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This study evaluated and measured the effectiveness and enduring effects of two training groups with respect to transmitting knowledge and affecting change. Control subjects and experimental subjects were used. Data was obtained from the Sixteen Factor Personality Questionnaire, the Gough-Sanford Rigidity Scale, and the IPAT 8 Parallel Form Anxiety Battery. It was concluded that the short-term training institutes had little measureable effect upon participants in terms of the goals of the training and that the study was limited by the weaknesses of the measuring instruments. There is a real need to experiment with and evaluate short-term training programs rather than taking the subjective ratings of participants and judges. (Author/EK)

THE EFFECT OF SHORT-TERM INSTITUTE EXPERIENCES INVOLVING SENSITIVITY TRAINING ON ATTITUDES OF EMPLOYMENT SECURITY PERSONNEL

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Introduction

The effectiveness of various training methods used in contemporary society is frequently questioned. Models for long and short-term training curricula are developed by experts in many fields but rarely is there evidence as to the amount or direction of change that occurs except in cases where the amount of knowledge acquired about a certain subject is evident. Even more serious is the lack of evidence relating to the effect that training has in performance and the duration of any changes that do occur. This looms particularly important when one deals with attempts to modify the attitudes and personalities of trainees who are to deal in human relationships.

One of the more current attempts to alter attitudes and to make people more "open" is the short-term training institute that incorporates sensitivity training with didactic instruction. This approach is used frequently for training employees of the United States Employment and Security Commission.

The purpose of the present study was an attempt to evaluate the effectiveness and enduring effects of two such training programs with respect to measurable changes that occurred among participants exposed to the training. The institutes were two-week institutes (10 working days) and included lectures, visitations, audio-visual experiences and 4 days of sensitivity training conducted by well-qualified trainers.

A review of the literature related to this problem shows that most evaluation is subjective--done by ratings of others, either fellow workers or an "expert" observer. Theory and research (Husband 1951, Gayles 1966, Keitner 1956, Stovall 1958) relating to method of presentation of ideas, and human relations training seem to indicate that there is still much controversy regarding the relative effectiveness of discussion vs. lecture as a means of presenting ideas and affecting change. Successful results of either approach are commonly dependent upon the size of the group, the groups objectives, the personality of the instructor and the cohesiveness of the group but both can be instrumental in changing attitudes as well as providing basic knowledge. Research and theory (Hampden-Turner 1966, Valiquet 1964, Bunker 1965, Blake Morton 1966, Miles 1960, Miles 1964, Oshry 1966) related to human relations training seems to indicate that T-Group type training is effective in changing

the personalities of participants. This indication is based in large part on studies which ask for subjective ratings of change and hardly any provide assistance in determining the lasting effects of the treatment. Miles (1964) posed five questions that must be answered if human relations training is to merit continued emphasis. His first question was "What are the durable effects of laboratory education upon individual performance and interaction in a work setting?" Bunker (1965) expounds upon this point by saying, "The answer to the first of these questions is critical in the logic of this line of inquiry; for if long-term behavioral changes cannot be demonstrated, the remaining queries would be superfluous--increased intellectual comprehension and altered skills and attitudes in the training environment are not enough. Adaptive and enduring changes in the behavior and perceptions of participants in the sterner climate of their home organizations are the announced objectives of most laboratory training practitioners."

The literature provides us with few definitive aids in determining the development of a model of training which will allow for enduring change on the part of participants. There is controversy over the effectiveness of lecture, discussion and human relations training and no conclusive evidence related to their effectiveness as individual approaches, in combination, their length, or their format.

Still business, industry and government continue to develop and implement training programs of various sorts and invest great quantities of time and money without evidence of whether their objectives are being attained or how they might more efficiently attain them.

In recognition of this problem, the present study was designed to attempt to measure the effectiveness of short-term institute training involving a combination of several approaches to transmitting knowledge and affecting change and to determine its duration.

Specifically, several questions were posed. These questions were:

1. Will an overall personality change (as measured by the Sixteen Personality Factor Questionnaire) occur and endure among participants as a result of the Human Resource Development Institute which consists of sensitivity training and information about the disadvantaged?

