AN ASSESSMENT OF ATTITUDES EXPRESSED TOWARD INSTRUCTIONAL DEVELOPMENT BY THREE GROUPS AS A FUNCTION OF (1) TEACHING LEVEL AND (2) SEX

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ABSTRACT

AN ASSESSMENT OF ATTITUDES EXPRESSED TOWARD INSTRUCTIONAL DEVELOPMENT BY THREE GROUPS AS A FUNCTION OF (1) TEACHING LEVEL AND (2) SEX

By

Sigrid Ann Trombley

The purpose of this study was to determine the difference in expressed attitudes toward instructional development between males and females, and between elementary and secondary school teachers and administrators.

The population for this study consisted of 31 participants in an Instructional Development Institute (IDI), 46 students enrolled winter term, 1972, in the Education 831A course in educational media at Michigan State University, and a group of 33 educators from the East Lansing Public School System. IDI participants (teachers, administrators, policy makers, and specialists) had taken part in a 40-hour program designed to provide them with initial competencies and skills in applying an instructional systems approach to the development of solutions to teaching and learning problems. Education 831A is a graduate level course which provides the students with formal exposure to the instructional development concept. The control group of educators from the East Lansing Public School System

had had no formal exposure to the instructional development concept.

Prior to the administration of the modified instrument to the population used in this study, the original 50-item Likert-type instrument, Attitude Toward Instructional Development was given as a pre-test to 43 students enrolled in Education 831A at Michigan State University during the fall term of 1971. The original instrument was modified according to procedures of Guttman Scalogram Analysis and was found to be unidimensional.

Univariate analyses of variance were used to determine the differences which existed across and within the three groups as a function of teaching level and also of sex. Hypotheses were tested at the .05 level.

Data analysis supports the following conclusions:

1. The attitude toward instructional development of administrators at the K-8 level was significantly more positive than the attitude of administrators at the 9-12 level.

2. No significant difference in attitude toward instructional development was found between teachers at the K-8 level and teachers at the 9-12 level when compared irrespective of groups. When attitude toward instructional development of teachers at the K-8 level was compared to the attitude of teachers at the 9-12 level with respect to the groups the teachers were in, one group showed a significant difference.

Teachers at the 9-12 level in the control group had significantly more positive attitudes than did teachers at the K-8 level.

3. No significant difference in attitude toward instructional development was found when males and females were compared irrespective of groups. When the attitude toward instructional development of males was compared to that of females with respect to the groups the individuals were in, no significant difference was found.

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CHAPTER I

THE PROBLEM

Purpose of the Study

The purpose of this study is to determine the difference in expressed attitudes toward instructional development (I.D.) between males and females, and between elementary and secondary teachers and administrators.

Need for the Study

Rogers defines an innovation as "an idea, practice, or object perceived as new by an individual."[1] As far as human behavior is concerned it does not much matter if the innovation is new as measured by the passage of time since its first use or discovery. What matters in terms of an individual's reaction to an idea is his perception of the newness of the idea.

> "New" in an innovative idea need not be simply new knowledge. An innovation might be known by an individual for some time (that is, he is aware of the idea), but he has not yet developed a favorable or unfavorable attitude toward it, nor has he adopted or rejected it. The "newness" aspect of innovation may be expressed in

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[1]Everett M. Rogers with F. Floyd Shoemaker, Communication of Innovations (New York: The Free Press, 1971), p. 19.

> knowledge, in attitude, or regarding a decision to use it.[2]

Knowing about a "new" idea, an innovation, and using it are quite different matters. Most people know about many innovations which they have not adopted. In making a decision to adopt or reject an innovation, an individual goes through an innovation-decision process. The innovation-decision process is defined as:

> ... the mental process through which an individual passes from first knowledge of an innovation to a decision to adopt or reject and to confirmation of this decision.[3]

Everett Rogers[4] suggests that there are four steps or functions in this process: knowledge, persuasion, decision, and confirmation. The knowledge function occurs when an individual becomes aware of the existence of an innovation and acquires some understanding of how it functions. Mental activity at this stage is mainly cognitive. The persuasion function takes place when an individual forms either a favorable or unfavorable attitude toward the innovation. Mental activity during this stage is primarily affective. Activities which lead to a choice to adopt or reject the innovation are engaged in during the decision function. During the confirmation function, an individual seeks reinforcement for the innovation-decision he has made.[5]

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[2]Ibid., p. 19.

[3]Ibid., p. 25.

[4]Ibid., p. 25.

[5]Ibid., p. 25.

Since attitudes toward an innovation intervene between the knowledge and decision functions, they can greatly influence the manner in which an individual passes through the innovation-decision process.

> Consideration of a new idea does not pass beyond the knowledge function if the individual does not define the information as relevant to him or if he does not seek sufficient knowledge to become adequately informed so that persuasion can take place.[6]

Attitudes may prevent an individual from ever getting to the decision function of the innovation-decision process or at the very least they will affect the time it takes to go through the process.

Since the role of a change agent is that of influencing innovation-decisions,[7] knowledge of a client's attitude toward an innovation can help the change agent devise strategies most likely to bring about adoption in the shortest period of time.

In education circles, one of the people who functions as a change agent is the instructional developer. Through adoption of the innovation instructional development the instructional developer hopes to help those who adopt and engage in the instructional development process to bring about systematic changes in instruction which will result in more effective and efficient student learning. If he is to function successfully as a change agent, knowledge of the attitudes of the people he works with is crucial to the efforts of the instructional

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[6]Ibid., p. 108.

[7]Ibid., p. 227.

developer. According to Rogers, failure to look at attitudes is one reason change programs fail. Change agents must have knowledge of their client's attitudes (among other things) if programs of change are to be tailored to fit the clients.[8]

A study of attitudes toward instructional development could provide 1) baseline data for further research, 2) information useful for devising change agent strategies for implementing the instructional development process, and 3) information which might be useful for those responsible for determining the design and content of courses in instructional development.

Definitions

Specific terms used in this study are defined as follows:

Adoption

> ... is a decision to make full use of a new idea as the best course of action available.[9]

Attitude

> ... the degree of positive or negative affect associated with some psychological object. A psychological object means any symbol, phrase, slogan, person, institution, ideal or idea toward which people can differ with respect to be positive or negative affect.[10]

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[8]Ibid., p. 239.

[9]Ibid., p. 26.

[10]Allen L. Edwards, and Bette C. Porter, "Attitude Measurement," in The Affective Domain: A Resource Book for Media Specialists (Washington, D.C.: Communication Service Corporation, 1970), p. 117.

Attitude Scale

> ... a quantitative method for assessing an individual's relative position along a unidimensional attitude continuum. The direction and intensity of the respondent's attitude are indicated by a single score which summarizes his responses to a series of items, each of which is related to the single concept, object, or issue under study.[11]

Change Agent

> ... is a professional who influences innovation-decisions in a direction deemed desirable by a change agency.[12]

Formative Evaluation

> ... the use of systematic evaluation in the process of curriculum construction, teaching and learning for the purpose of improving any of these three processes.[13]

Guttman Scale

The Guttman scale, sometimes called the cumulative scale,

> ... consists of a relatively small set of homogeneous items that are unidimensional. A unidimensional scale measures one variable and one variable only. The scale gets its name from the cumulative relation between items and the total scores of individuals.[14]

Innovation

> ... is an idea, practice, or object perceived as new by an individual.[15]

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[11]Ibid., p. 123.

[12]Rogers, op. cit., p. 227.

[13]Benjamin S. Bloom, J. Thomas Hastings, and George F. Madaus, Handbook of Formative and Summative Evaluation of Student Learning (New York: McGraw-Hill Co., 1971), p. 117.

[14]Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1964), p. 485.

[15]Rogers, op. cit., p. 19.

Innovation-decision Process

> ... is the mental process through which an individual passes from first knowledge of an innovation to adopt or reject and to confirmation of this decision.[16]

Instructional Development

> ... systematic process of designing, carrying out, and evaluating the learning and teaching process based on research in learning theory and communication and combining both human and non-human resources in an effort to bring about more effective learning.[17]

Instructional Developer

> ... is an innovation-minded individual who functions as a catalyst for bringing about more effective and efficient learning through the improvement of instruction. He is a specialist in the techniques and resources involved in improving instruction.

Summative Evaluation

> ... the type of evaluation used at the end of a term, course, or program for ... evaluation of progress, or research on the effectiveness of a curriculum, course of study, or educational plan ... the essential characteristic of summative evaluation is that a judgment is made about the ... curriculum with regard to the effectiveness of learning or instruction, after the learning or instruction has taken place.[18]

Theory and Rationale

This study is concerned with attitudes toward instructional development expressed by selected individuals as a function of the variables of sex and teaching level. In this

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[16]Rogers, op. cit., p. 25.

[17]To Improve Learning: A Report to the President and the Congress of the United States (Washington, D.C.: By the Commission Office, 1970), p. 5.

[18]Bloom, Hastings, and Madaus, op. cit., p. 117.

section are presented some dimensions of instructional development, the relationship between attitudes and behavior, and the relationship of attitudes to the variables of sex and teaching level.

Instructional Development

For some time now educators from such diverse areas as media, educational psychology and curriculum have been aware of the need to develop more effective and efficient instructional strategies which would lead to greater student learning. Awareness of this need has led to the emergence of a concept known as instructional development. Instructional development is the phrase most often given to the concept. It has, however, at various times been described by such terms as: instructional systems development,[19] the systems approach to instructional development,[20] instructional design,[21] and a system approach to education.[22]

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[19]John Barson, A Procedural Analysis Study of Media in Instructional Systems Development (East Lansing: Michigan State University, 1965).

[20]Dale Hamreus, "The Systems Approach to Instructional Development," in The Contribution of Behavioral Science to Instructional Technology, edited by Jack V. Edling (Monmouth, Oregon: Teaching Research Division of the Oregon State System of Higher Education), undated.

[21]Robert Glaser, "Educational Technology as Instructional Design," Educational Technology, VIII (January 15, 1968), 5.

[22]Roger A. Kaufman, "A System Approach to Education: Derivation and Definition," Audiovisual Communication Review, XVI (Winter, 1968), 415.

Just as there have been various attempts to give the concept a name, there also have been several attempts to define the concept instructional development. Gustafson defines it as:

> ... a process for improving the quality of instruction. For this is, or should be its goal. Its objective is to combine a variety of human and non-human resources in an effective and efficient instructional system.[23]

Hamreus considers instructional development to be:

> ... a systematic process of bringing relevant instructional goals into effective learning activity.[24]

According to Faris, instructional development is:

> ... the process of designing, of inventing, of creating solutions to instructional problems encountered by teachers in a relatively localized situation.[25]

The following definition appears to be an amalgamation of the aforementioned definitions. It is the definition used in this study and though appearing in the glossary of terms is repeated here for the convenience of the reader. Instructional development is:

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[23]Kent L. Gustafson, Toward A Definition of Instructional Development. A paper presented to the Instructional Development Division: Association for Educational Communications and Technology, Philadelphia, Pennsylvania, March 1971, p. 1.

[24]Dale Hamreus, Toward A Definition of Instructional Development. A paper presented to the Instructional Development Division: Association for Educational Communications and Technology, Philadelphia, Pennsylvania, March, 1971, p. 1.

[25]Gene Faris, "Faculty Development ... The Key to Instructional Development," Viewpoints Bulletin of the School of Education Indiana University, LXVI (March, 1970), 131.

> ... a systematic process of designing, carrying out, and evaluating the learning and teaching process based on research in learning theory and communication and combining both human and non-human resources in an effort to bring about more effective learning.[28]

All four definitions consider instructional development to be a process. Further, they either state directly or at least infer that the process is engaged in to facilitate learning under the most efficient conditions.

There are many models for carrying out the instructional development process. A description of the Hamreus Mini Model (see Figure 1) has been chosen for inclusion in this section not because it is necessarily the best but because it contains or at least alludes to the essential elements of the instructional development process. Still further, it should be pointed out that there is no generic model for instructional development.

Description of the Components of the Hamreus Mini Model

Box A Define Problem

At this stage the nature of the problem and the setting within which it has emerged are analyzed. More specifically, reasons which caused the problem to be felt, persons associated with the problem, characteristics of learners, resource materials available and constraints are considered.

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[26] To Improve Learning ..., op. cit., p. 5.

