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ABSTRACT

A teacher's attitudes toward a given testing procedure in particular, and evaluation and research procedures in general, may adversely affect the children's performance and consequently the resulting data. The UCLA Head Start Evaluation and Research Center found it necessary to design an instrument which would focus on those attitudes of teachers which relate to the conduct of a comprehensive testing program to investigate fully an intervention procedure designed to foster favorable attitudes toward and increased understanding of the evaluation program. The Fishbein Attitude and Beliefs Scale theories, which hold that an individual's attitude towards any object is a function of his beliefs about that object, were selected as the most appropriate. The Teacher Attitudes Toward Evaluation (TATE) was developed and the pilot test indicated that there was a high positive correlation between the attitude toward the object and the obtained measure of the attitude. Subsequent use of TATE in a field study revealed that in almost all cases increases in knowledge about the research or evaluation in progress were paralleled by increases in favorable attitudes toward various components of evaluation. These changes were significantly greater for a group which received feedback, but this was true only on the items related to the intervention itself. Analysis of the responses to the TATE scales is provided and further use of the instrument in evaluation studies is suggested. (PR)

THE DEVELOPMENT OF AN INSTRUMENT TO MEASURE TEACHER ATTITUDES TOWARD EVALUATION (TATE)

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Problem

The attitude of a Head Start teacher with reference to the evaluation and research activities carried out in her classroom is an important factor which can affect the validity of the data collected. How the teacher feels about the kinds of instruments used, the nature of the assessments being made, and the presence of observers underfoot, can have an indirect but appreciable impact on the performance of the children as well as on the ease with which the evaluation can be conducted.

In many cases, opposition is due to misunderstanding about the basic purposes of a testing program, and to misconceptions as to how the test scores are to be used. Often teachers may question the value of removing the child from a meaningful learning activity so that he may be subjected to a lengthy testing session. This is especially irritating when the teacher is kept in ignorance of the child's test performance and is thus unable to design curricula to meet the specific needs revealed by the test results.

During the 1967-1968 evaluation program, the UCLA Head Start Evaluation and Research Center had been charged with the responsibility for developing an instrument to describe curricular variations in on-going Head Start classes. In the course of the preliminary explorations, there

were many opportunities to talk with teachers with greater freedom than was permissible in the classes which were part of the evaluation sample. It was demonstrated with unexpected consistency that teachers who were suspicious and insecure when they were uninformed about what was occurring in their classrooms were able to relax and make many helpful suggestions after the objectives of the observation were clarified. Almost invariably, these teachers became interested in participating in other research and evaluation studies.

Because the relationship with the operating personnel of the Head Start class can be so critical, the UCLA Head Start Evaluation and Research Center proposed an experimental investigation of an intervention procedure designed to foster favorable attitudes toward, and increased understanding of, the national evaluation program. However, in attempting to determine what criterion measures could be used to test the hypotheses of the study, it soon became apparent that no suitable instruments were available.

While there is a voluminous literature on the subject of teacher attitudes, very few investigators have addressed themselves specifically to teachers' attitudes toward evaluation or research. Torbet (1957) measured the attitude of a group of Colorado secondary school teachers toward informal teacher-made tests, using a projective interview. He reported a definite gap between theory of testing, as taught in the standard course in measurement, and actual practice. The general attitude of the

teachers involved was that "testing was an onerous task and an authoritarian weapon." Howard & Berkowitz (1958) measured the reactions of persons to the evaluation of their performances by means of a checker-playing task which supposedly assessed the subject's "effective intelligence." Subjects were given scores reflecting various levels of "favorableness." The results showed that teachers were far more concerned with obtaining reliable and constructive information about their performance than in achieving a "very favorable" rating, per se.

Getzels & Jackson (1963) favor the Minnesota Teacher Attitude Inventory as an instrument which measures with high reliability the attitudes of the teacher toward her pupils as well as the teacher's satisfaction with teaching as a vocation, but the items on this instrument do not include questions about testing. It was therefore necessary to design an instrument which would focus specifically on those attitudes of teachers which relate to the conduct of a comprehensive testing program.