   This question was included since it was felt that a measure of change should be made if the institutes were, in fact, to be shown to attain their objectives. It was felt that an overall change for the institute participants should be evident and that this change should be in the direction of becoming warmer, more accepting, understanding, and open. These, being personality characteristics, should be reflected in scores obtained on a standardized personality measure of some respect. It was further believed that there should be reflected a dramatic change after the two-weeks training and that this change should be evident after returning to the regular work environment.

2. Will sensitivity training participants obtain different scores on the Gough-Sanford Rigidity Scale after sensitivity training than they did prior to sensitivity training and do these scores differ from scores of a control group?

Question 2 looms particularly important since the avowed purpose of sensitivity training is to cause people to become more "open". If participants do not show a measurable change, then we question the effectiveness of their training, the length of the training, the manner in which it was conducted, the proficiency of the trainers or perhaps some other cause.

3. Will sensitivity training participants reflect greater anxiety, as measured by the IPAT 8 - Parallel Form Anxiety Battery, than do subjects in a control group who are not undergoing sensitivity training?

The final question was an attempt to assist in validating the findings of question 2. Schein and Bennis (1965, p.43) in discussing the dynamics of sensitivity training state that: "Unfreezing is a graceless term that implies that a period of unlearning or 'being shook-up'--must take place before learning can be initiated." If this be true, then it would seem that anxiety would accompany a period of sensitivity training and that this would be reflected in a measurable way. If there is no obvious anxiety, then perhaps the training was not accomplished in its most desirable form.

Method

Experimental subjects were participants in two short-term Human Resources Development training institutes, (10 training days each) held in May, 1967. The subjects were all employees of the Employment Security Commission and were from the six state southeastern region. Participants included counselors, managers, interviewers, and supervisors. The purpose of the institutes was to expose the participants to sensitivity training, to provide information about the disadvantaged, and to aid them in being more open and more effective in their jobs when they returned to their home situations. Change was anticipated.

The institute scheduled consisted of 4 days of sensitivity training and 6 days of lectures, tours of poverty areas, and discussion. The institutes were sponsored jointly by the Employment Security Commission and the State University. Program participants were representatives of many academic and governmental agencies; both local and from outside the State. T-Group trainers were well qualified to perform as group leaders.

Data for answering the first question were obtained from responses of 45 experimental and 46 control subjects to the Sixteen Factor Personality Questionnaire. The 46 control subjects were a random sample of Employment Security Employees who had never attended an institute of this type and had never undergone sensitivity training. They were drawn from the same six state area from which the experimental subjects came. The Sixteen Factor Personality Questionnaire was administered to subjects on the first morning of the institute, (pre-test); again, on the final day of the two-week period; (post-test); and again at the end of a two-month lapse after the institutes had ended (post-post test). The pre-test and post-test was administered to the experimental group during the institute. The post-post test was given by test technicians in local offices as were the pre-test and post-test for the control group.

Testing was done simultaneously according to instructions furnished by the researchers--the only difference in testing conditions was geographical location at the time of testing.

Data were gathered by using the Gough-Sanford Rigidity Scale to attempt an answer to question 2. There were 52 experimental subjects and 56 control subjects who responded to the 22 true-false items of the scale. The 52 experimental subjects were institute participants who participated in sensitivity training. The 56 control subjects were drawn from employees of the Employment Security Commission in the State. None of them had ever participated in sensitivity training. Testing was done simultaneously but the control subjects were tested in their local offices. The scale was administered on the first day of the 4 day period of sensitivity training and again on the final day of the 4 day period.

The same control and experimental subjects who responded to the Gough-Sanford scale, completed the IPAT 8 - Parallel Form Anxiety Battery during the 4 day sensitivity period. A different form of the battery was administered each morning and each afternoon of the 4 day period.

Instruments

The following is a brief description of the instruments used in this study.