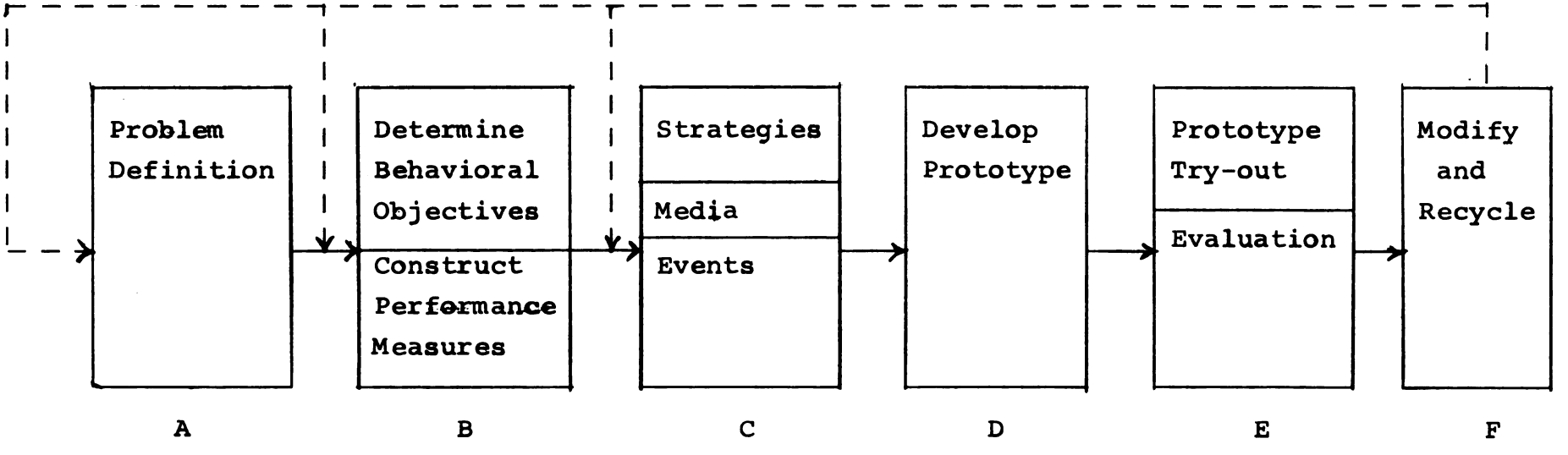

Figure 1. Hamreus Mini Model[27]

[27]Dale Hamreus, "The Systems Approach to Instructional Development," p. 140.

Box B Determine Objectives and Performance Measures

The first step of Box B involves the writing of behavioral objectives for every behavior the instructor wishes the learner to acquire. The second step concerns the development of evaluation procedures which measure the behaviors identified.

Box C Determine Strategies, Media and Events

At this stage one chooses strategies for selecting and presenting subject matter content, media to be used, and activities which bring about the interactions of learners, teacher, and materials which in turn bring about the desired learning outcomes.

Box D Develop Prototype

Output from Box C provides specifications for developing whatever is necessary for employing the new instructional prototype.

Box E Prototype Try-Out and Evaluation

At this stage, the instructional prototype is tried out and evaluated with representative learners in a realistic instructional situation.

Box F Modify and Recycle

After the prototype has been evaluated, it is modified to account for the weaknesses which were identified in Box E. The modified program is retried and evaluated and the whole process repeated until those involved are satisfied with the outcomes.

Note that although the elements are drawn in separate boxes, they are not discrete entities. All elements are interdependent and interrelated. The importance of the establishment of a communication flow within and among all elements cannot be overemphasized. Evaluative feedback is essential. While summative evaluation is specifically indicated in the model, formative evaluation is just as essential. All the steps along the way can be evaluated and modified in light of information derived at any time or place the process is being carried out.

The instructional development process is not linear. Thus, there is no predetermined sequence of steps and point of entry into the process may be at any point deemed desirable. Perhaps the chief value of using a model is to assure that when a full scale instructional development project is attempted all steps or design elements are at least considered.

An instructional development model is universal only in a general way. This is desirable as consideration of conditions and restraints in a specific situation are more important than is slave-like adherence to the steps in a particular model.

Rather than being tied to a particular discipline, instructional development can and does take what is useful from many disciplines.[28] Since instructional development is eclectic it seems logical that the process would best be

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[28]Gustafson, op. cit., p. 2.

carried out by a team of people. The team approach is one reason that instructional development is potentially so powerful. A group of individuals, with varying talents, and using a systematic approach can do what no individual can do regardless of how willing he might be. Witt[29] suggests that some of the areas of professional competency needed on an instructional development team include: learning psychology, human growth and development, teaching, curriculum, communication, print and non-print media, instructional technology, research, evaluation and instructional design.

However, merely assembling a group of people with diverse competencies to engage in instructional development will not assure success. Human factors must be considered. An informal study of ESEA Title III Projects in Michigan notes that teachers and administrators who are involved in ESEA Title III Projects look upon human factors as more crucial to curriculum change than non-human or material factors. Humans are the most commonly noted obstacles to and facilitators of educational change.[30]

Until recently, the human factors, as they relate to instructional development, have not been given very much

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[29]Paul W. F. Witt, Instructional Development: What? Why? How? Who?, Paper presented at the Symposium on Instructional Development, Michigan State University, May 3, 1971, p. 16.

[30]Peggy L. Miller, "Innovation and Change in Education," Educational Leadership, XXVII (January, 1970), 339.

attention. Witt,[31] while recognizing that interpersonal relations and group dynamics are vitally important to group efforts such as instructional development is, notes that leaders in instructional development have not paid as much attention to these factors as they have to the process of designing instruction.

Gustafson also speaks to the people aspect of the instructional development process.

> Without doubt the most important element of the ID system is people. People are its energy, its insight, its product and its consumer. To engage in ID is to change people.[32]

He goes on to warn that continued neglect of human factors will result in more and more of what he calls "ID casualties".

> I have seen too many examples of faculty members begged, bribed, cajoled, and wheedled through an ID project from which a fine product emerged.... He [the faculty member] is proud of his product as is the returning war veteran of his purple heart but neither wishes to return to the battle.[33]

Even though the project was a success in terms of the product which emerged, it should probably be considered a failure since the faculty member will more than likely have a negative attitude toward instructional development and not wish to engage in it again.

In dealing with the human factor or people aspect of instructional development, it seems important that peoples' attitudes toward instructional development be assessed as

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[31]Witt, op. cit., p. 16.

[32]Gustafson, op. cit., p. 6.

[33]Ibid., p. 7.

their attitudes may in large measure determine the nature of their initial or continued involvement in instructional development activities.

Attitude and Behavior

The concept of attitude and its relationship to behavior have long been concerns of social psychologists. However, there have been relatively few studies which attempted to systematically look at this relationship. The studies which have attempted to predict behavior from some measure of attitude have generally found a lack of correspondence between actual behavior and expressed attitudes. In fact, Fishbein states that:

> After more than seventy-five years of attitude research, there is still little, if any, consistent evidence supporting the hypothesis that knowledge of an individual's attitude toward some object will allow one to predict the way he will behave with respect to the object.[34]

Because the research findings are inconsistent some authors question the assumption that there is a relationship between behavior and attitudes. Some ascribe the inconsistency of research findings to the measuring instrument (Cook and Sellitz)[35]; other attribute the definition of attitude

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[34]Martin Fishbein, "Attitude and the Prediction of Behavior," In Fishbein (Ed.) Readings in Attitude Theory and Measurement (New York: Wiley, 1967), p. 477.

[35]S. W. Cook and C. Sellitz, "A Multiple-indicator Approach to Attitude Measurement," Psychological Bulletin, LXII (July, 1964), 37.

(DeFleur and Westie).[36] Still others (Katz and Stotland)[37] question the definition of the concept and the measuring instrument.

Fishbein contends that psychologists have been rather naive in their attempts to understand and investigate the attitude-behavior relationship.

> More often than not, we have attempted to predict some behavior from some measure of attitude and found little or no relationship between these variables. Yet, rather than questioning our basic assumption that there is a strong relationship between attitude and behavior, we have tended to blame our failures on our measuring instruments, on our definition of attitude, or on both.[38]

Two studies frequently mentioned as evidence of the inconsistency of findings concerning the relationship of attitude to behavior are those done by LaPiere,[39] and by Kutner et al.[40] These studies revealed discrepancies among restaurant-owners and innkeepers between verbal expressions of discrimination toward Chinese and Blacks via letter or phone and their nondiscriminatory face-to-face behavior.

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[36]M. DeFleur and F. Westie, "Attitude as a Scientific Concept," Social Forces, XLII (1963), 29.

[37]D. Katz and E. A. Stotland, "A Preliminary Statement of Attitude Structure and Change," In Koch (Ed.) Psychology: A Study of Science, Vol. 3, Formulations of Person and the Social Context (New York: McGraw-Hill, 1959), p. 454.

[38]Fishbein, op. cit., p. 447.

[39]R. T. LaPiere, "Attitudes vs. Actions," Social Forces, XIII (December, 1934), 230-237.

[40]B. Kutner, C. Wilkens, and P. R. Yarrow, "Verbal Attitudes and Overt Behavior Involving Racial Prejudice," Journal of Abnormal and Social Psychology, XLVII (1952), 649-652.

In these as well as some other studies which examined the relationships between attitudes and behavior, the authors mention intervening variables as possible explanations for the discrepancies. The variables most often identified are situational variables. Because of the recognized influence of situational variables, some authors have concluded that behavior is determined not by attitude, but by characteristics of the situation (e.g., Blumer,[41] Raab and Lipset,[42] Rose,[43] and DeFleur and Westie[44]).

The need to reconceptualize the relationship between attitude and behavior rather than abandon the assumption that there is a relationship has been focused on by Insko,[45] and Jahoda and Warren.[46]

In the past, Rokeach points out, researchers have measured attitudes toward objects, across situations rather

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[41]H. Blumer, "Research on Racial Relations in the United States of America," International Social Science Journal, X (1958), 427.

[42]C. Raab and S. M. Lipset, "The Prejudiced Society," In Raab (Ed.) American Race Relations Today (New York: Doubleday, 1962), p. 31.

[43]A. M. Rose, "Intergroup Relations vs. Prejudice: Pertinent Theory for the Study of Social Change," Social Problems, IV (October, 1956), 174.

[44]DeFleur and Westie, op. cit., p. 28.

[45]C. Insko, Theories of Attitude Change (New York: Appleton-Century, 1967).

[46]M. Jahoda and N. Warren (Eds.), Attitudes (Baltimore: Penguin Books, 1966).

than measure attitudes toward situations, across objects.[47] The disjunction of attitude toward-situation from attitude toward-object has "... resulted in a failure to appreciate that an attitude object is always encountered within some situation, about which we have an organized attitude."[48] Rokeach hypothesizes that behavior can be predicted if one can measure the attitude toward an object, the attitude toward a situation and the cognitive interaction between the two.[49]

Kleijunas,[50] in his study, attempted to look at the relationship between attitudes and behavior in light of Rokeach's hypothesis about the nature of attitudes and their ability to predict behavior. Results indicated that attitudes, properly conceptualized and measured, can be accurate predictors of behavior.

Remmers asserts that attitudes play an important role in determining behavior. "The realization is rapidly growing that attitudes, the way individuals and groups feel about the various aspects of their world, are probably more determinative

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[47]Milton Rokeach, Beliefs, Attitudes, and Values (San Francisco: Jossey-Bass Inc., 1968), p. 118.

[48]Milton Rokeach, "The Nature of Attitudes," In Sills (Ed.) International Encyclopedia of the Social Sciences, Vol. 1 (New York: Macmillan, 1968), p. 452.

[49]Rokeach, Beliefs, Attitudes, and Values, op. cit., p. 136.

[50]Peter T. Kleijunas, Attitude Toward Object and Attitude Toward Situation as Predictors of Behavior, Unpublished Master's Thesis, Michigan State University, 1969.

of behavior than mere cognitive understanding of this world."[51]

Attitudes toward instructional development should at least reflect behavior though they may not necessarily predict it. Knowledge of individual's attitudes toward I.D. will hopefully enable those involved in its diffusion to develop better strategies for encouraging educators to engage in it.

At present few studies have been done which have attempted to assess attitudes toward instructional development. A fundamental problem facing those who study attitudes is to ascertain whether or not questions asked on a given issue have a single meaning for the respondents.[52] An instrument is needed which will assess attitudes toward instructional development along one and only one dimension. Too often, in the past, Guttman states "the common tendency has been to plunge into analysis of data without having a clear idea as to when a single dimension exists and when it does not."[53]

Sex and Teaching Level Variables

The literature indicates that there are significant differences in the attitudes of teachers and administrators when

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[51]H. H. Remmers, Introduction to Opinion and Attitude Measurement (New York: Harper and Brothers, 1954), p. 15.

[52]Louis Guttman, "The Basis for Scalogram Analysis," Reprinted from Studies of Social Psychology in World War II, Vol. 4 of Measurement and Prediction, Princeton University Press, 1949. Bobbs-Merrill Reprint Series in the Social Sciences, Print no. S-413, p. 60.

[53]Guttman, op. cit., p. 63.

their attitudes are assessed with respect to the variables of sex and teaching level.

Lindgren and Patton,[54] found that attitudes toward children and current educational theory of elementary teachers were more favorable than were the attitudes of secondary teachers. They also found that females had more positive attitudes than males.

Beamer and Ledbetter[55] examined the Minnesota Teacher Attitude Inventory scores of 212 graduate students at North Texas State College. These students were subdivided by sex, teaching level and experience. Elementary teachers had more positive attitudes than secondary teachers and females had more positive attitudes than males.

