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A STUDY OF THE RELATIONSHIP BETWEEN VERBAL OUTPUT, THE FEEDBACK PROCESS, AND LEARNING IN SENSITIVITY TRAINING

by
Allious Lee Schomer

A dissertation submitted in partial fulfillment
of the requirements for the degree of
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Doctoral Committee:

Professor William Cave, Chairman
Associate Professor Donald Barr
Assistant Professor David Kopplin
Professor Allen Menlo

ABSTRACT

A STUDY OF THE RELATIONSHIP BETWEEN
VERBAL OUTPUT, THE FEEDBACK PROCESS, AND
LEARNING IN SENSITIVITY TRAINING

by

Allious Lee Schomer

Chairman: William Cave

This study was concerned with exploring the relationship between verbal output, the feedback process, and learning in a T-group (training group).

The objectives for the investigation were:

- To discover whether there was a relationship between the learning of the participants of a T-group and their verbal participation.
- To more clearly identify and understand the role of the feedback process in the laboratory learning process in a T-group.

Statistical analyses indicated no significant correlations between verbal output (participation) and learning (increase in a participant's ability to give effective feedback). Significant correlations were demonstrated;(1) between verbal output and the feedback process, both output (giving feedback) and input (receiving feedback); and (2) between the feedback process and learning. Higher and more correlations existed between verbal output and the cognitive feedback process than between verbal output and the emotional feedback process.

Feedback output and input were found to be closely related. There were significant relationships described between the criteria of effective feedback (timely, specific, and non-judgmental), its positive quality, and learning to give effective emotional feedback.

Two T-groups were employed as the sample for the investigation (N = 22). The groups were chosen from a six-day training laboratory which had learning goals in the area of personal development and group process. The T-groups were formed by a process of self-selection.

A Feedback Process Analysis developed by the author was used to code the observations of the sample from tape recordings of all the T-group sessions (24 hours). Consensual judgment process was used to determine the scores of participants. The Feedback Process Analysis categorizes the verbal output of a participant into verbal output and/or feedback, and feedback into emotional or cognitive. Each feedback output may satisfy none or all three criteria for effective feedback (timely, specific, descriptive), and it will be positive or negative in quality.

Learning was defined as an increase in a participant's ability to give feedback effectively. It was measured by computing the mean difference in the number of criteria satisfied by a participant's first and last five emotional and cognitive feedback attempts.

There were thirty-nine variables observed in the investigation: the independent variable was verbal output; the

intervening variable, the feedback process, was described by twenty-eight variables; and the dependent variable of learning was denoted by ten variables.

Each variable was correlated with every other variable to describe the relationship between them. One-way analysis of variance was computed to test the differences between the original T-groups. Two "new" groups formed on the basis of high or low verbal output were analyzed to compare differences. Fisher t-ratio was computed in order to compare the difference of the means of the T-groups and of the two "new" groups.

Several hypotheses for future research are indicated by the findings of this investigation that needs to be substantiated against a more general population. They are:

1. That as the verbal output of a T-group member increases, the cognitive feedback he receives will increase.
2. That as a T-group member's verbal output increases, his emotional and cognitive feedback output will increase.
3. That as the amount of emotional feedback received by a T-group member increases, his effectiveness in giving emotional feedback will increase.
4. That as a T-group participant's feedback output becomes increasingly specific (with reference to behavior), the participant will learn to give emotional feedback more effectively.

5. That as a T-group member receives more positive feedback his ability to give emotional feedback will increase.
6. That as a T-group member increases his feedback to others, the feedback he receives will increase.
7. That in homogeneously composed T-groups constituted of high participators, the amount of feedback exchanged will be greater than in groups composed of low participators or a mixture of each.
8. That as the cognitive and emotional feedback expressed by a member of a T-group to his whole group increases, the amount of cognitive feedback he receives from the group will increase.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	ii
LIST OF TABLES	vii
LIST OF FIGURES	ix
LIST OF APPENDICES	x
CHAPTER	
I. INTRODUCTION	1
Statement of the Problem	1
Background	1
Objectives	6
II. RELATED LITERATURE AND THEORETICAL CONSIDERATIONS	9
Status of Theory-Laboratory Learning Method	9
Laboratory Learning Process Theory	10
The Concept of Reinforcement in the Laboratory Learning Process	14
The Concept of Feedback in the Laboratory Learning Process	17
Participation Process Theory as it relates to the Laboratory Learning Process	22
Relearning Theory as it relates to the Laboratory Learning Process	26
Small Group Theory	29
III. RESEARCH RELATED TO THEORETICAL CONSIDERATIONS	35
Status of Research in Human Relations Training	35

TABLE OF CONTENTS (Continued)