1. The Sixteen Personality Factor Test (16 P.F.) is a factor analytically developed personality questionnaire designed to measure the major dimensions of human personality comprehensively, in young adults and adults from 16 or 17 years to late maturity (About the 16 P.F., p.11).

The characteristics which this questionnaire purports to measure are as follows:

Factor	Low Scoring Persons are described as:		High Scoring Persons are described as:
A	Reserved	vs.	Outgoing
B	Less intelligent	vs.	More intelligent
C	Affected by feelings	vs.	Emotionally stable
E	Humble	vs.	Assertive
F	Sober	vs.	Happy-go-lucky
G	Expedient	vs.	Conscientious
H	Shy	vs.	Venturesome
I	Tough-minded	vs.	Tenderminded
L	Trusting	vs.	Suspicious
M	Practical	vs.	Imaginative
N	Forthright	vs.	Shrewd
O	Placid	vs.	Apprehensive
Q 1	Conservative	vs.	Experimenting
Q 2	Group dependent	vs.	Self-sufficient
Q 3	Undisciplined	vs.	Controlled
Q 4	Relaxed	vs.	Tense

Numerically low scores correspond to the first trait of the factors. Low scores on Factor 1 (reserved vs. outgoing) would indicate that the person or group is more reserved than outgoing.

This instrument, developed by Cattell and Eber is based on 25 years of investigation and each of the 16 scales has been analyzed according to factor analysis. The stability and independence of the 16 scales have proven to be sound. Besides revision of the test, it has been improved in scoring methods and its validity has been reaffirmed many times since it was first published in 1950. The reliability of each of the 16 scales was determined by using the split half method and was found to vary from +.71 to +.93. This averaged to about +.84. Validity for the internal construction of the test had a range of +.73 to +.96. This has an average of approximately +.83 (About the 16 P.F., p.3).

Form A of the instrument was used for all testing and instructions from the manual for administration and scoring were closely adhered to.

2. The Gough-Sanford Rigidity Scale is a relatively new instrument with a small amount of published data. It appears to be a good measure of rigidity, can be administered in a relatively short period of time, and is inexpensive to administer.

   The scale is a 22 item true-false questionnaire and is a part of the California Psychological Inventory where it is called the flexibility scale. Reliability coefficients are reported to be .67 for high school females (N=125), .60 for high school males (N=101), and .49 for prison males (N=200). Validity coefficients are reported to be from -.36 to -.58.

3. The IPAT 8 - Parallel Form Anxiety Battery was used to measure anxiety fluctuations. This instrument comes from the Cattell laboratory and not enough normative data and reliability data are available for the test to be used with confidence in a clinical setting. It is, however, recommended for research purposes.

   The instrument was validated by matching responses to clinical ratings of anxiety. The full battery contains eight different and experimentally independent forms which can be administered on different occasions. Validity coefficients, based upon correlation of the test with an anxiety factor range from .50 to .68 with a median coefficient of .54. Interform reliability coefficients range from .60 to .85.

Results

Statistical results relating to overall effects of the institute on 16 P.F. scores were obtained from an analysis of the data by computer. A repeated measures program for analysis of variance--Lindquist Type I design was used. An average raw score mean for the experimental group and the control group was obtained for each of the 16 variables for each of the three tests. A 5 per cent level of significance was used to determine whether there was any significant difference in the experimental or control group on the 16 variables over the period of the three testings or between the groups.

To investigate effects of sensitivity training upon participants, Gough-Sanford Rigidity scores and IPAT 8 - Parallel Form Anxiety Battery scores were used. The data for this phase of the study were analyzed in terms of (1) descriptive graphic comparison of mean anxiety scores of the experimental and control group, and (2) correlation between rigidity scores before and after sensitivity training using the Pearson Product Moment Correlation, (3) and analysis of variance for One-way Design (Version of January 8, 1964, Health Sciences Computing Facility, UCLA) between experimental and control groups on pre-test and post-test rigidity scale scores. The .05 level of confidence was used to determine significance.

Cursory mention will be made for statistically non-significant items and abbreviated reporting of statistical findings will be provided for the significant items in the report.