Leeds,[56] using a Teacher-Pupil Inventory, found little relationship between teacher's attitudes and the variables of sex, grade level, age, training, experience and subject taught. Though not statistically significant, the mean scores of teachers of grades 1-6 were higher than the scores of teachers of grades 7-12.

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[54]H. C. Lindgren and Gladys M. Patton, "Attitudes of High School and Other Teachers Toward Children and Current Educational Methodology," California Journal of Educational Research, IX (March, 1958), 85.

[55]G. C. Beamer and Elaine W. Ledbetter, "The Relation Between Teacher Attitudes and Social Service Interest," Journal of Educational Research, L (May, 1957), 665.

[56]Carrol H. Leeds, and Walter W. Cook, "The Construction and Differential Value of a Scale for Determining Teacher-Pupil Attitudes," Journal of Experimental Education, XVI (December, 1949), 159.

Wandt[57] felt that information for assessing the total personality would result from the assessment of teacher's attitudes towards groups contacted in the schools. Findings from his Teacher Characteristics Study indicated that elementary teachers had more positive attitudes than did secondary teachers.

In an NEA[58] study, teachers were asked to reveal their attitudes toward teaching in five ways: 1) by estimating teaching load, 2) by estimating degree of tension or strain felt in work, 3) by indicating willingness to again choose teaching as a career, 4) by identifying sources of professional satisfaction and encouragement, and 5) by describing any teaching innovations or experiments initiated during the past year. More males than females and more secondary teachers than elementary teachers reported feeling considerable strain. Women and elementary teachers showed a greater willingness to again choose teaching as a career.

More than 6,000 teachers in 1,700 schools were involved in the Teacher Characteristics Study directed by Ryans.[59]

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[57]E. Wandt, "The Measurement of Teacher's Attitudes Toward Groups Contacted in the Schools," Journal of Educational Research, XLVI (October, 1952), 117.

[58]Research Division NEA The American Public School Teacher, 1960-61 Personal and Professional Characteristics, Assignments, Attitudes, Research Monograph 1963-M2, April 1963.

[59]D. G. Ryans, Characteristics of Teachers (Washington, D. C.: American Council on Education, 1960).

Data from instruments which assessed attitudes, verbal understandings, educational viewpoints, and emotional viewpoints indicated the following:

1. Attitudes of elementary teachers toward groups contacted in the school were more positive than those of secondary teachers.
2. Secondary teachers educational viewpoints were more traditional while those of elementary teachers were more permissive.
3. Male teachers were more emotionally stable than female teachers.

Summary

In most instances, the attitudes of female teachers and the attitudes of elementary teachers were found to be more positive than the attitudes of male teachers, and secondary teachers when their attitudes toward various psychological objects were measured. Though attitudes toward instructional development with respect to these variables have yet to be assessed, the literature indicates that teaching level and sex are and continue to be important variables to study when measuring attitudes. Since school personnel involved in instructional development are likely to be similar to the groups studied in the literature previously cited, it seems logical that these variables should be looked at with regard to instructional development attitudes and that significant differences are likely to exist between females and males and between elementary and secondary school teachers.

Hypotheses to be Tested

The following hypotheses were generated and tested to determine the degree of difference in expressed attitudes which existed between and within the three groups.

1. Administrators at the K-8 level will exhibit a more positive attitude toward I.D. than will administrators at the 9-12 level.

2. Teachers at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers at the 9-12 level.

   Sub-hypotheses

   2a. Teachers in the IDI group at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers in the IDI group at the 9-12 level.
   2b. Teachers in the 831A group at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers in the 831A group at the 9-12 level.
   2c. Teachers in the control group at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers in the control group at the 9-12 level.

3. There will be a significant difference in the expressed attitudes of the three groups as a result of sex. Females will exhibit a more positive attitude toward I.D. than will males.

   Sub-hypotheses

   3a. Females in the IDI group will exhibit a more positive attitude toward I.D. than will the males in the IDI group.
   3b. Females in the 831A group will exhibit a more positive attitude toward I.D. than will the males in the 831A group.
   3c. Females in the control group will exhibit a more positive attitude toward I.D. than will males in the control group.

Limitations of the Study

There are specific limitations to this study which must be considered prior to making interpretations of the findings.

The results of this study will be generalizable to other populations only to the extent that other populations are similar in characteristics to the population used in the study. The specific limitations are:

1. An instrument which may be scalable for a population at a given time may at a later time not be scalable. Conversely, an instrument may not form a scale at one time but may be found scalable at a later date.

2. A universe of items may be scalable for one population of individuals, but not for another.

3. A universe of items may form a scale for subgroups of a population, but may not form a scale for the total population.

4. The relatively small sample size poses a significant problem with respect to statistical analysis of the differences which may exist between subgroups of the three groups being studied.

CHAPTER II

REVIEW OF THE LITERATURE

The Attitude Concept

Thomas and Znaniecki in their study of people in transition between two cultures first established the concept of attitude as a central variable.[1] They considered an attitude an internalized counterpart of an external object which represented the individual's subjective inclinations to act toward that object.

> By attitude we understand a process of individual consciousness which determines real or possible activity of the individual counterparts of the social value; activity, in whatever form, is the bond between them.[2]

To illustrate the common usage of the term, several traditional definitions of attitude are included.

> We shall regard attitudes here as verablized or verbalizable tendencies, dispositions, adjustments toward certain acts. They relate not to the past nor even primarily to the present, but as a rule to the future.... The "attitude" is primarily a way of being "set" toward or against things.[3]

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[1]George G. Stern, "Measuring Non-cognitive Variables in Research on Teaching," in Gage (Ed.) Handbook of Research on Teaching (Chicago: Rand McNally and Co., 1963), p. 403.

[2]W. I. Thomas and F. Znaniecki The Polish Peasant in Europe, Vol. 1 (Boston: Badger Press, 1918), p. 27.

[3]G. Murphy and L. B. Murphy, Experimental Social Psychology (New York: Harper, 1931), p. 615.

> ... a more or less permanently enduring state of readiness of mental organization which predisposes an individual to react in a characteristic way to any object or situation with which it is related.[4]
>
> An enduring learned predisposition to behave in a consistent way toward a given class of objects.[5]
>
> A relatively enduring system of evaluative, affective reactions based on and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects.[6]
>
> An enduring system of positive or negative evaluations, emotional feelings, and pro or con action tendencies with respect to a social object.[7]
>
> An attitude is a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner.[8]

Although more definitions of attitude could be cited, the above definitions are representative of those found in much of the literature. The importance of the attitude concept is clearly indicated by Allport who states that:

> The concept of attitude is probably the most distinctive and indispensable concept in contemporary American social

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[4]H. Cantril, "Attitudes in the Making," Understanding the Child, IV (1934), 13-14.

[5]H. B. English and A. C. English, A Comprehensive Dictionary of Psychological and Psychoanalytic Terms: A Guide to Usage (New York: McKay, 1958), p. 50.

[6]Marvin E. Shaw and Jack M. Wright, Scales for the Measurement of Attitudes (New York: McGraw-Hill, 1967), p. 3.

[7]D. Krech, R. S. Crutchfield, and E. L. Ballachey, Individual in Society (New York: McGraw-Hill, 1962), p. 177.

[8]M. Rokeach, Beliefs, Attitudes and Values, op. cit., p. 112.

> psychology. No other term appears more frequently in experimental and theoretical literature.[9]

Despite the importance and central position of attitude in social psychology, the concept has been plagued with ambiguity. As one looks at the various definitions of attitude cited in the literature, it is difficult to determine what ways the definitions are conceptually different or similar and more importantly what difference the variations in conceptualization make. As far as attitude measurement is concerned most of the definitions seem to be interchangeable.

Two researchers have even advocated discarding the attitude concept. Doob[10] asserts that while socially useful, the concept has no systematic status as a scientific construct and should be replaced with such learning theory constructs as habit-strength drive, anticipatory responses, etc. Blumer[11] believes that the concept should be abandoned because it is ambiguous and therefore blocks the development of sound social-psychological theory. These two views are in the minority however and Rokeach[12] predicts that despite its ambiguity the concept will remain for many years to come. Further, he

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[9]Gordon Allport, "Attitudes," In Fishbein (Ed.) Readings in Attitude Theory and Measurement (New York: Wiley, 1967), p. 3.

[10]Leonard W. Doob, "The Behavior of Attitudes," Psychological Review, LIV (May, 1947), 154-155.

[11]Herbert Blumer, "Attitudes and the Social Act," Social Problems, III (October, 1955), 60.

[12]Rokeach, "The Nature of Attitudes," op. cit., p. 453.

states that rather than abandon the concept it should continue to be subjected to critical analysis with the aim of finding a more precise conceptual and operational meaning.

In order to analyze the concept of attitude, it is helpful to look at some of the characteristics of attitudes. An attitude is not something that can be observed directly. It is a psychological concept designating something inside the individual. Nevertheless, the concept of attitude has some characteristics which differentiate it from other concepts which refer to internal states of the individual. Many of the characteristics are indicated in the previously mentioned traditional definitions of attitude.

First, attitudes are not temporary states but are relatively stable and enduring once they are formed (Newcomb et al.,[13] Sherif and Sherif,[14] and Rokeach[15]). Attitudes do of course change; but once they are formed they acquire a regulatory function so that within limits they do not change with every slight variation in the life of the individual. Second, attitudes are not inborn. The appearance of an attitude is dependent upon learning (Sherif and Sherif,[16] McGrath[17]).

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[13]T. M. Newcomb, R. H. Turner, and P. E. Converse, Social Psychology: The Study of Human Interaction (New York: Holt, 1965), p. 42.

[14]M. Sherif and C. W. Sherif, An Outline of Social Psychology, Rev. ed. (New York: Harper and Row, 1956), p. 494.

[15]Rokeach, Beliefs, Attitudes, and Values, op. cit., p. 112.

[16]Sherif and Sherif, op. cit., p. 494.

[17]J. E. McGrath, Social Psychology: A Brief Introduction (New York: Holt, 1964).

They are learned through interaction with social objects and in situations. Third, there is an implied relationship between the person and the objects (Sherif and Sherif,[18] Newcomb et al.[19]). In other words, attitudes are formed in relation to identifiable referents such as persons, institutions, objects and issues. Fourth, the referent object has certain characteristics which an individual evaluates when forming his attitude about the referent object. The attitudes formed give rise to motivated behavior (Anderson and Fishbein,[20] Doob,[21] Osgood et al.[22]). Attitude is not behavior, but the predisposition to behavior. Fifth, attitudes vary in intensity or strength along a continuum from positive through neutral to negative (Krech, et al.,[23] McGrath,[24] Newcomb et al.[25]). The intensity or strength of an attitude becomes greater as one moves toward either extremity of the continuum from the neutral point. Last, there are varying degrees of interrelatedness among attitudes (Krech et al.,[26] McGrath[27]).

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[18]Sherif and Sherif, op. cit., p. 494.

[19]Newcomb, Turner and Converse, op. cit., p. 50.

[20]L. R. Anderson and M. Fishbein, "Prediction of an Attitude from Number, Strength, and Evaluative Aspect of Beliefs About the Attitude Object: A Comparison of Summation and Congruity Theories," Journal of Personality and Social Psychology, II (September, 1965), 437-443.

[21]Doob, op. cit., p. 137.

[22]C. E. Osgood, G. J. Suci, and P. H. Tannenbaum, The Measurement of Meaning (Urbana: The University of Illinois Press, 1957).

[23]Krech, Crutchfield and Ballachey, op. cit., p. 142.

[24]McGrath, op. cit.

They are interrelated to the extent they have like valences or referents. Highly interrelated attitudes form subsystems. The total attitudinal system is formed by the interrelationships of the subsystems.

Attitude Measurement

There are two basic dimensions of attitude which researchers attempt to measure. The first is the direction of an individual's feelings toward a psychological object: either positive or negative, favorable or unfavorable. The second is the magnitude of the feeling.

One of the earliest attempts at applying psychological test construction techniques to the development of attitude questionnaires was made by G. B. Watson in 1925. His "fairmindedness" test was an attempt to measure prejudice on 12 different issues related to religious and political beliefs. This test exemplifies a multimethod design which provides a variety of ways to sample each attitude. By providing a number of ways to sample attitude, the likelihood that the total score will be a reliable measure of a generalized opinion is increased.

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[25]Newcomb, Turner and Converse, op. cit., p. 48.

[26]Krech, Crutchfield, and Ballachey, op. cit., p. 217.

[27]McGrath, op. cit.

Recognition of a need for objective measurement instruments that could be administered to large groups of people led to the development of attitude scaling techniques. They are technically superior to questionnaires and provide a method of determining an individual's relative position along a continuum. A single score, summarizing his responses to a series of items, indicates the direction and magnitude of the individual's attitude.