Theoretical Rationale

Most investigators agree that attitudes can be defined as predispositions to respond to a given stimulus or class of stimuli. Further, there is general agreement that attitudes can be characterized as inducing behavior that is either favorable or unfavorable toward the stimulus in question. A way of measuring this type of behavior, called the semantic differential, has been developed by Osgood, Suci, and Tannenbaum (1957). The semantic

differential is based on the assumption that the connotative or affective components of meaning can be measured by the rating of objects or ideas with respect to bipolar adjectives.

In the factor analyses of data derived from this semantic differential procedure, three "super" dimensions, Evaluation, Potency, and Activity, are usually found to carry most of the meaning embedded in the concepts. By far the most important of these factors is Evaluation. That is, knowing whether a concept is perceived as "good" or "bad" appears to be the most significant thing one can know about it.

The importance of the Evaluative dimension in measuring meaning has stimulated a review of the work of earlier investigators. Although in agreement as to the definition of attitude, these investigators have implicitly or explicitly objected to a unidimensional view, that is, a single score to represent the totality of the individual's attitude on a particular subject. Allport (1935) felt that although two individuals might be equally favorable toward an object, they might differ in the amounts of favorableness they felt toward various characteristics or components of that object. In the same vein, Chein (1948) agreed that although two individuals might be equally favorable in their attitude toward an object, they might hold different beliefs about what should be done with regard to the object. The multi-component approach has tended to include in a composite description of the attitude toward a particular subject all the various statements that are manifestations or indications of the attitude. While this procedure

produced many important insights into the structure of attitudes, it has unfortunately resulted in further confounding the relationship between belief and attitude.

Fishbein and Raven (1962) attempted to clarify these two concepts by providing an operational distinction between "belief" and "attitude." Consistent with the theoretical formulations of Osgood, Suci, and Tannenbaum (1957), attitudes are defined as the evaluative dimension of a concept, e.g., is the concept "good" or "bad?" Similarly, beliefs are defined as the probability dimension of the concept, i.e., is the concept "probable" or "improbable?" Another way of distinguishing these concepts is to characterize attitude as the affective and belief as the cognitive component. From this point of view, the specific definitions of attitude and belief can be held independent of each other. Attitude is not defined as including belief, and belief, defined as a probability dimension, can change independently of attitude. Furthermore, two individuals may differ in belief but have similar attitudes.

Proceeding along these lines, Fishbein & Raven have developed the Attitude and Belief (AB) Scales. In this work they have been led to question whether it is enough to measure the perceived probability of existence of a belief, or whether the precise nature of that existence should also be a concern. This question suggests a distinction between belief <u>in</u> a concept and belief <u>about</u> a concept, the latter being defined as belief in the existence of a number of relationships between the concept and other concepts. It

was shown that a change in attitude toward a particular concept could result from a change in belief about that concept. By using the AB scales, the belief in the existence of a stated relationship could be measured. The various beliefs in the relationships between an object and other objects or qualities would then be defined as beliefs about that object. It is obvious that individuals could thus agree in their belief in an object, but differ in their beliefs about that object, i.e., in their estimation of the various qualities and objects which might be associated with a given object.

Following these considerations, Fishbein (1961) recently investigated the functional relationships among attitude toward an object, attitudes toward other concepts, and beliefs about the object, i.e., the beliefs in the existence of relationship between the object and these concepts. Fishbein's theory may essentially be stated as follows: (1) an individual holds many beliefs about any given object, i.e., many different characteristics, attributes, values, goals, and objects are positively or negatively associated with a given object; (2) associated with each of these "related objects" is a mediating evaluative response, i.e., an attitude; (3) these evaluative responses are summative; (4) through the mediation process, the summated evaluative response is associated with the attitude object; and thus (5) on future occasions the attitude object will elicit this summated evaluative response, i.e., this attitude.