	Page
Research Related to the Laboratory Learning Process	36
Research Related to the Reinforcement Process with the Laboratory Learning Process	38
Research Related to the Process of Feedback within the Laboratory Learning Process	42
Research Related to Participation in Social Interaction in Sensitivity Training	48
IV. DESIGN AND PROCEDURES	53
General Setting of the Study	53
Type of Study	59
Limitations of the Study	60
Definitions	64
Variables	70
Objectives and Questions	72
General Design of Procedures	73
Instruments	74
Feedback Process Analysis	74
Group Perception Inventory	81
Pilot Studies to Test the Instruments	83
The Coordination and Training of the Training Staff in the Laboratory	85
Sampling Procedures	86
Organization of the T-groups in the Laboratory	86
Selection of the Groups to be used in the Research	88

TABLE OF CONTENTS (Continued)

		Page
	Coding of the Tapes	89
	Analysis of the Data	89
V.	ANALYSIS OF THE RESULTS	92
	Introduction	92
	Comparison of the Two Groups Composing the Sample	93
	Analysis of Variables Related to Learning	106
	Analysis of Groups Based on Verbal Output	124
VI.	SUMMARY, LIMITATIONS, AND FUTURE RESEARCH	129
	Summary and Interpretation of Major Findings	129
	Similarity of Groups in the Sample	130
	Learning	131
	Verbal Output	138
	The Feedback Process	140
	Conclusions	145
	Hypotheses	146
	Limitations	147
	Implications for Sensitivity Training	150
	Future Research	158
	Concluding Remarks	160

LIST OF TABLES

TABLE		Page
1.	Groups with Regard to Sex	93
2.	PSCD for Age	94
3.	Group Comparison on Age	94
4.	PSCD for Verbal Output	95
5.	Group Comparison on Verbal Output	95
6.	PSCD for Feedback Output	96
7.	Group Comparison on Feedback Output	96
8.	PSCD for Cognitive Feedback Input	96
9.	Group Comparison on Cognitive Feedback Input	97
10.	PSCD for Cognitive Input Criteria of Timely Feedback	98
11.	Group Comparison on Cognitive Input Criteria of Timely Feedback	98
12.	PSCD for Cognitive Input Criteria of Specific Feedback	98
13.	Group Comparison on Cognitive Input Criteria of Specific Feedback	99
14.	PSCD for Emotional Input Criteria of Non-judgmental Feedback	99
15.	Group Comparison on Emotional Input Criteria of Non-judgmental Feedback	99
16.	PSCD for Cognitive Input Quality: Negative	100
17.	Group Comparison on Cognitive Input Quality: Negative	101
18.	PSCD for Criteria Satisfied by Last Five Cognitive Feedback Outputs	102
19.	Group Comparison on Criteria Satisfied by Last Five Cognitive Feedback Outputs	102
20.	PSCD for Learning Scores (Emotional Feedback Output)	103

LIST OF TABLES (Continued)

TABLE		Page
21.	Group Comparison on Learning Scores (Emotional Feedback Output)	103
22.	PSCD for Learning Scores (Cognitive Feedback Output)	104
23.	Group Comparison on Learning Scores (Cognitive Feedback Output)	104
24.	Groups Compared on Group Perception Inventory - (1) Genuiness	105
25.	Groups Compared on Group Perception Inventory - (2) Understanding	105
26.	Groups Compared on Group Perception Inventory - (3) Acceptance	105
27.	Groups Compared on Group Perception Inventory - (4) Valuing	106
28.	Sum, Mean, and Standard Deviation for all Variables Used in the Intercorrelation Analysis (PSCJ)	107
29.	Intercorrelation Analysis Matrix for Verbal Output, Feedback, Input and Output, and Learning	111
30.	Intercorrelation Analysis Matrix of the Criteria of the Emotional Feedback Process and Learning	115
31.	Intercorrelation Analysis Matrix of the Criteria of the Cognitive Feedback Process and Learning	117
32.	Intercorrelation Analysis Matrix of Feedback Process: Quality of Cognitive and Emotional Feedback Input and Output with Learning	120
33.	Significance of the Difference of the Mean Number of Criteria Satisfied on the First and Last Five Emotional and Cognitive Feedback Outputs	123
34.	Groups Compared Based upon High or Low Verbal Output	125

LIST OF FIGURES

FIGURE		Page
1.	The Relationship of Verbal Output, the Feedback Process, and Feedback	66
2.	Feedback Process Analysis	76
3.	Feedback Process Analysis Worksheet	78

LIST OF APPENDICES

Appendix Number	Item
I.	Feedback Theory (Lecture Notes)
II.	GROUP PERCEPTION INVENTORY INSTRUMENT
III.	Helpful Information

CHAPTER I

INTRODUCTION

Statement of the Problem

This investigation is concerned with the relationship between the verbal output of the members of a T-group during a one week laboratory and the amount of learning in the group. Learning in this study will be seen as change in the ability of the participant to give feedback. Feedback in this study will be the verbally expressed reactions of group members to what other group members have said or done. An assessment will be made of the feedback process during a one week laboratory so that the amount and kind of feedback given and received by the participants can be established. This information will be used to ascertain the relationship of the overall verbal participation of a T-group with the learning of the group, i.e. increase in the ability to give feedback.