Because the purpose of an attitude scale is to identify direction of and differentiate between varying intensities of attitudes, items must be included which reflect the total range of feelings from very favorable, through neutral, to very unfavorable toward the object being measured. Obviously if a statement is as likely to be endorsed by a person with a positive attitude as with a negative attitude, the statement will not differentiate and should not be included.

Generally speaking there have been two major approaches used to develop attitude scales. The method of equal-appearing intervals, associated with Louis L. Thurstone, involves the use of a judging group to obtain scale values for the items. The method of summated ratings depends upon the responses of agreement or disagreement given by a pilot group of subjects to the original pool of items. There is no attempt to give scale values to the items. Likert-type scales, named after the originator of the summated rating method of scale construction are the most widely known.

The main purpose of Thurstone's technique is to divide the continuum between extremes in attitude by building an attitude scale with equal-appearing intervals. For example one might be measuring attitudes toward abortion. The most favorable item on the scale might be, "Abortion for any reason whatsoever should be permitted in all states." The least favorable statement might be "Persons convicted for performing abortions should be imprisoned for life." The remaining items in the scale constructed using the Thurstone technique should be chosen so as to equally divide the psychological range between those two extremes. The procedure for constructing and administering a Thurstone scale is as follows.[28] First a large number of statements are collected which express an opinion about the attitude object in question (100 statements or more are usually used). These statements should be as unambiguous as possible, and should cover the entire continuum of attitude toward the object from extreme favorableness to extreme unfavorableness.

The attitude statements are then given to a large number of judges (it's usually desirable to have a hundred or more) who are instructed to sort the statements into eleven piles in such a way that the opinions the piles represent seem to be spaced along a continuum at intervals which are, in his opinion equal. The pile at one end will contain the statements which

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[28]Remmers, op. cit., pp. 87-90.

express an extremely favorable attitude toward the object; while the pile at the other end contains the statements which express an extremely unfavorable attitude. The middle or sixth pile is for statements which express a neutral attitude.

Distributions are tabulated for each statement showing the frequency with which it appeared in each of the eleven categories. The median and Q (distance between the 25th and 75th percentile points) are determined and serve as criteria for building the attitude scale. The median judgment for an item is taken as the scale value for that item. The statistic Q serves as a measure of fault in the statement. The smaller the Q, the more closely in agreement were the judges about the position of a statement along the continuum. If the Q is large, relative disagreement among the judges and unsuitability for use in the attitude scale is indicated.

The attitude scale is now built up by choosing a number of statements with low Q-values whose scale values represent all eleven places along the continuum. A subject whose attitude is to be measured is instructed to read each statement and check each one he would endorse as expressing his opinion and attitude. The subject's attitude score is the mean or median of the scale values of the statements he checked. If a scale had perfect internal consistency and the items were perfectly reliable, the subject would check only statements within a very narrow range on the scale where his true attitude fell. In practice this does not generally occur as the statements do not have the same scale values for every individual tested.

While the purpose of the Thurstone technique was to divide the total range of the attitude continuum into equal-appearing intervals, Likert was concerned with the unidimensionality of the measure.

The method of summated ratings or the Likert technique applies item analysis procedures borrowed from test construction techniques to attitude scaling. The procedure is as follows.[29]

First a large number of statements are collected which refer directly to the attitude object or in the opinion of the investigator are related to the attitude to be measured.

The items are put in the form of a questionnaire with each item being given multiple response categories of strongly agree, agree, undecided, disagree, and strongly disagree. The questionnaire should be constructed so that for about half of the statements an "agree" response represents favorableness toward the attitude object and for the other half a "disagree" response represents favorableness.

The experimental instrument is administered to a large group of subjects (generally 100 or more) who are asked to indicate their own attitude toward each item by marking the response which most nearly expresses their feeling on that item. Arbitrary weights (1,2,3,4,5) are assigned to the five response categories so that the highest weight always tends toward one

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[29]Remmers, op. cit., pp. 94-95.

end of the attitude continuum. A subject's score is the sum of the weights assigned to the responses he made.

Next the items are analyzed for their power to discriminate with respect to the measurement of the attitude in question. This may be done by any one of a number of item-analysis procedures. The simplest is to take the top and bottom 10 percent (or 27 percent or any other percent) of subjects on the distribution of total scores and calculate the mean of the responses to each item for each of the two groups of subjects. The items which show the greatest discrepancy in mean response between the high and low groups are the items which most highly discriminate. More sensitive indices of item discriminating power can be obtained by using the phi coefficient, multiserial correlation, or other item test correlation procedures.

The final attitude scale is constructed by choosing the twenty or twenty-five items which have the greatest discriminating power. The items are used with the same five "agree-disagree" response categories and scoring is the same as it was for the experimental instrument.

It must be remembered that the interpretation of Likert scores is based on the distribution of sample scores. Since a score has meaning only in relation to scores earned by others in the sample, the scale should be standardized on a sample taken from the target population.[30]

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[30]Shaw and Wright, op. cit., p. 25.

In comparing the Thurstone and Likert techniques, four areas are often considered in the literature: influence of the judging group, simplicity of the Likert method, reliabilities of the two methods, and the need for a judging group.

Murphy and Likert[31] contended that the attitudes of the judging group may influence the scale values of items when the Thurstone method is used. Studies by Hinckley,[32] Ferguson,[33] Pinter and Forlano,[34] seemed to indicate that the attitude of the judging group was not a seriously disturbing factor. Edwards and Kinney[35] however, were not satisfied with the evidence on this point as they felt that research so far, had neglected ego-involved attitudes and the bearing they might have upon scale values of items.

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[31]G. Murphy and R. Likert, Public Opinion and the Individual (New York: Harper, 1937), p. 26.

[32]E. D. Hinckley, "The Influence of Individual Opinion on Construction of an Attitude Scale," Journal of Social Psychology, III (August, 1932), 294.

[33]L. W. Ferguson, "The Influence of Individual Attitude on Construction of an Attitude Scale," Journal of Social Psychology, VI (February, 1935), 117.

[34]R. Pinter and G. Forlano, "The Influence of Attitude Upon Scaling of Items," Journal of Social Psychology, VIII (1937), 44.

[35]Allen L. Edwards and Kathryn Claire Kenny, "A Comparison of the Thurstone and Likert Techniques of Attitude Scale Construction," In Fishbein (Ed.) Readings in Attitude Theory and Measurement (New York: John Wiley and Sons, Inc., 1967), p. 255.

In regard to the simplicity of the Likert method, Hall,[36] Rundquist and Sletto,[37] and Edwards and Kinney[38] agreed that it is easier and less time-consuming to use than the Thurstone. Bird, on the other hand, raised some objections that the Likert technique was less laborious.

> Will the experimenter spend more time, too, in scoring every item and summating them in these long scales than another might spend determining the mean or median value by the Thurstone technique? Then too, is it actually less time-consuming to validate items in terms of selected groups than to determine the Q values from a curve or a distribution of scores? The claim of greater or lesser laboriousness seems to have been put forward without due regard for all processes in scaling techniques; but, in the interest of constructing refined measuring instruments, time can be neglected. There is much to be said in favor of a psychologist's refining his instrument before actually applying it to experimental groups. The argument that the method of summated ratings is less laborious limps badly.[39]

In an age when computers can rapidly process large amounts of data, choosing one technique over the other merely on the basis of simplicity or time required makes little sense.

Ferguson has quoted Thurstone as reporting that the reliabilities of scales constructed by the method of equal-appearing intervals under his editorship, as being "all over .8, most of them being over .9." In his own research using the same

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[36]O. M. Hall, "Attitudes and Unemployment," Archives of Psychology, New York, 1934, No. 165, p. 6.

[37]E. A Rundquist and R. F. Sletto, Personality in the Depression (Minneapolis: University of Minnesota Press, 1936), p. 5.

[38]Edwards and Kinney, op. cit., p. 251.

[39]C. Bird, Social Psychology (New York: Appleton-Century, 1940), p. 161.

technique, Ferguson reported reliabilities ranging from .52 to .80 for the 20-item forms and from .68 to .89 for the 40-item forms.[40] Taken as representative, they can be compared with studies which used Likert-type scales. Studies done by Hall,[41] Murphy and Likert,[42] Rundquist and Sletto,[43] and analyzed by Edwards and Kinney indicated that there is no longer any reason to doubt that scales constructed by the Likert technique and containing fewer items will yield reliabilities as high or higher as those constructed using the Thurstone method.[44]

In reference to the need for a judging group, Edwards and Kinney state:

> It is true that Likert-selected items tend to be those which would fall at one or the other extreme on the Thurstone continuum, if scaled according to the Thurstone technique. But the implication of this finding is more theoretical than practical as far as the need for a judging group is concerned. The important problem is whether scores obtained from the two differently constructed scales are comparable and the evidence at hand indicates that they are. As far as we can determine there is nothing of a practical nature to indicate that a judging group, in the Thurstone sense, is a prerequisite for the construction of an adequate scale.[45]

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[40]L. W. Ferguson, "The Requirements of an Adequate Scale," Psychological Bulletin, XXXVI (1939), 670.

[41]Hall, op. cit., p. 19.

[42]Murphy and Likert, op. cit., p. 48.

[43]Rundquist and Sletto, op. cit., p. 110.

[44]Edwards and Kinney, op. cit., p. 252.

[45]Ibid., p. 255.

When all is said and done, the decision to use Likert or Thurstone, as Edwards and Porter point out is, largely a matter of personal choice.

> There is some evidence to show that if the same set of items is used to construct attitude scales by both the judgment and the response methods, scores on the two scales will be highly correlated. Both types of scales tend to have relatively high reliability coefficients and choice of method is more or less arbitrary. Both types of scales provide for a relatively wide range of scores, and consequently relatively good measures of individual differences.[46]

Although the Likert and Thurstone techniques are the most frequently used, the Bogardus, Semantic Differential, and Q-sort techniques enjoy some measure of popularity and thus descriptions of them are included.

The Bogardus scale[47] is an attempt to measure social distance or the closeness of the relationship to which an individual is willing to admit members of designated social groups. Bogardus, interested in looking at prejudicial attitudes, proceeded on the assumption that an individual's degree of prejudice toward a group could be measured by assessing the social distance that an individual wished to keep between himself and a given group. The scale consisted of seven statements, each indicative of a certain "social distance". The statements are:

1. Would admit to close kinship by marriage.
2. Would admit to my club as personal chums.

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[46]Edwards and Porter, op. cit., pp. 128-129.

[47]E. S. Bogardus, "Measuring Social Distance," Journal of Applied Sociology, IX (1925), 299-308.

3. Would admit to my street as neighbors.
4. Would admit to employment in my occupation.
5. Would admit to citizenship in my country.
6. Would admit as visitors only in my country.
7. Would exclude from my country.

Subjects taking this Scale were asked to mark, for each ethnic group, the statement that best represented his feelings toward the group.

One of the questions raised concerning the Bogardus scale centers upon the psychological distance between statements. Is the difference for example between 1 and 2 the same as the difference between 2 and 3? Another question concerns the ordering of steps along the continnum. Marking one number also indicates acceptance of the statements below it. There are instances however, when one might accept a person as a neighbor, but not wish to have that person employed in the same occupation.

Because an attitude scale is essentially a one-dimensional measure, it cannot readily represent complex attitudinal systems. To overcome this limitation of an attitude scale, Osgood, Suci, and Tannenbaum[48] developed a multidimensional approach called the Semantic Differential. It has gained widespread popularity in recent years because constructing it involves a minimum of time and effort. The Semantic Differential is an objective means for measuring the connotative meaning an individual attaches to a concept. Subjects rate a

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[48]Osgood, Suci, and Tannenbaum, op. cit.

given concept on a series of seven-point bipolar adjectives. Osgood identified three dimensions of meaning: evaluative- whether individual views the concept favorably or unfavorably (good-bad, fair-unfair), potency- the individual's perception of the concepts's power (strong-weak, large-small), and activity (active-passive, fast-slow). Although the evaluative dimension is the strongest, inclusion of potency and activity dimensions provide more information about an individual's attitude.

There may be little correspondence between the rating of a concept on the different dimensions. While high scores on the evaluative dimension reflect favorable attitudes, high scores on the other dimensions may carry different meanings. The procedure for constructing a Semantic Differential is as follows:

1. Determine the concept(s) to be rated. The number and type chosen will depend on the problem being investigated.
2. Choose appropriate bipolar scales. (At least three scales each from the Evaluative, Potency and Activity dimensions are recommended.)
3. Design response sheets:
   a. Use one page per concept to be rated.
   b. List the concept at the top of the page. Concept orders for different respondents may be randomized.
   c. Place bipolar scales below the concept name.
      1) Ordering of scales on consecutive pages remains fixed.
      2) A constant polarity direction for each scale is maintained on consecutive pages.
      3) Scales drawn from a single dimension are alternated in polarity direction (e.g., good-bad, worthless-valuable).
      4) The order of scales representing different dimensions is rotated.