According to this theory, an individual's attitude toward any object is a function of his beliefs about the object (i.e., the probability that the

object is associated with other objects, concepts, values, or goals) and the evaluative aspect of those beliefs (i.e., the attitude toward the "related objects"). Algebraically, it may be predicted that an individual's attitude toward any object = $\sum_{i=1}^{N} B_i a_i$ where B = belief "i" about the object; a_i = the evaluative aspect of B_i; and N = the number of beliefs. Operationally, there should be a high positive correlation between the predicted attitude toward the object and some obtained measure of that attitude (A_0).

In order to test the above hypothesis, it is necessary to obtain (1) an individual's belief about the attitude object; (2) a measure of each belief and its evaluative aspect; and (3) a measure of attitude toward the object. Fishbein's (1961) data were highly supportive of the hypothesis. This finding, along with the earlier work of Zajonc (1954), Rosenberg (1956, 1960), and others, provided strong support for the general hypothesis that an individual's attitude toward any object is a function of his beliefs about the object and the evaluative aspect of those beliefs. In addition, the study attempted to demonstrate that descriptive or reportorial beliefs about an object are important determinants of an individual's attitude toward that object.

Since a major concern of the UCLA intervention study was the measurement of changes in teacher attitudes and beliefs about evaluation, it was felt that the Fishbein AB techniques would be most appropriate.

Instrument Development

A list of 56 items covering a variety of research and evaluation

concerns was constructed and administered to 39 Head Start teachers. The data obtained were analyzed for content coverage, wording, and redundancy. This analysis identified 22 items which could be used as defining the evaluative characteristics, or the A Scale. For each of the A Scale items, which described characteristics of Evaluation, there were four sets of bipolar adjectives: good-bad; unnecessary-necessary; wise-foolish; and dislike-like. The teachers were asked to rate the statements descriptive of evaluation first, so that their responses to the belief statements would not influence their attitudes toward the Evaluation concept.

By adding the words "Evaluation includes" each of the descriptive phrases was made into a positive statement about specific aspects of Evaluation, which constituted the B Scale. The B Scale items were rated in terms of four statements reflecting their probability of occurrence: rarely-frequently; probable-improbable; present-absent; and false-true.

All 44 items were presented on separate sheets in a 3" x 8 1/2" booklet. The instructions for responding to the A Scale were given on the first page of the booklet and for the B Scale on the page immediately following the last item of the A Scale. The final page of the booklet contained the single word "Evaluation" and the four bipolar adjectives of the A Scale, described above. Each teacher was asked to rate Evaluation on the four evaluative dimensions. This last item was included so that there could be a basis for determining whether the descriptive statements developed for this instrument were valid components of an attitude toward Evaluation.

The TATE was pilot tested with 39 subjects, among whom were included Head Start teachers, Child Development Supervisors, and other specialists in early childhood education. As predicted according to the theoretical framework developed by Fishbein, there was a high positive correlation ($r = .54$, $p < .01$) between attitude toward the object ($\sum_{i=1}^{22} B_i a_i$) and the obtained measure of the attitude (A_0, the Evaluation concept). This strong correlation indicates that the statements used in the scale are indeed descriptive characteristics of Evaluation.

RESULTS

Pretest Analysis

A total of 42[1] teachers from the 24 classes assigned to the study were given the TATE at the Orientation Meeting, before they had been informed as to the nature of the intervention in which they would be asked to participate. The analysis of the responses on this pretest indicated that there were distinct patterns of favorable and unfavorable attitudes toward various aspects of the evaluation concept (see Table 1). It was quite clear that teachers had the most positive attitudes toward the activities which provided them with data about a) their children (item #7, R.O. 1; item #16, R.O. 5) with special emphasis on the social-emotional area (item #11, R.O. 3); b) the relationship between their class and the rest

[1]While the 24 Head Teachers were present at this meeting, there were only 18 Assistant Teachers. Two classes had not yet been provided with assistants and the other four did not come to the meeting for various reasons.

of the Head Start program (item #20, R.O. 2; item #13, R.O. 6); and c) the involvement of parents in the education of their children (item #19, R.O. 4; item #18, R.O. 7).