Background

In 1946 sensitivity training began under the sponsorship of National Education Association and the Research Center for Group Dynamics of the Massachusetts Institute of Technology. Its basic feature was the Basic Skills Training Group (B.S.T. will indicate this group in the remainder of this paper) which was the forerunner of the T-group. In this early laboratory, which was called a Workshop, the staff inadvertedly discovered that by sharing its observations with the members of the B.S.T.,

the whole climate for learning was enhanced. During the discussion of these observations, first from staff members and eventually from everyone, the participants reported deriving important new understandings of their behavior and of the behavior of groups. (Benne (4), pp. 81-83)

The history of the T-group and its place in a training laboratory falls in two periods. The first period from 1949 through 1955, is characterized by a variety of experimental attempts to create training designs to meet learning goals seen as extraneous to the objectives of a T-group. The T-group experience was fragmented into smaller activities and different groups, each focusing on some particular aspect of the whole, e.g. skill practice, back-home, or theory.

The second period is the development of the T-group in training laboratories which extends from roughly 1956 to the present. Continued experimentation with the T-group have taken place; however, efforts were made to reintegrate the T-group experience. The training movement during this time underwent a proliferation of activities into many types and kinds of laboratories. The T-group became and remains the basic educational method in training laboratories, although now it is employed in occupational, cross-cultural, industrial, church, organizational, and "family" populations as well as social work programs in which it began in 1946.

Accompanying the evolution of the T-group has been the emergence of a theory of learning called the laboratory learning method. In the theory section of this paper the laboratory

method will be discussed fully. At this point, it will be helpful to consider the goals of it.

The goals of the laboratory method are identified by Bradford (6) as:

(1) Learning how to learn

(2) Learning how to give help

(3) Developing effective membership relative to groups. (pp. 190-193)

These goals differentiate into several desired outcomes for the participant:

(1) "Increased awareness of and sensitivity to emotional reactions and expressions in the participant and in others.

(2) "Greater ability to perceive and to learn from the consequences of his actions through attention to feelings, his own and other's.

(3) "Clarification and development of personal values and goals consonant with a democratic and scientific approach to problems of social and personal decision and action.

(4) "Development of concepts and theoretical insights.

(5) "Achievement of behavioral effectiveness in transactions with one's environment.

(6) "Recognition of continuing opportunities to apply new learnings in back-home situations." (Benne, Bradford, Lippitt (5), pp. 16-18).

The maximization of these goals in the laboratory learning method is described by Batchelder (3) as:

> "an educational strategy which attempts to create a situation in which the participants, through their own initiative and control, but with access to skilled professional leadership and new knowledge, can evaluate their old attitudes and behavior patterns and explore new ones. A laboratory requires a temporary removal of the participant from his usual living and working situation where any attempt to re-evaluate attitudes or to experiment with new behavior patterns is fraught with risks and punishments. It provides a temporary artificial supportive culture (hence the designation laboratory) in which it is safe for the participant to confront the possible inadequacy of his old attitudes and behavior patterns, and to experiment with and practice new ones." (pp. 121-122)

The basic educational tool used in a laboratory is a T-group. Today T-groups take many forms (e.g. trainer vs. trainerless; individual focus vs. group focus vs. organizational focus vs. community focus; etc.). The basic aspects of the T-group are aptly described by Bradford (6):

> "This then is a T-group: a group formed for individual learning purposes where the data are created and analyzed by the work of the group and not fed in from outside and interpreted by a teacher, where learning is a group task entered into jointly, where the trainer does not deny the group members the experience of creating and maintaining their own group even though this experience will be difficult and may produce anxiety, and where the motivation for learning comes from the high degree of emotional involvement of the members." (p. 195)

The central phenomenon in the T-group which energizes its work is the focus on the "here and now." In many learning groups the focus is on a speaker or a piece of literature. In the T-group the content data for learning evolve out of the relationships of the persons in the group. The "here and now" focus implies the necessity of observing "what is going on" in the group, of responding to "what one observes", and of checking one's observations with other group members. It is this focus on the

"here and now" in the T-group which provides the content for the feedback process.

The discovery made in the 1946 workshop in a B.S.T. group was that behavioral feedback sparked new learning. The workshop leaders realized that supplementing "there and then" problem discussions with observations of the participants' behavior during the learning event facilitated learning and change. The addition of feedback to the other expectations of the B.T.S. group created an overload. Therefore, in order to reduce the overload, the T-group was developed in 1949 at Bethel in the NTL Laboratory. The original T-group focus was on the interpersonal events occuring between the members and trainers of the group. The "here and now" focus was parcipitated through feedback. Since the early experimental T-group, the foci of the experience has expanded to include other aspects of personal and group development but the use of the feedback process is still primary to the learning transaction.

The T-group utilizes the feedback process as the primary method for helping participants discover the consequences of old behavior, sustain effective behavior, identify ineffective behavior, and support experimental behavior. Batchelder's (3) description of feedback in laboratory training is:

> "feedback signified verbal and non-verbal responses to a unit of behavior, given by others to the person initiating the behavior. .... Feedback can be either positive, in which case the original behavior is validated and enforced, or negative, in which case a stimulus is provided for the individual to change his behavior in the future or at least to examine the assumptions, values, feelings, and perceptions which he has about the behavior in question." (p. 121)

The focus of feedback in a T-group can be on at least four sets of dynamics: intrapersonal, interpersonal, intragroup, and intergroup. Which of these four foci or combination of them are emphasized in a laboratory depends upon the stated goals of the lab and the tendencies of the trainers. For training to accomplish its general goals and outcomes as outlined above, interpersonal and intragroup feedback systems need always be operative.