Example

good	__:__:__:__:__:__:__:	bad
mild	__:__:__:__:__:__:__:	intense
active	__:__:__:__:__:__:__:	passive
interesting	__:__:__:__:__:__:__:	uninteresting
worthless	__:__:__:__:__:__:__:	valuable
strong	__:__:__:__:__:__:__:	weak
slow	__:__:__:__:__:__:__:	fast
colorless	__:__:__:__:__:__:__:	colorful
fair	__:__:__:__:__:__:__:	unfair
shallow	__:__:__:__:__:__:__:	deep
restless	__:__:__:__:__:__:__:	quiet

4. Write instructions, to include:
   a. General orientation to the task.
   b. The significance of the scale positions and how to mark them.
   c. Attitude toward the task (speed, first impressions, independence of judgments).[49]

In analyzing the data quantitatively, one can assign values from -3 to +3 or from 1-7 to the rating intervals lying between adjective pairs so that -3 or 1 is closest to the adjective representing negative evaluation and +3 or 7 is closest to the adjective representing positive evaluation. Individual scores are assigned according to the scale positions he has checked. By averaging his scores for the sub-group of scales belonging to each dimension an individual's rating of the concept on each of the three dimensions is determined. On a scale with weights from -3 to +3 an individual's score might be evaluative 3, potency .5 and activity 2.1.[50]

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[49]Edwards and Porter, op. cit., p. 132.

[50]Edwards and Porter, op. cit., p. 133.

The Q-sort, developed by Stephenson,[51] is most frequently used in personality assessment but may be used to assess attitudes. Its purpose is to obtain a picture of an individual's unique view of the psychological object under consideration. To obtain this picture, an individual is asked to sort a large number of statements relevant to the attitude being assessed into piles reflective of a range of opinion. This procedure is similar to the judging process used in the Thurstone technique for constructing a scale. Following are the steps for constructing and administering a Q-sort:

1. Determine the criterion by which sorting is to take place (e.g., degree to which the item describes the sorter; agreement/disagreement with the item, etc.).
2. Collect items (sentences, phrases or words) relevant to the task. Usually from 50-100 items are used.
3. Determine the number of categories or intervals into which items will be sorted.
4. Determine the number of items to be placed in each category such that the final distribution approximates a normal curve. For instance, if 60 statements are to be sorted into seven categories, the number of items to be placed in each category would be assigned as follows:

	Strongly disagree					Strongly agree	
Category	1	2	3	4	5	6	7
Number of items	3	6	12	18	12	6	3

5. Give cards containing one item each to the subject, with instructions for sorting according to 1) the criterion, 2) the number of piles, 3) the number of cards to be sorted into each pile.[52]

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[51]W. Stephenson, The Study of Behavior: Q-technique and Its Methodology (Chicago: University of Chicago Press, 1953).

[52]Edwards and Porter, op. cit., pp. 129-130.

Scores are assigned to the successive categories according to the degree of favorableness of items to be sorted into each of the categories. For example, if seven categories were used the one containing the least favorable statements would receive a score of 1 and the most favorable statements a score of 7. Individual statements receive the score assigned to the category into which they are sorted.

Q-sorts may be administered to an individual more than once to assess changes in attitude that may have occurred over a period of time or as a result of an experimental treatment given between measures.

Guttman Scalogram Analysis

Although many techniques have been developed for the construction of scales to measure attitudes there is still concern that the scales developed measure one and only one attitude. In fact, Guttman states:

> One of the fundamental problems facing research workers in the field of attitude and public opinion measurement is to determine if the questions asked on a given issue have a single meaning for the respondents. Obviously, if a question means different things to different respondents, then there is no way that the respondents can be ranked in order of favorableness. Questions may appear to express but a single thought and yet not provide the same kind of stimulus to different people. The responses, even to the simplest question can differ in kind as well as in degree.[53]

Scalogram analysis is quite different from the Thurstone, Bogardus, Likert, Semantic Differential, and Stephenson

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[53]Louis Guttman, op. cit., p. 60.

techniques described previously. Actually it is not a method for constructing or developing an attitude scale.

> In practice, scalogram analysis can perhaps be most accurately described as a procedure for evaluating sets of statements or existing scales to determine whether or not they meet the requirements of a particular kind of scale, set forth in some detail by Guttman. We shall refer to this particular kind of scale as a Guttman scale or a cumulative scale.[54]

The basic idea of the cumulative nature of Gottman scaling is conveyed with an illustration suggested by Stouffer and described by Newcomb, Turner and Converse.[55] Picture a spelling test consisting of three words: catastrophe, cattle, and cat. Because of the marked difference in difficulty, a certain kind of consistency would be expected in the responses. If an individual can spell catastrophe it is likely that he can spell the two easier words too. If he can spell only two of the words, we know which two they are; if he can spell only one word we know which one that is.

It is not known in advance if a given set of attitude statements will fall along a single attitude continuum from most to least favorable. If one starts with the hypothesis that the statements do fall along a single attitude continuum, it is the purpose of scalogram analysis to determine whether the responses of the subjects to a set of statements are in

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[54]Allen L. Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century-Crofts, Inc., 1965), p. 172.

[55]Newcomb, Turner and Converse, op. cit., p. 506.

accord with that hypothesis. If for example in a set of five attitude statements it was found that all people who agree with four statements do so with respect to the same four; that all who agree with three statements do so with respect to the same three and that those three are among the four statements agreed with by those individuals who agree with four and so on, then those results strongly indicate that the five statements are unidimensional.

Besides a priori trying to select items along a single attitude dimension, an attempt should be made to include statements at both extremes of the attitude continuum.

> As in the case of all attitude statements to be included in a scale, an important test for each statement is whether or not one can expect subjects with varying attitudes toward the psychological object to respond differentially to the statements. If it can be inferred that an "agree" (or disagree) response will be given by subjects with more favorable attitudes and a "disagree" (or agree) response by subjects with less favorable attitudes, then a statement may be judged satisfactory.[56]

After the scale has been constructed weights are assigned to the items as follows. If the items are dichotomous, the weights of 0 and 1 are assigned to the two categories. The 1 is assigned to the response which indicates the more favorable attitude toward the object; the 0 is assigned to the response indicating the less favorable attitude. In the case of trichotomous items such as those with the response categories agree, uncertain, and disagree, weights of 2, 1, and 0 are

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[56]Edwards, op. cit., p. 178.

assigned. Again the largest weight is assigned to the most favorable response, and the 0 to the least.

Scores are totaled for each individual according to the weights assigned to the responses he made. After the scores are totaled individuals are ranked from high to low.

It may be said here that Guttman prefers ranking individuals rather than items because the ranking of items is restricted to dichotomous items where an individual either does or does not endorse a statement. If the items scale, an individual who endorses an extreme statement should also endorse all less extreme statements. However, if there are more than two categories of a response such a consideration breaks down because an "agree" for one item might be equivalent to or even less favorable than an "uncertain" to another item. Ranking items then is a problem. According to Guttman, the ranking of people:

> ... provides a more general approach to the problem of scaling, since it turns out to be equivalent to the ranking of items when all items are dichotomous, and it also includes the case where items have more than two answer categories.[57]

If a true scale exists for the attitude measure:

> ... a person with a more favorable attitude score than another person must also be just as favorable or more favorable in his response to every statement in the set than the other person. When responses to a set of attitude statements meet this requirement, the set of statements is said to constitute a unidimensional scale.[58]

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[57]Guttman, op. cit., p. 62.

[58]Edwards, op. cit., p. 172.

A perfect scale has perfect reproducibility. This means that it is possible to reproduce the responses of the individuals to the various statements in terms of their total scores alone. Guttman has stated though that, "Perfect scales are not to be expected in practice."[59]

Since perfect reproducibility cannot be expected in practice it is important to measure the degree of reproducibility possible for a given set of statements. To do this, cutting points are established for the response categories of each statement. A cutting point is:

> ... that place in the rank order of subjects where the most common response shifts from one category to the other.[60]

Guttman suggests two rules for establishing cutting points. The cutting point should minimize error, and no category should have more error in it than non-error.[61] In a set of statements with perfect reproducibility, all responses above the cutting point for a statement would fall in the same category and all those below would fall in the other category. When perfect reproducibility does not exist, some responses fall outside of the category in which they theoretically belong and are considered errors.

Errors are an indication that a given scale deviates from a perfect scale. The degree to which a scale deviates is measured by a coefficient of reproducibility. The

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[59]Guttman, op. cit., p. 64.

[60]Edwards, op. cit., p. 181.

[61]Ibid.

coefficient of reproducibility is determined by:

> ... counting up the number of responses which would have been predicted wrongly for each person on the basis of his scale score, dividing these errors by the total number of responses and subtracting the results from 1.[62]

Simply expressed the formula for the coefficient of reproducibility is:

$$R = 1 - \frac{\text{number of errors}}{\text{number of responses}}$$

For example if the attitude measure contained 20 items and was administered to 20 people, the total number of responses would be 400. If there were 40 scaling errors the coefficient of reproducibility would be calculated thus:

$$R = 1 - \frac{40}{400} = 1 - .10 = .90$$

.90 reproducibility is the point most frequently cited in the literature on Guttman scaling as the base for scalability. This figure refers to the coefficient of reproducibility for dichotomous items, however, and a figure of .85 is usually considered acceptable for scales having items with three or more response categories.

Care must be taken to avoid spurious coefficients of reproducibility. To prevent a spuriously low coefficient of reproducibility, Guttman suggests that in establishing the cutting point at which a pattern of response shifts, no resultant response category should contain more error than

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[62]Guttman, op. cit., p. 77.

non-error.[63] In addition, Torgerson suggests that:

> While it is desirable to have a considerable range of marginals, items with extreme marginals tend to make the value of Rep [reproducibility] spuriously high. Hence, few, if any, items should have more than 80 percent of the subjects in their most popular category.[64]

If all the items on an instrument are dichotomous and analysis fails to indicate a sufficiently high coefficient of reproducibility the hypothesis that the measure is scalable has to be rejected. If there are more than two response categories, however, and the criteria for scalability are not met on the first trial, there may be an explanation for the failure other than unscalability.

> It has seldom been found that an item with four or five categories will be sufficiently reproducible if the categories are regarded as distinct. One reason for this is the verbal habits of people. Some people say "strongly agree" where others say "agree," whereas they have essentially the same position on the basic continuum but differ on an extraneous factor of verbal habits. By combining categories, minor extraneous variables of this kind can be minimized.[65]

Collapsing is the term usually given to the combining of categories.

If in the original scalogram the recorded weights in a given column appear to overlap considerably, the categories of response for these weights may be combined. The combined categories then are reweighted. Assume that in the original

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[63]Louis Guttman, "The Cornell Technique for Scale and Intensity Analysis," Educational and Psychological Measurement, VII (Summer, 1947), 261.

[64]Warren S. Torgerson, Theory and Methods of Scaling (New York: John Wiley and Sons, Inc., 1958), p. 324.

[65]Guttman, "The Cornell Technique of Scale and Intensity Analysis," op. cit., p. 256.

scalogram we had five response categories weighted 4, 3, 2, 1, and 0. If the categories of 4 and 3 were combined and the categories of 2 and 1 were combined, a response of 4 and 3 to the original statement would now be given a weight of 2 and a response of 2 or 1 would now be given a weight of 1. The original weight of 0 would remain 0. Papers would then be rescored and a new ranking would probably occur. Hopefully, an acceptable coefficient of reproducibility would now result. If not, the process of collapsing response categories can be repeated until all items have been reduced to dichotomies.[66] Whenever the criteria for scalability are satisfied one can accept the hypothesis he set out to test.

Attitude and Behavior

Attitudes are viewed as in some way being related to behavior. The relationship is most often viewed as being a causal one. One's behavior depends upon or is at least influenced by his attitudes. If nothing else there should at least be consistency between one's attitudes and one's behavior. However, studies which have attempted to investigate the relationship between attitudes and behavior have generally found a lack of correspondence between overt behavior and verbally expressed attitudes. Due to inconsistent research findings, some authors question the idea that there is a relationship between attitude and behavior. Some attribute the

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[66]Remmers, op. cit., p. 117.

inconsistency of findings to the measuring instrument (Cook and Sellitz[67]); others question the definition of attitude (DeFleur and Westie[68]). Still others such as Katz and Stotland[69] question both the measuring instrument and the definition of the concept.

One of the first attempts to examine the relationship between expressed attitude and behavior was the classic study by LaPiere.[70] LaPiere traveled throughout the United States with a young Chinese couple. They stopped at many motels, hotels and restaurants and in more than 250 instances, they were refused service only once. In a follow-up study, LaPiere sent questionnaires to the establishments they had visited asking whether they would accept Chinese guests. Approximately 92% said "No" and except for one "Yes" reply the remainder answered "Uncertain; depends upon circumstances." Similar results were obtained from a control group of establishments not visited by LaPiere and his friends. A comparable study by Kutner, Wilkens and Yarrow[71] found that many restaurant owners who failed to answer a request for reservations for a group including some Negroes did serve a group composed of two white women and one Negro woman when they actually appeared in person.

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[67]Cook and Sellitz, op. cit., p. 37.

