16	43.2
Two or more workshops attended in past two years	51	34.9	10	27.0
Missing responses	1	0.7	0	0.0
Totals	146	100.0	37	100.0

TABLE XXXIX

LOCALITY OF CONFERENCES ATTENDED

Region Attended	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
No conferences attended	7	4.8	4	10.8
Only local conferences attended	30	20.5	4	10.8
Only national conferences attended	12	8.2	5	13.5
Both local and regional conferences attended	0	0.0	0	0.0
Both regional and national conferences attended	37	25.3	18	48.6
Local, regional, and national conferences attended	3	2.1	1	2.7
Missing responses	28	19.2	1	2.7
Totals	146	100.0	37	100.0

TABLE XL

FREQUENCY OF TRAVEL

Frequency	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
No travel	30	20.5	8	21.6
Travel occasionally (1 to 3 times a year)	30	20.5	20	54.1
Travel more than 3 times a year	51	34.9	9	24.3
Missing responses	35	24.0	0	0.0
Totals	146	100.0	37	100.0

TABLE XLI

REGION OR DISTANCE OF TRAVEL

Region	Experimental Group		Control Group	
	Abs. Freq.	Rel. Freq. (Percent)	Abs. Freq.	Rel. Freq. (Percent)
Locally	12	8.2	4	10.8
Regionally	20	13.7	6	16.2
Nationally	22	15.1	10	27.0
Internationally	27	18.5	6	16.2
Missing responses	65	44.6	11	29.7
Totals	146	100.0	37	100.0

VITA

Timothy John Touzel was born in Los Angeles, California, on November 2, 1945. He attended public and parochial schools in Los Angeles and Compton, California and Columbia and Shelbyville, Tennessee, graduating from Shelbyville Central High School in 1964. He earned a Bachelor of Science degree from The University of Tennessee, Knoxville, in 1969 with a major in the biological sciences.

He married Susan J. Wingate in August 1969 and they both began teaching in all black schools in the Memphis City School System that same month. To improve their skills in dealing with inner city black students, both Tim and Suzi entered the Master's program in education at Memphis State University in the summer of 1970. Tim received his Master's of Education degree in December of 1971 with a major in secondary education and a minor in the biological sciences. While teaching in the Memphis City Schools, Tim taught biology and chemistry and served as student council advisor and chairman of the science department.

In the fall of 1972 he enrolled at The University of Tennessee, Knoxville, in the general field of curriculum and instruction with collateral emphases in continuing and higher education and foundations of

education. While working on his doctorate, he served as a graduate teaching assistant in the Pilot Program of Teacher Education, an instructor for the student teaching program, and as a program director and evaluator for the Title I laboratories in Shelby County, Tennessee. He served on the comprehensive study of the Sevier County Schools and the comprehensive evaluation of the Memphis City Schools. Also, he evaluated summer leadership seminars for the Southern Association of Colleges and Schools and the Educational Opportunities Planning Center for Tennessee and Kentucky. He received Ed.D. in August 1975.

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