The T-group method makes several assumptions about participants:

- that participants will be willing to learn from their experience.
- that participants want to "learn how to learn" by reflecting over experience.
- that participants need to improve their effectiveness as group members.
- that the process of feedback is instrumental in learning.
- that participants will verbally participate in order to learn.

This investigation will examine the last two assumptions in terms of their relationship to each other and to learning.

Objectives

The objectives for this study are:

- To discover whether there is a relationship between learning and verbal participation in T-groups.

- To more clearly identify and understand the role of the feedback process in the laboratory learning process in T-groups.

Twelve questions will be examined in this study to clarify the relationship between verbal participation, feedback, and a participant's learning in a T-group:

(1) Does the amount of verbal output by a participant in a T-group relate to the amount of learning by the person?

(2) Do participants who participate verbally more often in a T-group learn to give feedback more effectively than persons who participate less frequently?

(3) Is there a relationship between a person's learning and the kind (cognitive or emotional) feedback he receives?

(4) Is there a relationship between a participant's learning and the kind of feedback he gives in a T-group?

(5) Does the quality (negative or positive) the feedback a person receives relate to his learning?

(6) Does the total amount of feedback output by a group member relate to his learning?

(7) Is there a relationship between the number of times a person receives feedback and his verbal output?

(8) Is there a correlation between the number of times a person gives feedback and the number of times he participates verbally in the group?

(9) Does the number of criteria satisfied by a person's feedback input relate to the number of criteria his feedback output satisfies?

(10) Is there a correlation between the quality (positive or negative) of a participant's feedback input and the quality of his feedback output?

(11) Is there a relationship between the feedback input of a participant to the group to his feedback output to the group instead of the specific individuals?

(12) Does the feedback output of a participant relate to his feedback input?

CHAPTER II

RELATED LITERATURE AND THEORETICAL CONSIDERATIONS

Status of Theory

Laboratory Training Method

The purpose of this section is to review some of the relevant theories related to the laboratory learning process as it operates in a T-group.

The theory about the laboratory training method has tended to lag behind the practice in sensitivity training. The theories that do exist about training and T-groups are partial. There has yet to emerge a systematic encompassing theory which covers all the aspects of training. Gibb (18) states in a review of the literature that T-group theory exists "as a loosely related and only partially articulated body of assumptions, intuitive impressions, and hypotheses derived from a blend of experience and speculation." (p. 168)

In light of the above assessment of the status of theory relative to training and the laboratory method, this review of theory represents an attempt to coordinate several partial theories, each focused on a particular aspect of training, which will aid in the interpretation of this investigation of T-group learning and participation.

The T-group occurs in a training laboratory which is planned to help participants utilize the laboratory learning process. The laboratory learning process involves participation

and feedback which is reinforcement. Therefore, a review of the theory and research that follows will be in these areas:

1. Laboratory Learning Process Theory
   a. Reinforcement
   b. Feedback
   c. Participation
   d. Relearning
2. Group (T-group) Development Theory

Laboratory Learning Process Theory

The training method utilizes a learning process which has been described in several cognitive illustrations (called theory in a laboratory). The cognitive illustrations, or "maps" as they are sometimes referred to, include a sequence of stages in the laboratory learning process. Below are four different versions of the sequence of stages:

(1)	(2)	(3)	(4)
Experience	Experience	Do	Practice
Reflect	Identify Analyze Plan	Look Think Plan	Feedback Cognitive Input Evaluation Generalize

In each case there are sub-processes involved in each stage. All of these cognitive illustrations are viewed as cyclical in that a participant goes through the stages over and over during a particular laboratory. In the knowledge of the author only the fourth cognitive map (4) has anyone's name attached to it, and that one is this author's.)

A more comprehensive map of the laboratory learning process is stated by Miles (28). He presents a three phase model which identifies "internal conditions" experienced by the participant learner as he becomes and is involved in learning in human relations training. The phases and sub-steps are conceptualized in "a cummulative form, such that each successive condition requires, as a precondition, reaching some critical point or 'floor value' in all preceding conditions." (p. 76) Miles described the learning process as one in which the participant experiences the following conditions in each of three phases:

Phase A. Internal conditions in the potential participant prior to training entrance

- A1. Perception of general relevance of training to work
- A2. Dissatisfaction with present group situations
- A3. Perception of the possibility of group-relevant change
- A4. Perception of self as capable of participation in group-relevant change
- A5. Perception of the training activity as a means for bringing about group-relevant change
- A6. Willingness to participate in the training activity in order to gain something new
- A7. Decision to attend the training activity

Phase B. Internal conditions prior to active engagement in training (in which the decision to be made

is whether or not to become emotionally involved in training)