An examination of the overall change occurring for the control and the experimental groups on 16 P.F. responses shows that there were no significant differences either between groups or among subjects for Factors 1, 2, 3, 5, 6, 8, 10, 11, Q 1, Q 2, Q 4. An analysis of pre-test, post-test and post-post test results for Factors 4, 7, 9, 12, and Q 3 revealed significant F's at the .05 level of confidence. Three of the Factor differences are attributable to differences between scores of the experimental and control groups. These are for Factors 4, 7, and Q 3. Tables I, II and III report the results of the analysis of variance for these factors and provide a chart of mean scores for inspection.

Table I

Analysis of Variance Table for Factor 4
(Humble vs. Assertive)

Source	DF	Mean Squares	F Ratio
Between Subjects			
B (group difference)	1	30.75	6.63*
Error (b)	89	46.36	
Within Subjects			
A (time periods)	2	3.43	0.91
AB (time-group interaction)	2	8.34	2.22
Error (w)	178	3.76	

*Significant at .05 level

Chart of Means for the Experimental and Control Groups for Factor 4

	Pre-test	Post-test	Post-post test
Group I--Experimentals (N=45)	12.2	13.1	12.6
Group II--Controls (N=46)	10.5	10.3	10.7

Table I shows that there was a significant difference between the two groups in Factor 4. An inspection of the means shows that the experimental subjects were more assertive than the controls at the beginn ng and remained so throughout the experimental period.

Table II

Analysis of Variance Table for Factor 7
(Shy vs. Venturesome)

Source	DF	Mean Squares	F Ratio
Between Subjects			
B (group difference)	1	451.71	6.13*
Error (b)	89	73.75	
Within Subjects			
A (time periods)	2	5.76	1.50
AB (time-group interaction)	2	6.49	1.35
Error (w)	178	4.80	

*Significant at .05 level

Chart of Means for the Experimental and Control Groups for Factor 7

	Pre-test	Post-test	Post-post test
Group I--Experimentals (N=45)	15.4	15.3	15.3
Group II--Controls (N :46)	12.3	13.3	12.6

A significant difference between groups on Factor 7 is shown by Table II. The chart of means would indicate that the experimentals were more venturesome than were the controls throughout the experimental period.

Table III

Analysis of Variance Table for Factor Q 3
(Casual vs. Controlled)

Source	DF	Mean Squares	F Ratio
Between Subjects			
B (group difference)	1	116.24	4.76*
Error (b)	89	24.40	

(continued)

Table III (continued)

Source	DF	Mean Squares	F Ratio
Within Subjects			
A (time periods)	2	8.47	2.36
AB (time-group interaction)	2	3.08	0.86
Error (w)	178	3.59	

*Significant at .05 level

Chart of Means for the Experimental and Control Group for Factor Q 3

	Pre-test	Post-test	Post-post test
Group I--Experimentals (N=45)	12.0	11.4	11.5
Group II--Controls (N=46)	13.2	13.1	12.5

Table III reveals that on Factor Q 3, the experimentals reported themselves as being more controlled than the control group and consistently reported this throughout the study.

From the analysis it was observed that for two of the 16 factors there was a significant difference between the two groups due to group interaction over time. These were Factors 9 and 12. Tables IV and V reveal the analysis of variance results for these 2 factors and provide a chart giving the means for both factors.

Table IV

Analysis of Variance Table for Factor 9
(Trusting vs. Suspicious)

Source	DF	Mean Squares	F Ratio
Between Subjects			
B (group difference)	1	15.18	0.68
Error (b)	89	22.4	
Within Subjects			
A (time periods)	2	3.89	1.02
AB (time-group interaction)	2	16.23	4.28*
Error (w)	178	3.80	

*Significant at .05 level

Chart of Means for the Experimental and Control Groups for Factor 9

	Pre-test	Post-test	Post-post test
Group I--Experimentals (N=45	6.6	6.1	7.2
Group II--Controls (N=46)	7.4	7.2	6.7

Table IV shows a significant difference in the time-group interaction analysis. By inspecting the means it can be seen that there was fluctuation of scores on this factor. The experimentals showed a decrease in "suspiciousness" on the post-test followed by an increase on the post-post test. Controls showed a consistently slight decrease in this factor on the second and third test.