It is interesting to note that the lowest ratings were given when the testing was perceived as non-responsive to teacher needs (item #2, R.O. 22; item #4, R.O. 19) or involved removing children from the classroom (item #10, R.O. 16). The personal threat felt by teachers in an evaluation sample class is evident in the ratings of items having to do directly with the teacher (item #3, R.O. 20; item #6, R.O. 18) or with classroom observation (item #8, R.O. 21; item #22, R.O. 17; item #15, R.O. 15). In the case of item #8, which had the second lowest evaluative rating, observation was seen as having a bad effect on children, whereas in actuality the children for the most part were completely undisturbed by the observers.

In comparing the relative importance of cognitive (R.O. 12) versus affective (R.O. 3) learning experiences, it is clear that most teachers value social-emotional growth above academic achievement. In other words, while realizing that Head Start has the important function of teaching children the cognitive skills required in the public school, the teachers feel that only after the child's feelings of security have been firmly established can any type of academic instruction be effective.

The ratings on the belief scale were consistently below those for the comparable item on the attitude scale (see Figure 1). The highest score on the attitude scale (item #7) was 10.9, whereas the highest score on the

belief scale (item #20) was 6.21. Perhaps a better comparison is to look at two items which had the same rank order on both scales: item #11, R.O. 3, where the attitude score was 8.54 and the belief score 5.56; and item #16, R.O. 5, where the attitude score was 7.95 and the belief score 5.41. There seems to be a greater distance between attitude and belief scores for the items which obtain the highest ratings; this diminishes in a regular fashion, from a difference of 4.7 points for the top score to only .5 for the second lowest score. An interesting reversal of this trend can be observed on the lowest item, where the attitude rating is a negative score, -1.90, whereas the lowest belief score is .67. These findings tend to support the hypothesis that teachers are not well-informed as to the content or goals of evaluation.

At approximately the mid-point of the year, the group which was receiving the feedback intervention seemed to have reached a high level of rapport with the research staff. It was felt that this enthusiasm might be an ephemeral phenomenon, and that it might diminish considerably with habituation, so that by the time the posttest measure was taken the effectiveness of the intervention would not be measurable. For this reason, it was decided to administer the TATE to the experimental group. Since the agenda for the feedback meeting was already full, the TATE booklets were broken up and reassembled so as to contain half of the attitude and half of the belief scale items. These were then compiled as alternate forms and randomly presented to the teachers in the experimental group.

Although the data obtained were too limited to warrant statistical analysis, this mid-term evaluation demonstrated that the items rated most positively in the pretest were not affected by the attitude changes which occurred at this time, and those items most closely related to the site variable reflected the greatest amount of change (items #1, 6, 8, 9, and 12). In general, there was an increase in unfavorable attitudes toward observers in classrooms, rating teachers, and effect on child behavior of observers and testers. Positive attitudes toward evaluation were found for increased use of films and classification of classroom activities. With respect to the belief ratings reflecting knowledge of the substantive characteristics of an evaluation program, there was increased awareness that testing of samples of children provides information about all children, and that evaluation was concerned with measuring changes in children.

These mid-year results indicate the beginning of a trend showing that the experimental teachers tend to become more tolerant of evaluation processes which involve interrupting the normal classroom activities, after they have been informed as to the rationale of the measures and have been invited to express their feelings and criticisms about them. However, there is a tendency to become increasingly negative toward the items initially rated most negatively. In addition, the belief ratings begin to show more correspondence with the attitude ratings, increasing for the positive items and decreasing for the items originally rated most negatively.

Posttest Analyses

A. Pre-post changes for total group. Inspection of the relative rank order positions of the items based on the pre and posttest scores reveal that the teachers continue to rate the items having to do with the overall Head Start programs more positively than items having to do with site activities, and items reflecting lack of sensitivity to humanistic considerations most negatively.