B1. Perception of group operation in the training event as relevant to back-home job concerns

B2. Dissatisfaction with conditions in the T-group

B3. Perception of change as possible in dissatisfying conditions of T-group

B4. Perception of self as able to participate in changing the T-group conditions

B5. Perception of the training activity (e.g. his T-group) as a means of reducing his dissatisfactions

B6. Willingness to get involved and be changed by the other T-group members

B7. Decision to get personally involved in the learning process of the T-group

Phase C. Internal conditions during active learning (active learning refers to a condition which the participant is in that allows him to change due to two kinds of learnings: (1) action learning which is the appropriation of new behavioral skills relevant to group membership; (2) meta-learning which is the appropriation of a new way to learn, e.g. the lab learning process)

C1. Willingness to "unfreeze", to reconsider old habit patterns of interaction. Willingness comes because of less threat in the T-group

C2. Visualization of new actions which might contribute to the resolution of member and group dissatisfactions

C3. Action tryout in which the learner practices his intended new behavior

C4. Undistorted perception by the learner of feedback to his experimental behavior. Feedback needs to be non-punitive and the learner needs to have a generalized trust of the other group members

C5. Perception of reward by the learner which increases his satisfaction with his new behavior. Reward is exchanged mostly through the feedback system

C6. Cognitive clarity about the new behavior helps the learner discover the appropriateness of his new behavior to back-home situations

C7. Development of a relevance framework in which action learning in the T-group is linked to conditions and problems in the back-home groups of the learner

C8. Development of an action-image framework which provides the learner with a repertoire of "things to do" in groups (pp. 78-87)

Miles' cognitive map of the laboratory learning process captures many of the aspects of the process. However, there are several of those aspects which need further theoretical classification.

In the laboratory learning process the relationship of the participant with his environment (i.e. other group members, training goals, room furniture) is one of mutual influence. The conditions within T-group and the conditions within the learner are expected to interact with each other as learning occurs. Miles' cognitive map of the learning process implies this mutual modification process in steps A3., A5., B3., B6., and C1., C2., C3., C4., C5., and C6.

It needs to be noted that the mutually modifiable environment and learner aspect of the laboratory learning process is one of the things that differentiates it from the information-centered approach of Essentialism (Wingo (41), pp. 81-121). In the more traditional learning theory of Essentialism, the learner is considered plastic but the cultural environment (substantive content) fixed. Learning in this theory occurs when the learner has modified his behavior to fit predetermined expectations which come from the culture through cultural information from the teacher. It is a one-way process. On the other hand, the laboratory learning process assumes a two-way process of influence and change.

The Concept of Reinforcement in the Laboratory Learning Process

The concept of reinforcement is a crucial factor in the laboratory learning process. As outlined above, Miles notes the occurrence of reinforcement at steps B1., B2., B5., B7., C1., C4., and C5. (see pages 10-11). In the laboratory setting the stimulus is the other members of one's T-group and the

response is whatever behavior one exhibits toward them. Since each participant serves as stimulus to other participants and also makes responses to others as stimuli, there is an interpenetration of stimulus and response in the laboratory learning process. "Appropriate" responses are rewarded and "inappropriate" responses negatively reinforced.

A problem lies in the determination of which responses are "appropriate". Benne, Bradford, and Lippitt (5) state that the T-group must establish a set of standards or norms "against which the 'correctness' or 'appropriateness' of member reactions and group performances can be measured (p. 25). In practice trainers operate with a set of norms for the laboratory learning process by which they measure their interventions. Typical norms of laboratory learning process include such items as:

- Focus on the here and now
- Express feelings as well as ideas
- Use behavioral data when giving feedback

However, there exists in the learning environment of the T-group a great deal of ambiguity about behavioral norms. Gibb (17) identifies the central norm areas as:

Amount of risk

Amount and kind of trust

Ways to handle deviancy

Membership privileges

How to express rejection

Ways to give feedback

How to make decisions

Amount of rejection over group process

Amount, intensity, and kind of feelings expressed

Goals

Sanctioning system

Degree of experimental behavior encouraged

When and how to work and/or play

How to handle conflict

Strength of group boundaries

Ways to organize for action (pp. 306-308)

As T-group members work toward the establishment of relevant norms for their group in the areas outlined above, the reinforcement system or sanctioning system is developed and implemented.

At least two classes of norms emerge related to learning and thus two sets of "appropriate" responses are available. One class of norms will focus on the laboratory learning process itself and will be used to evaluate change in the meta-learning area identified above. The other set of norms will focus on appropriate group membership behaviors and are related to action learning as Miles (28) uses the term.

Shepherd (37) explains the concept of reinforcement implemented in the laboratory learning process by citing Festinger's theory of social-comparison processes. Festinger contends that people are motivated to evaluate their opinions and abilities. In some situations, e.g. T-group, the only sources of evaluation are the opinions and reactions of others because there is no objective standard (p. 47).