Table V

Analysis of Variance Table for Factor 12
(Placid vs. Apprehensive)

Source	DF	Mean Squares	F Ratio
Between Subjects			
B (group difference)	1	76.43	1.68
Error (b)	89	45.61	
Within Subjects			
A (time periods)	2	6.14	1.56
AB (time-group interaction)	2	14.17	3.60*
Error (w)	178	3.94	

*Significant at the .05 level

Chart of Means for the Experimental and Control Groups for Factor 12

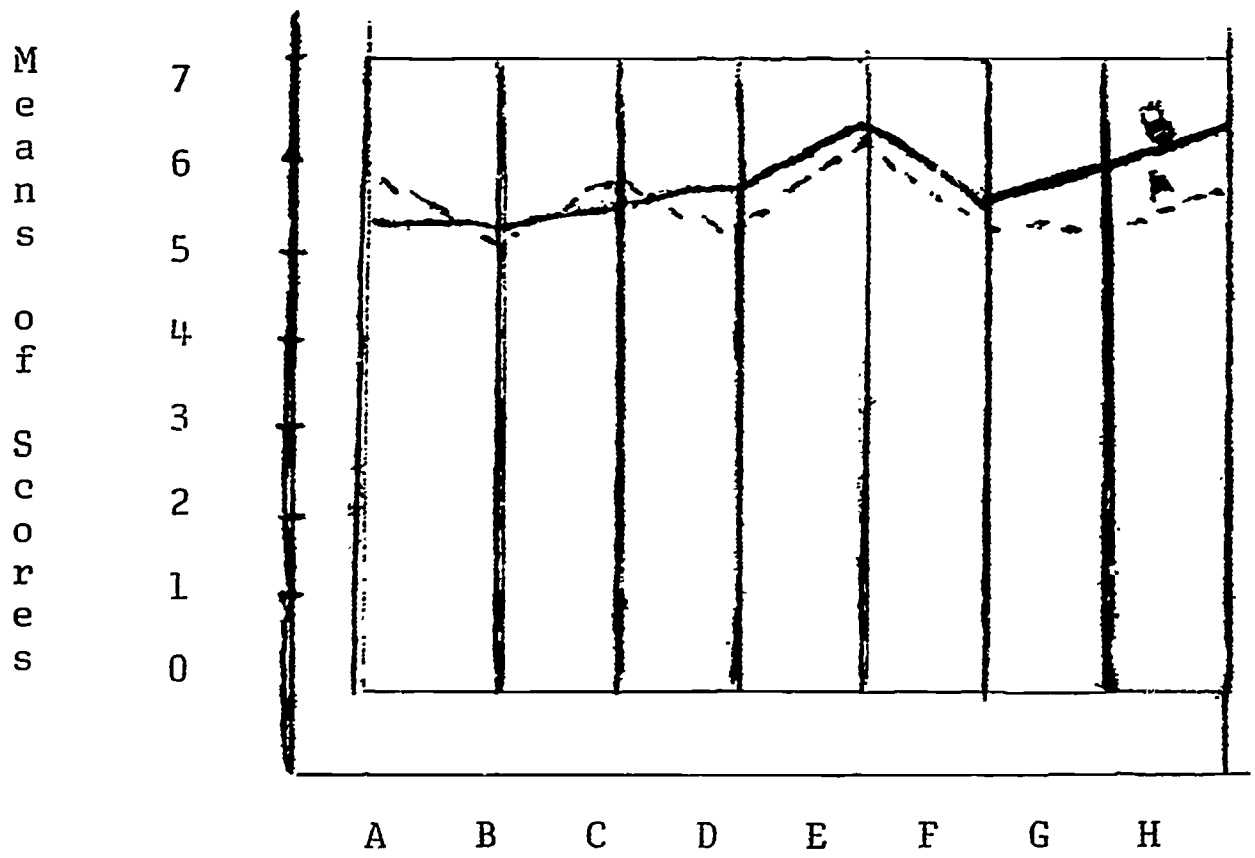
	Pre-test	Post-test	Post-post test
Group I--Experimentals (N=45)	8.4	9.3	8.3
Group II--Controls (N=46)	10.2	9.5	8.5