[68]DeFleur and Westie, op. cit., p. 29.

[69]Katz and Stotland, op. cit., p. 454.

[70]LaPiere, op. cit., pp. 230-237.

[71]Kutner, Wilkens, and Yarrow, op. cit.

In many of the studies which looked at relationships between attitudes and behavior, the authors mention intervening variables as possible explanations for the discrepancies. Situational variables are the intervening variables most often identified. Because of the recognized influence of situational variables some authors conclude that what determines behavior is not attitude but rather situational characteristics (e.g., Blumer,[72] DeFleur and Westie,[73] Raab and Lipset,[74] and Rose[75]).

However, rather than abandon the assumption that there is a relationship between attitudes and behavior researchers such as Insko,[76] and Jahoda and Warren[77] focus on the need to reconceptualize the relationship, Rokeach,[78] in his discussion of the nature of attitudes, rejects the notion that attitudes and behavior are not related.

Rokeach, as he defines attitude,[79] contends that a person's attitude is organized around an object or a

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[72]Blumer, "Research on Racial Relations in the United States of America," op. cit., p. 427.

[73]DeFleur and Westie, op. cit., p. 28.

[74]Raab and Lipset, op. cit., p. 31.

[75]Rose, op. cit., p. 174.

[76]Insko, op. cit.

[77]Jahoda and Warren, op. cit.

[78]Rokeach, Beliefs, Attitudes and Values, op. cit., pp. 127-128.

[79]"An attitude is a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner." Ibid., p. 112.

situation.[80] It is this aspect of attitude that may come closest to explaining discrepancies between attitude and behavior. In the first instance we refer to a static object which may be concrete or abstract. The object may be an individual, a group, an issue or an institution. The situation is an event or activity in which an individual has certain beliefs about how to behave when the object of the attitude is encountered.

Rokeach points out that although the situation and object are referred to in attitude definitions, researchers have been generally more interested in measuring attitudes toward objects, across situations than in measuring attitude toward situations across objects.[81] Separation of attitude toward-situation from attitude toward-object has "resulted in a failure to appreciate that an attitude object is always encountered within some situation, about which we have an organized attitude."[82]

It is Rokeach's thesis then that an attitude may be focused on either an object (Ao) or a situation (As) and that behavior is a function of at least these two types of attitudes.[83] An implication regarding this thesis is worth noting.

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[80]Ibid., p. 112.

[81]Ibid., p. 118.

[82]Milton Rokeach, "The Nature of Attitudes," op. cit., p. 452.

[83]Ibid., p. 135.

> ... a given attitude-toward-object, whenever activated, need not always be behaviorally manifested or expressed in the same way or to the same degree. Its expression will vary adaptively as the attitude activated by the situation varies with attitude-toward-situation facilitating or inhibiting the expression of attitude-toward-object, and vice versa.[84]

Rokeach warns however, that it is not enough to merely state that behavior is a function of two attitudes. To predict behavior requires a model which takes into account the manner in which the two attitudes will cognitively interact with each other. Rokeach and Rothman[85] have proposed a belief-congruence model to do this.

In the present context, two attitudes, Ao and As, are activated whenever a person encounters an object in some situation. A comparison of the relative importance of Ao and As is also activated. The two attitudes affect on behavior is in direct proportion to their perceived importance with respect to one another. The more important Ao is perceived to be with respect to As the more the behavioral outcome will be a function of Ao. The converse is also true.[86] Rokeach hypothesizes that behavior can be predicted from knowledge of the outcome of the cognitive interaction between Ao and As.

A study conducted by Kleijunas[87] attempted to look at the

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[84]Ibid.

[85]Milton Rokeach and G. Rothman, "The Principle of Belief Congruence and the Congruity Principle as Models of Cognitive Interaction," Psychological Review, LXXII (March, 1965), 128-142.

[86]Ibid., p. 137.

[87]Kleijunas, op. cit.

relationship between attitudes and behavior in light of Rokeach's recent definition of the nature of attitudes and their ability to predict behavior. Results showed that attitudes, properly conceptualized and measured, can be accurate predictors of behavior.

Attitude and the Variables of Sex and Teaching Level

When attitudes of teachers and administrators are examined with respect to the variables of sex and teaching level evidence in the literature indicates that there are significant differences. Lindgren and Patton,[88] in their study found that the attitudes toward children and toward current educational theory of teachers in the lower grades were more favorable than those of high school teachers. They also found that female teacher's attitudes were more favorable than were male teachers.

Beamer and Ledbetter[89] examined the Minnesota Teacher Attitude Inventory (MTAI) scores of 212 students enrolled in graduate courses at North Texas State College. Developed in 1951 at the University of Minnesota, the MTAI is one of the most popular instruments for the measurement of teacher attitudes. Its purpose is to measure those attitudes of a teacher which predict how well he will get along with pupils in

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[88]Lindgren and Patton, op. cit., p. 85.

[89]Beamer and Ledbetter, op. cit., p. 665.

interpersonal relationships, and indirectly how satisfied he will be with teaching as a vocation. The 212 students were subdivided by sex, teaching level, and by experience. The attitudes of the elementary teachers were more favorable than the attitudes of the secondary teachers. Female teachers had more favorable attitudes than did male teachers.

A study by Leeds[90] showed that generally speaking personal factors of sex, grade level, age, training, experience, and subject taught bore little relationship to the attitudes of teachers toward pupils as measured by a Teacher-Pupil Inventory. Although not statistically significant the mean scores of teachers of grades 1-6 were higher than those of teachers of grades 7-12.

Wandt[91] felt that assessment of teacher's attitudes toward groups contacted in the school would provide information useful for assessing the total personality. As part of the Teacher Characteristics Study he:

1. Constructed scales for measuring teacher's attitudes toward groups contacted in the school.
2. Studied the interrelationships of these attitudes.
3. Studied the relationship between attitudes and factors such as experience and grade level.
4. Studied the relationship between verbalized attitudes and overt behavior.
5. Developed disguised measures of teacher's attitudes.

The difference between elementary and secondary teachers was significant with the elementary teachers having the more favorable attitudes.

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[90]Leeds and Cook, op. cit., p. 159.

[91]Wandt, op. cit., p. 117.

In the NEA Nationwide Study of the American Public School Teacher,[92] each teacher in the sample was asked to reveal his attitudes toward teaching in five ways: 1) by estimating teaching load, 2) by estimating degree of tension or strain felt in work, 3) by indicating willingness to again choose teaching as a career, 4) by identifying sources of professional satisfaction and encouragement, and 5) by describing any teaching innovations or experiments initiated during the past year. More men than women reported heavy or extremely heavy teaching loads and more secondary than elementary teachers. Slightly higher percents of men and secondary school teachers than of women and elementary school teachers reported feeling considerable strain. Women and elementary school teachers showed a greater willingness to again choose teaching as a career.

Published in 1960, the Teacher Characteristics Study directed by Ryans[93] included approximately 100 research projects carried out over a six year period. The study, involving more than 6,000 teachers in 1,700 schools included classroom observations as well as paper and pencil inventories. The study was guided by three major objectives.

1. Identification and analysis of patterns of behavior attitudes, viewpoints, and intellectual and emotional qualities which may characterize teachers.
2. Development of paper and pencil inventories appropriate for estimating teacher's classroom behaviors and personal qualities.

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[92]Research Division NEA The American Public School Teacher, op. cit.

[93]Ryans, op. cit.

3. Comparison of various groups.[94]

Trends in the data from the paper and pencil instruments which assessed attitudes, verbal understandings, educational viewpoints and emotional viewpoints were:

1. Attitudes of elementary teachers toward pupils, administrators, fellow teachers and non-administrative personnel were more positive than those of secondary teachers.
2. Educational viewpoints of elementary teachers were more permissive while secondary teachers viewpoints were more traditional.
3. Male teachers at both teaching levels were more emotionally stable than female teachers.

Summary

Literature on the attitudes of teachers and administrators toward various psychological objects with respect to the variables of sex and teaching level revealed a number of studies which indicated that the attitudes of females and elementary school faculty are more positive than the attitudes of males and secondary school faculty. Although attitudes toward instructional development with respect to these variables have yet to be assessed, the literature indicates that they are and continue to be variables worth studying when assessing attitudes.

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[94] Ibid.

CHAPTER III

DESIGN OF THE STUDY

Introduction

The primary purpose of this study was to determine the degree of difference in expressed attitudes toward instructional development which existed within and across three selected groups as a function of: 1) sex, and 2) teaching level. In this chapter, the description of the population, the procedures, the research hypotheses, and the method used for statistical analysis are presented.

The Population

The population for this study was composed of participants in an Instructional Development Institute, students enrolled in the Education 831A course in educational media taught during the winter term of 1972 at Michigan State University, and a group of educators from the East Lansing Public School System.

More specifically, the following three groups compose the sample for this study:

1. The 46 students enrolled in Education 831A during the winter term of 1972 at Michigan State University. Education 831A is a graduate level course in educational media which focuses on the concept of instructional development and provides the students with formal exposure to the concept.

2. Composition of the Instructional Development Institute (IDI) group was predetermined with respect to size and composition. It included teachers, administrators (principals and superintendents), policy makers (board members), and specialists (curriculum, content, media). These 31 persons participated in the Instructional Development Institute program: a function of the National Special Media Institute (NSMI). The IDI is, "a validated training program in ten (10) units (approximately 40 hours) designed to provide teams of teachers, administrators, policy makers, and specialists (TAPS) with initial competencies and skills in applying an instructional systems approach to the development of practical solutions to critical teaching and learning problems."[1] A consortium of four institutions provide leadership for the IDI program. They are: Michigan State University, Syracuse University, the University of Southern California, and United States International University.

3. A control group of 33 educators was selected from the East Lansing, Michigan Public School System. Those selected for this group had received no prior formal exposure to the instructional development concept via a course or in-service workshop. The control group was selected so as to approximate the size, personal and professional characteristics of those in the IDI group.

The results of this study will be generalizable to other populations only to the extent that other populations are similar in characteristics to the population used in this study.

Procedure

The procedure for this study was as follows:

1. Modification of, Attitude Toward Instructional Development, an attitude assessment scale produced under a grant from the United States Office of Education, Bureau of Libraries and Educational Technology, Division of Educational Technology.

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[1]National Special Media Institute, What is an IDI?

2. Guttman Scalogram Analysis was employed to modify the attitude scale. This procedure was used to determine the unidimensionality or presence of a single variable in the instrument.

3. Administration of the modified instrument to the three selected groups.

Instrumentation

Attitude Toward Instructional Development was chosen for use in this study because it is one of the few instruments available designed specifically to assess individual's attitudes toward instructional development. The instrument is a fifty-item Likert-type questionnaire. Data concerning the instrument's unidimensionality and/or validity was not available from NSMI, so the instrument was tested for unidimensionality and scalability.

Guttman Scalogram Analysis was used to determine unidimensionality and scalability. Guttman Scalogram Analysis is not a method for constructing or developing an attitude scale but is a procedure for evaluating an existing scale to see if it is unidimensional and if the statements in the instrument actually form a scale. As Shaw and Wright indicate, there is a high probability of a unidimensional scale being produced when Guttman Scalogram Analysis is applied to an instrument.

> ... these scales are more likely to be unidimensional than scales constructed by other procedures. The scalogram method usually yields scales that are reliable and valid according to the usual estimates of these attributes.[2]

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[2]Shaw and Wright, op. cit., p. 26.

Experimental Procedures

The 50-item Likert-type scale, Attitude Toward Instructional Development (see Appendix A), was administered as a pre-test to 43 students enrolled in Education 831A during the fall term of 1971 at Michigan State University. Each statement in the instrument had five possible responses: strongly agree, agree, undecided, disagree and strongly disagree. Weights from 1 to 5 were assigned to each of the response categories: with a weight of 1 for the response reflecting the least favorable attitude toward instructional development.

Scores were then summed for each individual and the respondents were ranked on the basis of their total scores. If an instrument scales, i.e., is unidimensional, a person with a more favorable attitude (a higher cumulative score), must be just as favorable or more favorable in his response to every statement than a person whose total score indicates a less favorable position. Since perfect scales are not to be expected in practice, the closeness of the scale to perfection must be determined.

To determine the degree to which a scale deviates from perfection, the coefficient of reproducibility is calculated. To do this, cutting points were established for the response categories of each statement. Those responses falling outside the category in which they theoretically belong were considered errors. Errors were summed and the reproducibility index for the entire instrument was then calculated.

$$R = 1 - \frac{\text{number of errors}}{\text{number of responses}}$$

$$R = 1 - \frac{549}{2150} = 1 - .25 = .75$$

The reproducibility index of .75 for the original instrument was well below the acceptable level of .85 specified by Guttman. To eliminate a spuriously low coefficient of reproducibility, items with response categories containing more error than non-error were eliminated. To prevent a spuriously high coefficient of reproducibility, items in which 80 percent or more of the respondents fell into their most popular category were also eliminated.