The theory is lacking concerning the amount and kind of reinforcement which ought to be given to insure optimal learning in the laboratory learning process. Miles (28) states:

> The person must come to feel that some aspect of the new behavior which he tried has positive instrumental value. During the course of feedback, he will have been both rewarded and punished. But unless he has been able to attach feelings of reward to the trial action, he is unlikely to desire to reproduce the action at later, appropriate times. Punishment alone simply encourages the cessation of 'undesirable' behaviors. It does not automatically guarantee that the person will engage in - or know how to engage in - desirable ones." (p. 85)

In general, laboratory learning theorists indicate that positive and negative reinforcement are necessary for learning. However, the intensity of reinforcement, the most appropriate method for expressing it, and the schedule of reinforcement are not clearly specified.

The Concept of Feedback in the Laboratory Learning Process

The necessity of feedback has been identified at several points in the description of the laboratory learning process outlined above. In Miles' model feedback occurs in steps B2., B4., C1., C4., and C5. (see pages 10-11). The feedback process (see definition in Chapter I above) is the system of exchange of reactions in the laboratory learning process which provides the participant with new data about his behavior and the T-group's development. These reactions are the major stimulus for change. At the outset feedback identifies for group members areas of personal and/or group development which are ineffective. Dissatisfaction arises which the participant

attempts to reduce by trying other behaviors. Either intentionally or accidentally T-group members eventually perform the required behaviors to institute the laboratory learning process in their group and to resolve central norm issues. Positive feedback is elicited by the behaviors that help a group or person resolve central norm issues. Feedback is the reinforcement process in the laboratory learning theory.

Feedback has several dimensions. It can vary in content, value, and in terms of the style of the person giving it. The content can vary between two classes or be a combination of them - cognitive or emotional. Cognitive feedback is an intellectual or mental response to what another person or group has done. It is usually expressed verbally as an opinion or idea-statement in response to the stimulus behavior. Emotional feedback is an emotional reaction to what another person and/or group has done. It tends to be expressed verbally as the identification of a feeling-response.

Both cognitive and emotional reactions can be either non-verbal or verbal or both. If the reaction is only non-verbal it is often difficult for the recipient of the feedback to know clearly whether it is an emotional or cognitive response, and whether it is positive or negative.

Feedback also varies in quality, that is it can be a negative or positive reaction to the observed behavior. It is this aspect of feedback that conveys the value message of reinforcement. Positive reinforcement sustains behavior and negative reinforcement attempts to change it.

In order for feedback to be effective in stimulating and maintaining change in the laboratory learning process feedback needs to meet several criteria. There are several listings of these criteria in laboratory training materials. Miles (23) notes three criteria of helpful feedback as: "(1) clear and undistorted; (2) come from a trusted source; and (3) follow closely as possible the behavior to which it is a reaction." (p. 43) The Basic Reader in Human Relations Training (2) has a more extensive list: "Helpful feedback is:

1. Descriptive rather than evaluative
2. Specific rather than general, referring to an individual's particular behavior
3. Appropriate to the needs of the recipient
4. Useable, directed toward a behavior the receiver can change
5. Timely
6. Clear, checked to insure that the recipient heard the feedback accurately
7. Accurate, substantiated by several persons in a group
8. Trusted, that is the receiver has confidence in the person giving feedback." (p. 103)

One assumption in the feedback process is that persons have reactions to the behavior of others. This assumption seems valid. The reason so little effective feedback is exchanged in typical interaction is because there is a lack of openness, of "leveling", and of paying attention to what other persons are actually doing or saying. And further, openness and leveling only happen when there is enough willingness on the part of the

persons involved to engage each other in meaningful communication. Helpful feedback is dependent upon step B6. (see page 10) in Miles' description of the laboratory learning process. In short, the feedback process requires an emotional involvement in the particular relationship as well as the skills implied in the criteria suggested above.

Another factor affecting the feedback process in laboratory learning is the current stage or level of development of the group. This factor is especially relevant to the laboratory learning process which occurs in a training laboratory in which the medium for feed-back is the behavioral-field as it emerges in a T-group. A T-group is a new group which by necessity needs to evolve in order to pass through any of the stages of group development. The nature of the feedback which can be effectively exchanged will depend upon the level of development in a T-group. Mills (30) has identified five stages or systems in group development and the kinds of feedback, one of which will be exchanged at each stage. A review of his model is presented below in the Section on "Small Group Theory", but relevant here are the types of feedback at each stage. At each stage of group development there is a particular kind of system of interaction occurring. Mills (30) identifies the five systems in which a group operates as it develops:

1. Interaction system, the level of behavior
2. Group emotion, the level of emotion
3. Normative, the level of group norms
4. Technical, the level of group goals

5. Executive, the level of values about what the group is or could become. (p. 59)

The interaction and group emotion systems combine to provide the first data for feedback. At this level feedback will be focused on an exchange of how persons feel about what other persons are doing. Reinforcement at this stage is personal affirmation or rejection based on emotional responses.