Table V shows a significant difference in Factor 12 when interaction effects were analyzed. On the initial test the experimental subjects were more placid than the controls. The experimental subjects had become more apprehensive by the end of the institute and after two months had returned to their original level while the controls were more apprehensive at the beginning of the study and became more placid later on.

The results of a comparison of mean scores between the experimental and control groups responses to the 8 Parallel Anxiety Battery given during the 4 day sensitivity experience is given in Graph I.

Graph I

IPAT 8 Parallel Form Anxiety Battery Mean Scores
for 52 Experimental and 56 Control Subjects



A - Experimental Group
B - Control Group

Graph I shows a relatively small amount of difference in the anxiety levels over a 4 day period. Differences were most noticeable on the last day of testing. Inspection of this graph indicates that the group undergoing sensitivity training was not generally more anxious than the group that was not exposed to sensitivity training.

To examine the relationship between pre-test and post-test rigidity scores a Pearson Product Moment Correlation Coefficient was computed. Table VI shows the results of this comparison.

Table VI

Correlation Between Rigidity Scale Pre-test and Post-test Scores

Experimental Group	Control Group
r = .76	r = .78

These correlations are significant at the .05 level and show that there was a strong resemblance on the pre-test and post-test rigidity scores for both the experimentals and controls.

Table VII gives the results of the one-way analysis of variance used to investigate the possible difference between pre-test rigidity scores in the experimental group and those in the control group.

Table VII

Difference Between Experimental and Control Groups in Rigidity Scale Pre-test and Post-test Scores

Sum of Squares		DF	Mean Squares	F Ratio
Pre-test	21.15	1	21.1498	1.67
Post-test	18.32	1	18.3223	1.27

Table VII shows no significant differences with respect to the pre-test scores of the experimental and the control group nor does it show significant differences between the post-test scores of the two groups.

Conclusions

The results of this study indicate that the short-term training institutes did not attain the objectives originally set forth. There was little evidence that participants were changed with respect to personality scores from those who did not have this experience nor that they became more open, warm or accepting than a group that did not have this experience. There are, of course, definite limitations in this study. Among these are the weaknesses of the measuring instruments. The ones used, however, are relatively respected ones and it would seem that if change had occurred, it would have been picked up to a greater degree than shown. It is also true that many aspects of change could have occurred that were not measured but those measured were in line with the expressed objectives of the program. Particularly disturbing was the lack of evidence of change after a lapse of time from the end of the institutes since this is certainly a goal of training such as that investigated.

The instrument of change thought to be the strongest, sensitivity training, did not seem to have an effect on participants since the control group reported virtually the same anxiety level as did the experimental group and since there was no change in rigidity as measured by the Gough-Sanford Rigidity Scale. This could lead one to believe that the sensitivity training was not properly conducted but since 4 different trainers, all thoroughly qualified and experienced, were used it would appear that they would have conducted adequate training.

Overall indications are that this training experience had little measurable effect upon participants in terms of the goals of the training. This indicates that future short-term training programs should be carefully scrutinized and planned with alterations in the experiences planned for participants. It might well be that the spacing, length, and type of sensitivity training could affect the results or that homogeneity of participants in terms of their interests, sex, tenure, age or other variables might yield different results. Changes which might have begun here but that were not in evidence might well be enhanced by follow-up sessions over a period of time rather than giving participants a "one-shot" dose and then sending them back to their home environments without the possibility of reinforcement.

The results of this study would seem to indicate a real need to experiment with and evaluate short-term training programs thoroughly rather than simply taking the subjective ratings of participants and judges which,

incidentally, for these two institutes were outstanding. The expenditure of time, money and effort is entirely too great to expend without valid evidence that the attempt is the best possible way.

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