The belief ratings increased significantly between the pre and posttest measures for items #13, 19, 20, and 21, and decreased significantly for item #18. While the differences in the remaining items were not significant, nevertheless they did show a trend in the hypothesized direction. Thus these results indicate that a correspondence did develop between attitudes about various activities and the belief that these activities are part of the evaluation program, even though many of the characteristics were specific to the activities of the UCLA Head Start Evaluation and Research Center alone.

B. Treatment differences. In general, the attitude changes for the teachers receiving feedback paralleled those for the total group, significantly increasing for items #7, 18, 19, 20, 21, and 22, and decreasing for items #2 and 4. Additionally, they became significantly more positive about the time spent by observers in the classroom, and did not become more negative toward rating the teacher's performance and the observer's effect on child behavior. These particular differences support the

hypothesis that teachers given feedback become less threatened and more positive toward the Evaluation personnel and activities.

On the belief scale, the experimental group significantly changed their beliefs about evaluation on all the items on which the entire group changed. Additionally, their beliefs significantly changed for items 5 (-), 10 (+), 13 (+), and 16 (+). These teachers alone significantly decreased their belief that Evaluation includes spending class time participating in Head Start research, and significantly increased their belief that Evaluation includes removing children from the classroom for testing, knowing how their class compares with other Head Start classes, and testing children. Thus while the total group of teachers regardless of treatment group did show some changes in their beliefs about Evaluation which in fact are congruent with the program, the experimental group changed their beliefs the most and in a direction consistent with the activities of the Evaluation program. Thus these results definitely tend to support the hypothesis that providing feedback to teachers reduces threat, increases their reception to the program, and helps them to distinguish fact from fiction insofar as specific program activities are concerned.

In general the changes for groups C_1 and C_2 paralleled those for the entire group in both the attitude and belief measures, with the major difference being that both these groups showed far less change and on fewer items than the experimental group.

CONCLUSION AND DISCUSSION

From this first use of the TATE in a field study, it has proved to be a useful instrument for revealing areas where attitudes and beliefs about evaluation need to be reconsidered, so that the gap between knowledge and preconception can be diminished. In almost all cases, increases in knowledge were paralleled by increased in favorable attitudes toward various components of evaluation. These changes were significantly greater for a group which received feedback during evaluation, but this was true only on the items which were related to the intervention itself.

Further use of this instrument in evaluation studies seems to be warranted.

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Table 1

Mean Pretest and Posttest Scores and Rank Order of Items on Attitude (A) and Belief (B) Scales of TATE

Item	Pretest (N=42) Mean Score A	Pretest (N=42) Mean Score B	Pretest (N=42) Rank Order A	Pretest (N=42) Rank Order B	Posttest (N=40) Mean Score A	Posttest (N=40) Mean Score B	Posttest (N=40) Rank Order A	Posttest (N=40) Rank Order B
1. The time spent by observers in the classroom.	6.74	5.49	8	4	7.73	2.73	5	17
2. Waiting a long time before getting test results.	-1.90	4.08	22	13	-2.10	4.30	22	9.5
3. Relating job security to teacher ratings.	3.41	0.67	20	22	3.18	1.85	20	19
4. Testing children in a few classes to find out about Head Start children in general.	4.10	4.56	19	10	0.58	3.03	21	15
5. Spending my class time participating in Head Start research.	6.31	2.82	11	18	4.03	1.28	19	20
6. Rating the teacher's performance.	4.43	3.41	18	15.5	5.88	4.30	15	9.5
7. Providing teachers with information about test results.	10.9	4.46	1	11	9.45	4.25	2	11
8. The observer's effect on child behavior.	2.72	4.38	21	12	4.23	0.67	18	22
9. Filming classroom activity.	6.23	3.64	12	14	7.08	0.73	10	21
10. Removing children from the classroom for testing.	5.13	4.64	16	8.5	7.05	6.00	11	2
11. Emphasizing the children's social-emotional growth.	8.54	5.56	3	3	8.23	4.60	4	7

Table 1 (cont'd.)