As a group acquires operating norms the feedback process becomes more complex because added to the emotional exchange are observations of group members' behavior in terms of group norms. Mills (30) states:

> "Steps in the new feedback process are as follows: given an act by some member, (1) does the act correspond to the group's ideas about what the act should have been? (2) if it does, then no response is necessary and attention is directed to other matters; (3) if, on the other hand, it does not correspond, then what sanctions are to be applied? (4) of the possible sanctions which ones are, in terms of the norms, legitimate? (5) applying the sanction; (6) assessing the response to the sanctions, i.e. reading its effectiveness in inducing the actor to conform to the norms; (7) altering the sanction to increase the likelihood that subsequent behavior will conform to the norms." (p. 86)

Reinforcement also relates to conformity to group norms.

When group goals are established, the technical system allows feedback on whether member's behavior is effective in helping the group reach its goal. This is an even more complex feedback process because as Mills (30) states:

> "One of the more difficult steps in the feedback process on this level is to read, moment by moment, the indicators (i.e. a suggested method for reaching a particular goal) of effectiveness." (p. 86)

Reinforcement is in terms of productivity of a group member's behavior.

The executive system is entered when one or all of the members of a group become concerned about what the group is and what it might become. Executive functions are to develop group consciousness and to influence what the group is to become. Feedback which focuses on the executive functions is exchanged in the most complex of the feedback systems because the feedback-giver (the member performing the executive role) must be able to "read" the "momentary situation" which Mills (30) describes as "comprised of all factors, circumstances, and forces (elements), whatever their nature or location, which have a determinant effect upon what events do or do not occur, or are likely or not likely to occur, in the group." (pp. 93-94) Of course no one or even no group is ever aware of all these data. Therefore, feedback is given on the basis of selected events or factors to be observed. If the irrelevant events are observed, feedback is not helpful to group growth and the group eventually degenerates. Reinforcement at this stage would be in terms of group values which are presupposed by conceptions of what the group might become.

Participation Process Theory as it relates to the Laboratory Learning Process.

The feedback process in the laboratory learning process assumes the operation in the T-group of an active, spontaneous, reality-based, verbal interaction process. Therefore the role of the trainer is to develop as soon as possible an effective, active, verbal system of interaction between participants so that the process of giving and receiving helpful feedback may be started.

Since the feedback process is a part of the interaction process, it will be affected by the same dynamics as affect interaction.

Collins and Guetzkow (14) quote Blau and Scott as having suggested that communication and interaction:

> "refer to the same processes but to different aspects of them. The concept of social interaction focuses principally upon the formal characteristics of social relations: such terms as frequency, initiative, super-coordination, and reciprocity indicate its dimensions. The concept of communication, on the other hand, directs attention to the meaningful content conveyed in the encounter, and its characteristics are described by such terms as flow of messages, obstacles, positive and negative reactions, and exchanges." (p. 166)

The feedback process in laboratory learning involves both social interaction and communication. In the T-group setting feedback is dependent upon the nature of these two processes.

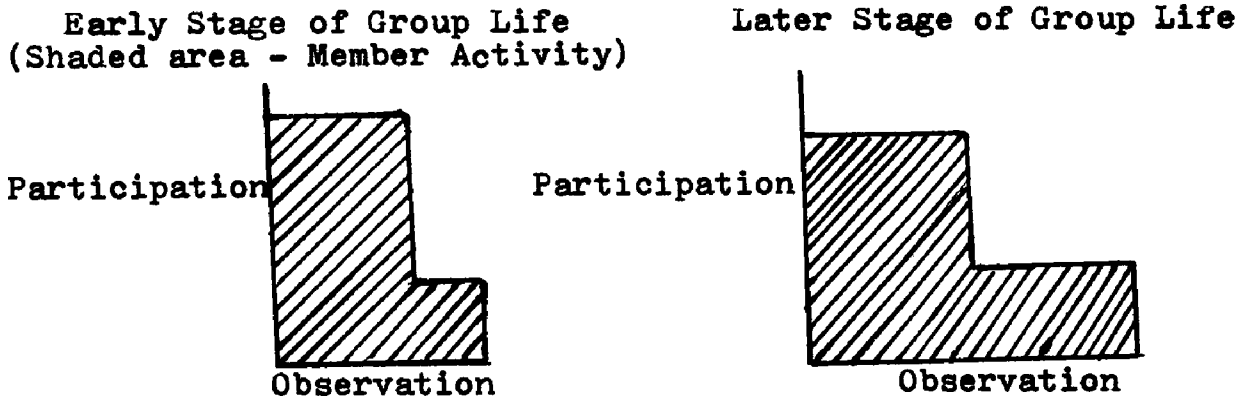
Mills (30) notes that social interaction is affected by whether interaction is ordered by the distribution of verbal participation among the members of a group, by group size, and by the amount of "economy" of interaction.

Another dimension of social interaction, previously cited by Miles (28), is the emotional willingness of the group member to become involved in the laboratory learning method. Bradford (6) states that:

> "Effective membership means that the individual has achieved a healthy balance between investment of self and withholding self. With help from others, he has reduced his anxieties so that he can determine the investment he will make on the basis of relevancy to group concern and to his own interest."

As the group moves through its various levels of development, the member will be continually remaking this decision about his degree of participation.