Twenty-four of the original 50 items now remained. Analysis of the data indicated that the responses to the remaining items fluctuated between strongly agree and agree, and between strongly disagree and disagree, so the categories of response were collapsed and assigned new weights. Questionnaires were then re-scored and the individuals re-ranked according to the cumulative scores based on the new weights. The reproducibility index for the modified instrument was calculated and found to be .85.

$$R = 1 - \frac{155}{1032} = 1 - .15 = .85$$

The modified instrument was then judged to be unidimensional.

Hypotheses

The following hypotheses were generated and tested to determine the degree of difference in expressed attitudes which existed between and within the three groups.

1. Administrators at the K-8 level will exhibit a more positive attitude toward I.D. than will administrators at the 9-12 level.

2. Teachers at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers at the 9-12 level.

   Sub-hypotheses

   2a. Teachers in the IDI group at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers in the IDI group at the 9-12 level.
   2b. Teachers in the 831A group at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers in the 831A group at the 9-12 level.
   2c. Teachers in the control group at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers in the control group at the 9-12 level.

3. There will be a significant difference in the expressed attitudes of the three groups as a result of sex. Females will exhibit a more positive attitude toward I.D. than will males.

   Sub-hypotheses

   3a. Females in the IDI group will exhibit a more positive attitude toward I.D. than will the males in the IDI group.
   3b. Females in the 831A group will exhibit a more positive attitude toward I.D. than will the males in the 831A group.
   3c. Females in the control group will exhibit a more positive attitude toward I.D. than will males in the control group.

Analysis

Guttman Scalogram Analysis was used to analyze the attitude scale for the pre-test and the modified instrument administered to the three selected groups included in the study. The modified scale was administered to the Education 831A class during final examination week. The same scale was

administered to the IDI group at the end of the 40-hour workshop. The scale was administered to the control group during the final examination week although time was not a critical factor as this group had had no formal exposure to the instructional development concept and no treatment was administered.

Univariate analyses of variance were used to determine the differences which existed across and within the three groups as a function of teaching level and as a function of sex.

Summary

The population for this study consisted of three groups: students in the Education 831A class, participants in the Instructional Development Institute, and selected individuals from the East Lansing, Michigan Public School System. A modified version of Attitude Toward Instructional Development was administered to the three groups. The instrument was modified using Guttman Scalogram Analysis. A demographic sheet was devised to obtain information relative to the variables being investigated in this study. This data was gathered at the time the attitude instrument was administered. Scores from the attitude instrument were analyzed using univariate analysis of variance.

CHAPTER IV

ANALYSIS OF RESULTS

This chapter is divided into two sections. The first section will contain the results of the application of Guttman Scalogram Analysis to Attitude Toward Instructional Development, the instrument used in this study. The analysis was done to determine the unidimensionality of the scale. The second section will contain the results of the statistical analysis of the scores generated by the attitudinal measure.

Analysis of Attitudinal Scale

Before administering the instrument Attitude Toward Instructional Development to the population, it was necessary to determine whether or not the instrument was unidimensional, i.e., measuring a single variable. Guttman Scalogram Analysis was used to analyze the attitude instrument. The coefficient of reproducibility for the original instrument was .75. It will be remembered from the previous discussion of Guttman Scalogram Analysis in Chapter 2 that .85 is the generally accepted level for scalability for instruments containing items with multiple response categories. The original instrument was modified according to the procedures outlined by Guttman

and the coefficient of reproducibility of the modified instrument was found to be .85.

The scale was judged to be unidimensional and was subsequently administered to the population. The attitude scores were subjected to statistical analysis.

Statistical Analysis

A univariate analysis of variance was used to test each of the hypotheses and sub-hypotheses for significance.

Attitudes for Administrators by Level

> Hypothesis 1: Administrators at the K-8 level will exhibit a more positive attitude toward I.D. than will administrators at the 9-12 level.

Cell means for the administrators were as follows: K-8 was 90.86, and 9-12 was 72.20. As indicated in Table 1, a comparison of the scores of administrators at the K-8 level with the scores of administrators at the 9-12 level yielded an F-statistic of 6.80183 which is significant at the .05 level. Data supported this hypothesis.

Attitudes of Teachers by Level

> Hypothesis 2: Teachers at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers at the 9-12 level.

Table 2, contains the results of the analysis of variance for teachers by level. Cell means were as follows: K-8 was 83.26, and 9-12 was 81.18. The comparison of scores between teachers at the K-8 level and teachers at the 9-12 level

TABLE 1. Analysis of variance for attitude: administrators by level.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F Statistic	Significance Probability
Between Categories	1380.4190	2	690.2095	6.80183	.006
Within Categories	1826.5333	18	101.4740		
Total	3206.9523	20			

TABLE 2. Analysis of variance for attitude: teachers by level.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F Statistic	Significance Probability
Between Categories	105.7287	2	52.8643	.19714	.822
Within Categories	15016.4407	56	268.1507		
Total	15122.1694	58			

yielded an F-statistic of .19714 which was not significant at the .05 level. This hypothesis was not supported by the data.

> Sub-hypothesis 2a: Teachers in the IDI group at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers in the IDI group at the 9-12 level.

Table 3, contains the results of the analysis of variance for attitudes of teachers in the IDI group as a function of level. Cell means can be found in Table 4. Comparison of the scores of teachers in the IDI group at the K-8 level with those at the 9-12 level, yielded an F-statistic of .98770. This figure was not significant at the .05 level.

> Sub-hypothesis 2b: Teachers in the 831A group at the K-8 level will exhibit a more positive attitude toward I.D. than will teachers in the 831A group at the 9-12 level.

As indicated in Table 5, a comparison of the scores of teachers in the 831A group at the K-8 level with the scores of teachers at the 9-12 level revealed an F-statistic of 2.68247 which was not significant at the .05 level. Cell means are given in Table 4.

> Sub-hypothesis 2c: Teachers in the control group at the K-8 level will exhibit a more positive attitude toward I.D than will teachers in the control group at the 9-12 level.

Table 6, contains the results of the analysis of variance for attitudes of teachers in the control group as a function of level. Cell means are given in Table 4. The comparison of scores between teachers at the K-8 level and teachers at the 9-12 level yielded an F-statistic of 6.46993 which was significant at the .05 level. However, the results indicated significance in a direction opposite that predicted.

TABLE 3. Analysis of variance for attitude: teachers (IDI) by level.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F Statistic	Significance Probability
Between Categories	110.0952	1	110.0952	.98770	.366
Within Categories	557.333	5	111.4666		
Total	667.4285	6			

TABLE 4. Cell means for sub-hypotheses 2a, 2b, and 2c by group and level.

Sub-hypoyheses	Group	Level	Mean
2a	Teachers	K-8	86.33
	IDI	9-12	75.00
2b	Teachers	K-8	93.13
	831A	9-12	81.73
2c	Teachers	K-8	64.77
	Control	9-12	80.57

TABLE 5. Analysis of variance for attitude: teachers (831A) by level.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F Statistic	Significance Probability
Between Categories	1250.8324	2	625.4162	2.68247	.083
Within Categories	7693.9174	33	233.1490		
Total	8944.7500	35			

TABLE 6. Analysis of variance for attitude: teachers (control) by level.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F Statistic	Significance Probability
Between Categories	982.1676	1	982.1676	6.46993	.023
Within Categories	2125.2698	14	151.8049		
Total	3107.4375	15			

Attitudes by Sex

Hypothesis 3: Females will exhibit a more positive attitude toward I.D. than will males.

The results of the analysis of variance for attitudes of males and females is contained in Table 7. The cell mean for females was 84.25; for males, 81.09. Examination of the results reveals that an F-statistic of .84995 was obtained. This figure was not significant at the .05 level; thus data does not support the hypothesis.

Sub-hypothesis 3a: Females in the IDI group will exhibit a more positive attitude toward I.D. than will the males in the IDI group.

Cell means are given in Table 8. Comparison of the scores of females in the IDI group with those of males in the IDI group yielded an F-statistic of 3.09912 as indicated in Table 9. This figure was not significant at the .05 level.

Sub-hypothesis 3b: Females in the 831A group will exhibit a more positive attitude toward I.D. than will males in the 831A group.

As indicated in Table 10, a comparison of the scores of females in the 831A group with the scores of males in the 831A group revealed an F-statistic of 2.34726 which was not significant at the .05 level.

Sub-hypothesis 3c: Females in the control group will exhibit a more positive attitude toward I.D. than will males in the control group.

Table 11, contains the results of the analysis of variance for attitudes of females and males in the control group. The comparison of scores between females and males in the control group yielded an F-statistic of .97405 which was not significant at the .05 level.

TABLE 7. Analysis of variance for attitude: sex.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Squares	F Statistic	Significance Probability
Between Categories	182.9481	1	182.9481	.84995	.359
Within Categories	23246.4700	108	215.2450		
Total	23429.4181	109			

TABLE 8. Cell means for sub-hypotheses 3a, 3b, and 3c by group and sex.

Sub-hypotheses	Group	Sex	Mean
3a	IDI	Female	88.40
		Male	81.09
3b	831A	Female	89.70
		Male	82.80
3c	Control	Female	74.65
		Male	79.84

TABLE 9. Analysis of variance for attitude: sex (IDI).

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F Statistic	Significance Probability
Between Categories	379.1296	1	379.1296	3.09912	.089
Within Categories	3547.7090	29	122.3347		
Total	3926.8387	30			

TABLE 10. Analysis of variance for attitude: sex (831A).

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F Statistic	Significance Probability
Between Categories	537.0006	1	537.0006	2.34726	.133
Within Categories	10066.2384	44	228.7781		
Total	10603.2391	45			

TABLE 11. Analysis of variance for attitude: sex (control).

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F Statistic	Significance Probability
Between Categories	212.7273	1	212.7273	.97405	.331
Within Categories	6770.2423	31	218.3949		
Total	6982.9696	32			

Summary

Guttman Scalogram Analysis was used to determine the unidimensionality of the instrument Attitude Toward Instructional Development. The original 50-item instrument did not possess a sufficiently high coefficient of reproducibility. Thus it was modified according to the procedures outlined by Guttman with the resulting instrument containing twenty-four items. The modified instrument was judged to be unidimensional and was administered to the population. Scores for each individual were summed and submitted to statistical analysis.

One hypothesis was found to be significant when tested at the .05 level using an analysis of variance. Administrators at the K-8 level had significantly higher scores than did those at the 9-12 level. Though one sub-hypothesis was significant at the .05 level, it was significant in a direction opposite that predicted. Teachers in the control group at the 9-12 level had significantly higher scores than did teachers at the K-8 level. However, because of multiple tests, this result must be interpreted with caution. Table 12, contains a summary of the results of the hypotheses and sub-hypotheses tested.

TABLE 12. Hypotheses and sub-hypotheses tested, F statistic, and significance probability.

Hypothesis or Sub-hypothesis	F-statistic	Significance Probability (.05 level)
1	6.80183	.006
2	.19714	.882
2a	.98770	.336
2b	2.68247	.083
2c	6.46993	.023
3	.84995	.359
3a	3.09912	.089
3b	2.34726	.133
3c	.9705	.331

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to determine the difference in expressed attitudes toward instructional development between males and females, and between elementary and secondary school teachers and administrators.

Literature on the attitudes of educators toward various psychological objects with respect to the variables of sex and teaching level revealed a number of studies which indicated that the attitudes of females are more positive than the attitudes of males and the attitudes of elementary school faculty are more positive than the attitudes of secondary school faculty. Although no studies were found which assessed attitudes toward instructional development with respect to the variables of teaching level and sex, the literature indicated that they are variables worth investigating when attitudes are assessed.

The population for this study consisted of 31 participants in an Instructional Development Institute (IDI), 46 students enrolled winter term, 1972, in the Education 831A course in educational media at Michigan State University, and a group of 33 educators from the East Lansing Public School

System. IDI participants (teachers, administrators, policy makers, and specialists) had taken part in a 40-hour program designed to provide them with initial competencies and skills in applying an instructional systems approach to the development of solutions to teaching and learning problems. Education 831A is a graduate level course which provides the students with formal exposure to the instructional development concept. The control group of educators from the East Lansing Public School System had had no formal exposure to the instructional development concept.

Prior to the administration of the modified instrument to the population used in this study, the original 50-item Likert-type instrument, Attitude Toward Instructional Development was given as a pre-test to 43 students enrolled in Education 831A at Michigan State University during the fall term of 1971. The original instrument was modified according to procedures of Guttman Scalogram Analysis and was found to be unidimensional.

Univariate analyses of variance were used to determine the differences which existed across and within the three groups as a function of teaching level and also of sex. Hypotheses were tested at the .05 level.

Conclusions

Data analysis supports the following conclusions:

1. The attitude toward instructional development of administrators at the K-8 level was significantly more positive

than the attitude of administrators at the 9-12 level.