Item	Pretest (N=42) Mean Score A	Mean Score B	Rank Order A	Rank Order B	Posttest (N=40) Mean Score A	Mean Score B	Rank Order A	Rank Order B
12. Classifying classroom activities.	6.31	4.64	10	8.5	6.55	3.55	13	13
13. Knowing how my class compares with other Head Start classes.	7.69	2.74	6	19	7.30	5.38	9	4.5
14. Emphasizing the children's academic achievement.	6.10	3.41	13	15.5	5.80	3.20	16	14
15. Observing the teacher at work.	5.26	5.10	5	6	7.57	6.03	7	1
16. Testing children.	7.95	5.41	5	5	7.70	5.38	6	4.5
17. Spending my out-of-class time participating in Head Start research.	5.56	2.33	14	20	5.58	2.80	17	16
18. Spending my time helping parents teach their children at home.	7.28	2.21	7	21	6.28	2.48	14	18
19. Spending my time giving parents information.	8.08	2.87	4	17	8.83	3.63	3	12
20. Knowing the relationship between this child development center and the national Head Start program.	8.74	6.21	2	1	9.75	4.38	1	8
21. Specifying goals for changing child behavior.	6.67	4.69	9	7	7.38	4.73	8	6
22. Having observers in the classroom.	4.46	5.79	17	2	6.65	5.50	12	3

Table 2

T-test Values for Differences between Mean Scores on Pretest and Posttest for Attitude and Belief Scales (by Treatment Group)

Item	Attitude				Belief			
	E N=14	C_1 N=9	C_2 N=7	Total N=30	E N=14	C_1 N=9	C_2 N=7	Total N=30
1	5.8*	0.0	0.7	2.9	1.2	2.3	-4.9	0.1
2	-15.3**	-12.2**	-9.9*	-13.1**	-1.6	-0.1	5.0	0.4
3	1.2	2.7	2.3	1.9	-1.1	-1.2	-0.7	-1.0
4	-5.1*	-8.1*	-6.1	-6.2**	-1.5	-1.4	3.0	-4.4
5	1.1	-4.4	-1.4	-1.1	-4.3*	-1.9	0.3	-2.5
6	-4.1	-0.6	-4.3*	-3.1*	-2.6	0.1	0.0	-1.2
7	7.1**	1.6*	-1.3	3.5*	1.4	-1.8	1.1	0.4
8	-1.9	-3.0	-6.6*	-3.3*	-2.6	-0.7	-1.0	-1.6
9	1.1	2.4	-2.4	0.7	-2.1	-1.1	-0.4	-1.4
10	3.9	2.0	0.3	2.5	6.2**	-2.9	0.1	2.1
11	0.9	0.0	-2.4	-0.1	2.8	-1.9	-2.3	0.2
12	2.0	0.0	3.0	1.6	-0.1	2.2	3.7	1.5
13	0.4	1.2	1.9	1.0	6.1**	2.8	4.7	4.8**
14	-3.1	-2.3	1.7	-1.8	-2.0	1.4	7.0	1.1
15	-0.1	-0.6	-2.1	-0.7	3.6	0.7	-3.6	1.1
16	-0.1	1.7	3.9	1.4	4.8*	0.1	-2.3	1.7
17	2.6	1.7	-1.6	1.4	-2.1	-4.1*	-1.3	-2.5
18	20.9**	23.8**	23.3**	22.3**	-6.3*	-4.1*	26.3**	-5.7**
19	24.5**	23.8**	26.6**	24.8**	19.2**	20.1**	22.4**	20.2**
20	25.8**	25.7**	27.4**	26.1**	20.4**	20.6**	22.3**	20.9**
21	24.0**	25.2**	22.9**	24.1**	20.6**	20.9**	23.6**	21.4**
22	22.3**	23.4**	21.0**	22.3**	22.4**	20.4**	22.7**	21.9**

*p < .05 **p < .01

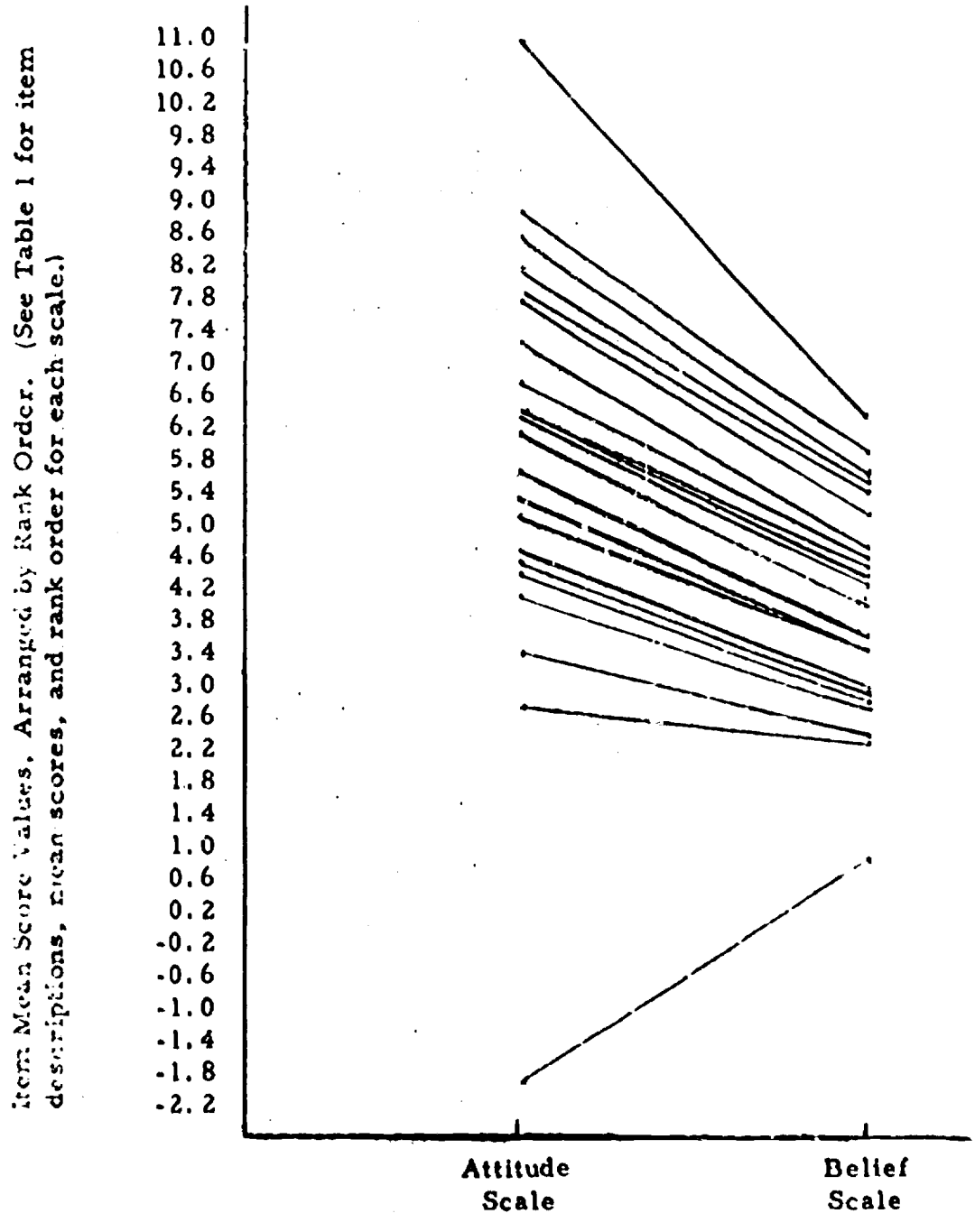

Figure 1. Comparison of Rank Order of Pretest Scores on Attitude and Belief Scales of TATE.