2. No significant difference in attitude toward instructional development was found between teachers at the K-8 level and teachers at the 9-12 level when compared irrespective of groups. When attitude toward instructional development of teachers at the K-8 level was compared to the attitude of teachers at the 9-12 level with respect to the groups the teachers were in, one group showed a significant difference. Teachers at the 9-12 level in the control group had significantly more positive attitudes than did teachers at the K-8 level.

3. No significant difference in attitude toward instructional development was found when males and females were compared irrespective of groups. When the attitude toward instructional development of males was compared to that of females with respect to the groups the individuals were in, no significant difference was found.

Discussion of Results

Although administrators at the K-8 level had significantly more positive attitudes toward instructional development than did administrators at the 9-12 level, no significant differences were found overall between teachers at the K-8 level and teachers at the 9-12 level. Teachers in the control group at the 9-12 level were found to have significantly more positive attitudes than teachers at the K-8 level. This finding should

be interpreted with caution however since no differences were found overall between teachers at the two levels. The difference found in the control group is probably attributable to chance.

Recommendations

1. This study should be replicated using a sample randomly assigned to treatment groups and selected from a larger population.

2. In this study the experimenter had no control of the treatment the subjects received. In a future study, the experimenter could choose various methods of presenting the concept of instructional development to the subjects and then randomly assign subjects to one of the methods chosen.

3. A study similar to this one but using a pre-test-posttest design would not only reveal attitudes toward instructional development but would show shifts in attitude as well. As Rogers has stated (see Chapter I), attitudes intervene between knowledge about an innovation and the decision to adopt the innovation. If instruction in applying the instructional development process is given to educators for the purpose of encouraging them to apply the process to their own instructional problems, it is essential that their attitudes be known. The assessment of attitudes could reveal whether or not positive attitudes were being fostered.

4. Since Rokeach and Kleijunas (see Chapter II), have found that behavior can be predicted from attitudes when the attitudes are assessed with respect to the situation in which they occur, attitudes toward instructional development could be investigated in the context of the educational setting of which the subjects are a part.

5. Another attitude instrument might be developed which would focus on specific aspects of the instructional development process to determine whether or not there are any aspects of the process to which people react negatively. Information of this nature would be valuable to those attempting to encourage educators to engage in the instructional development process.

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APPENDICES

APPENDIX A

ATTITUDE TOWARD INSTRUCTIONAL DEVELOPMENT SCALE

Check One		Check One	
Male	☐	Teacher	☐
Female	☐	Administrator	☐
		Specialist	☐

ATTITUDE TOWARD INSTRUCTIONAL DEVELOPMENT*

Definitions

Instructional Development or I.D. is a system approach to solving instructional problems. It involves a definition stage where the problem and all related instructional elements and resources, including management organization are identified; a development stage where the behavior necessary to solve the problem is specified in measurable terms and a prototype learning experience is developed which employs the most effective methods and media that learning theory and practical experience can suggest; and finally, it involves a testing and application stage where the prototype system is tried out and revised repeatedly until some version(s) successfully teaches the desired behavior. Only then is the resulting system used by teachers who have been thoroughly trained to use it properly with qualified learners.

Instructions

When you answer the following statements please try to express the way you honestly feel about this idea of instructional development or I.D. Your answer is correct if it expresses your true opinion. PLEASE ANSWER EVERY ITEM. In each case encircle the letter which represents your own ideas as follows:

SA if you agree completely with the statement

A if you agree in general but wish to modify it somewhat

U if your attitude is undecided

D if you disagree but with certain modifications

SD if you completely disagree

*Produced under a grant from the U.S. Office of Education, Bureau of Libraries and Educational Technology, Division of Educational Technology, Media Specialist Program. Produced for the National Special Media Institutes by Jack V. Edling.

1. I.D. should be a part of the professional preparation of all teachers.	SA	A	U	D	SD
2. I.D. places too much emphasis on programming, media and technology.	SA	A	U	D	SD
3. I.D. makes one realize that you have to be specific on problems and objectives to communicate effectively.	SA	A	U	D	SD
4. I.D. really gives primary consideration to the learner's needs.	SA	A	U	D	SD
5. I.D. is a waste of time.	SA	A	U	D	SD
6. I.D. is so significant that it is urgent to promote its wide adoption.	SA	A	U	D	SD
7. I.D. allows each child to start from where he is and progress as far as he is capable.	SA	A	U	D	SD
8. I.D. enables children to find capabilities within themselves that they wouldn't have been able to find without it.	SA	A	U	D	SD
9. I.D. is nothing new.	SA	A	U	D	SD
10. I.D. seems like a better solution to our problems than anything else currently being considered.	SA	A	U	D	SD
11. I.D. will be ineffective unless all members of a team have a thorough understanding of the system and are committed to it.	SA	A	U	D	SD
12. I.D. is a flexible approach that allows for expansion and change.	SA	A	U	D	SD
13. I.D. is simply the old problem-solving method.	SA	A	U	D	SD
14. I.D. is the most challenging idea in education at the present time.	SA	A	U	D	SD
15. I.D. is the only really effective way to evolve a relevant curriculum.	SA	A	U	D	SD
16. I.D. requires too many alternatives to be practical.	SA	A	U	D	SD
17. I.D. enables the teacher to better see the purposes of his instructional program.	SA	A	U	D	SD

18. I.D. cannot be compared with traditional approaches to improving instruction.	SA	A	U	D	SD
19. I.D. will work only when everyone directly involved in instruction is favorable and familiar with it.	SA	A	U	D	SD
20. I.D. requires concentrated effort at first but it becomes less demanding as it becomes better understood.	SA	A	U	D	SD
21. I.D. is something every educator can use.	SA	A	U	D	SD
22. I.D. enables people to better work together to meet the needs of students.	SA	A	U	D	SD
23. I.D. enables teachers to develop new and more effective methods for meeting student needs.	SA	A	U	D	SD
24. I.D. may have some advantages but I haven't been sold completely on it.	SA	A	U	D	SD
25. I.D. is the most productive in-service training that I can conceive.	SA	A	U	D	SD
26. I.D. is the best answer yet for teachers who are looking for an objective method for attacking curriculum problems.	SA	A	U	D	SD
27. I.D. is a boring and uninteresting activity.	SA	A	U	D	SD
28. I.D. is the means to reduce the gap between "what is" and "what should be."	SA	A	U	D	SD
29. I.D. provides a means for "getting a handle" on the problems facing school districts.	SA	A	U	D	SD
30. I.D. can be the change agent that will elevate us from the morass of problems that blind, confuse and befuddle us.	SA	A	U	D	SD
31. I.D. is fine but I couldn't do it by myself.	SA	A	U	D	SD
32. I.D. is right on target--there is no better way or more opportune time than to move on it right now.	SA	A	U	D	SD
33. I.D. enables you to get the most effect for the money available.	SA	A	U	D	SD

34. I.D. has recognized and structured a systematic way to resolve problems and all educators should become committed to it.	SA	A	U	D	SD
35. I.D. is a giant step forward.	SA	A	U	D	SD
36. I.D. really makes one think about all aspects of the educational task.	SA	A	U	D	SD
37. I.D. provides a method to assess the goals of an instructional program realistically in terms of available resources.	SA	A	U	D	SD
38. I.D. has taken curriculum improvement from the abstract to tangible evidence in dealing with educational objectives.	SA	A	U	D	SD
39. I.D. is a procedure that will result in the improvement of an instructional program.	SA	A	U	D	SD
40. I.D. is long overdue--think of how many children we have failed and blamed them for their failure.	SA	A	U	D	SD
41. I.D. is a "must" for every administrator who assumes the role of instructional leader.	SA	A	U	D	SD
42. I.D helps teachers who have had little training on how to plan systematically.	SA	A	U	D	SD
43. I.D. and the resulting more systematic instruction has become essential since the educational process has become so complex.	SA	A	U	D	SD
44. I.D. is not an end in itself, but simply a means that educators can and must use to update schools.	SA	A	U	D	SD
45. I.D. is the best alternative we have to accomplish the task at hand.	SA	A	U	D	SD
46. I.D. seems to be the way to go.	SA	A	U	D	SD
47. I.D. is essential to get the support so often refused because we're always dealing with generalities.	SA	A	U	D	SD
48. I.D. is what we have been needing for years.	SA	A	U	D	SD

49. I.D. will succeed because it places primary emphasis on the learner and learning.	SA	A	U	D	SD
50. I.D. is the nearest thing we have to a panacea in education.	SA	A	U	D	SD

APPENDIX B

ATTITUDE TOWARD INSTRUCTIONAL DEVELOPMENT, MODIFIED SCALE

Please respond to each of the following items in order to provide essential background data.

SEX: Male Female

AGE: Please circle the appropriate age range:

up to 24; 25-29; 30-34; 35-39; 40-44; 45-49; 50-54; 55-59; over 60.

YEARS OF EMPLOYMENT: Please circle the appropriate range of years of your employment in an educational capacity.

None; 1-4; 5-9; 10-14; 15-19; 20-24; 25-29; 30-34; 35-39; over 40.

PRESENT POSITION: Please check your present position(s) in the following list and then indicate the number of years which you have held this position.

(Position)			(years)
Teacher	_____		_____
Administrator	_____	(principal or asst., superintendent or asst.)	_____
Board member	_____	(Trustee, regent, etc.)	_____
Specialist	_____	(counselor, media/library, curr., content)	_____

If other, please list and explain: _____

_____

CURRICULAR RESPONSIBILITY: Please list the subject(s) which you now teach.

(1) _____, (2) _____, (3) _____

TEACHING AND/OR ADMINISTRATIVE LEVEL: Please circle the appropriate level(s).

(K-8); (9-12); if other, specify:_____

DEGREE: Please circle your present degree level: (Bachelor's); (Master's); (Doctoral).

ATTITUDE TOWARD INSTRUCTIONAL DEVELOPMENT

DEFINITIONS:

Instructional Development or I.D. is a systems approach to solving instructional problems. It involves a definition stage where the problem and all related instructional elements and resources, including management organization are identified; a development stage where the behavior necessary to solve the problem is specified in measurable terms and a prototype learning experience is developed which employs the most effective methods and media that learning theory and practical experience can suggest; and finally, it involves a testing and application stage where the prototype system is tried out and revised repeatedly until some version(s) successfully teaches the desired behavior. Only then is the resulting system used by teachers who have been thoroughly trained to use it properly with qualified learners.

INSTRUCTIONS:

When you answer the following statements please try to express the way you honestly feel about this idea of instructional development or I.D. Your answer is correct if it expresses your true opinion. PLEASE ANSWER EVERY ITEM. In each case encircle the letter which represents your own ideas as follows:

SA if you agree completely with the statement

A if you agree in general but wish to modify it somewhat

U if your attitude is undecided

D if you disagree but with certain modifications

SD if you completely disagree

1. I.D. places too much emphasis on programming, media and technology.	SA	A	U	D	SD
2. I.D. really gives primary consideration to the learner's needs.	SA	A	U	D	SD
3. I.D. is so significant that it is urgent to promote its wide adoption.	SA	A	U	D	SD
4. I.D. enables children to find capabilities within themselves that they wouldn't have been able to find without it.	SA	A	U	D	SD
5. I.D. seems like a better solution to our problems than anything else currently being considered.	SA	A	U	D	SD
6. I.D. is the only really effective way to evolve a relevant curriculum.	SA	A	U	D	SD
7. I.D. requires too many alternatives to be practical.	SA	A	U	D	SD
8. I.D. requires concentrated effort at first but it becomes less demanding as it becomes better understood.	SA	A	U	D	SD
9. I.D. is something every educator can use.	SA	A	U	D	SD
10. I.D. is the best answer yet for teachers who are looking for an objective method for attacking curriculum problems.	SA	A	U	D	SD
11. I.D. is the means to reduce the gap between "what is" and "what should be."	SA	A	U	D	SD
12. I.D. provides a means for "getting a handle" on the problems facing school districts.	SA	A	U	D	SD
13. I.D. is right on target--there is no better way or opportune time than to move on it right now.	SA	A	U	D	SD
14. I.D. has recognized and structured a systematic way to resolve problems and all educators should become committed to it.	SA	A	U	D	SD
15. I.D. is a giant step forward.	SA	A	U	D	SD
16. I.D. really makes one think about all aspects of the educational task.	SA	A	U	D	SD

17.	I.D. provides a method to assess the goals of an instructional program realistically in terms of available resources.	SA	A	U	D	SD
18.	I.D. has taken curriculum improvement from the abstract to tangible evidence in dealing with educational objectives.	SA	A	U	D	SD
19.	I.D. is a procedure that will result in the improvement of an instructional program.	SA	A	U	D	SD
20.	I.D. is long overdue--think of how many children we have failed and blamed them for their failure.	SA	A	U	D	SD
21.	I.D. is a <u>must</u> for every administrator who assumes the role of instructional leader.	SA	A	U	D	SD
22.	I.D. and the resulting more systematic instruction has become essential since the educational process has become so complex.	SA	A	U	D	SD
23.	I.D. is the best alternative we have to accomplish the task at hand.	SA	A	U	D	SD
24.	I.D. seems to be the way to go.	SA	A	U	D	SD