The emphasis on the use of behavioral data in giving feedback in the laboratory learning process encourages the participants in a T-group to observe behavior. The processes of observation and of participation interact with each other. Whitman (40) has diagrammed the interaction between observation and participation processes this way:



Whitman states that group members

> "often increase the areas of both observation and participation. And certainly the group exerts a pressure for increasing these areas or balancing their relative proportions. Silent members are encouraged to speak or give their views, and active members are cautioned to become more reflective." (p. 320)

Collins and Guetzkow (14) suggest several propositions concerning the interaction system in a group which are relevant to this investigation:

"9.1 Interaction is unevenly distributed among group members.

9.2 The more interactions initiated by a group member, the more interactions will be directed to him by other group members.

9.4-B. When a status hierachy is still in the process of being developed, participants who aspire to high

status will communicate more to potentially low status persons than to aspiring high status persons.

9.4-C. The content of communication from low to high power-status persons will depend on what the low status person has learned is most likely to obtain reinforcement.

9.6 Communication serves to increase the uniformity of opinion within the group." (p. 187)

The authors are referring to the communication process and since feedback is communication these factors are relevant.

The laboratory learning process depends upon the content of feedback to provide the stimulus for learning and change in the recipient. Collins and Guetzkow (14) quote Campbell's description of some of the errors which enter into the human communication system. These "errors" will affect the way feedback is received by the listener. The errors that Campbell notes are:

(1) that recipients' "understanding will be shorter, simpler, and less detailed than the objective input."

(2) that the "middle portion of the message will be least well retained."

(3) that there is a tendency to distort the message in clear-cut entries so that gradations are reduced by exaggerating some differences and losing others.

(4) that "imperfectly transmitted messages will be distorted in the direction of important past messages, both rewarding and punishing."

(5) that "messages are modified so that they resemble meaning similar to previous messages."

(6) that "errors will, in general, be in the direction of making the meaning of a stimulus message similar to the meaning expected by the receiver."

(7) that participants tend to reduce the content of messages so that they mean little more than 'this is good' or 'this is bad'."

(8) that "there is a strong tendency toward overdependence on a single source of communication and a neglect of all other sources."

(9) that if a group of persons are asked to state the meaning of a message, "they will distort their individual interpretations in the direction of their fellows." (pp. 183-185)

In short, the laboratory learning process which is highly dependent upon the feedback process is relying upon the highly complex system of social interaction and verbal participation as it occurs in a T-group.

Relearning Theory as it relates to the Laboratory Learning Process

Another aspect of the laboratory learning process, particularly when the participants are adults (18 years or older), is that past learnings are present in the person who engages in the T-group. It is these past learnings expressed through behaviors which are identified in the feedback process. Some of the past learnings of the participants about social-interaction,

learning, and group development will be tagged as ineffective. Old behavioral patterns are identified, then changed, then new learning can occur. The "unfreezing" stage mentioned by Miles above (page 11 in this paper) is crucial to the relearning process. Burton (11) has summarized the principles involved in relearning as:

"1. Re-education is the achievement of changes in the learner's knowledge, belief, and values.

2. Re-education affects the cognitive structure of the individual, his perception of physical and social worlds, by changing his knowledge, beliefs, and expectations.

3. Re-education modifies the learner's personal values with respect to group and interpersonal relations.

4. First-hand experience does not guarantee correct concepts; the total learning situation must be conducive to a change in cognition.

5. An individual's perception of the facts and values of a situation affects his behavior.

6. The possession of correct facts in the face of false perceptions does not assure change in inadequate social stereotypes.

7. Inadequate social stereotypes are as difficult to obliterate as are incorrect concepts stemming from ignorance and misinformation.

8. Changes in emotional reaction do not necessarily follow acquisition of correct factual information.

9. A change in the 'culture of the individual' is equivalent to a change in values, a change in the

perception of social relationships, a change in 'action-ideology'.

a. Hostility to re-education may stem from loyalty to old values.

b. The new set of values must be freely chosen and accepted if re-education is to be successful.

10. Emotional acceptance of the new set of values must be a gradual process.

11. The new set of values necessary to change behavior is acquired frequently with belongingness to a group subscribing to the new values." (p. 245)

Jenkins (23) states:

> "Much of adult learning is relearning rather than new learning.....relearning is undoubtedly more difficult than learning 'something new'. Relearning is likely to be accompanied by more anxiety and frustration than is usually found in a new learning situation." (p. 1)

Resistances and anxiety which result in the laboratory learning process are part of the data utilized by trainers to help participants understand themselves. However, old learnings and old behavior patterns, even though reflected in feedback to the participant, still hinder the T-group member's requisition of new values and behavioral actions.

In summary, the laboratory learning process has been described as an experienced-centered process in which learning and change occur as the result of participation which stimulates feedback and reinforcement as the participant tries to identify and modify past learnings about himself and groups.

Small Group Theory

The training method which employs the laboratory learning process emphasizes the use of T-groups. Utilization of the group means that group membership, group dynamics, and group development are three important factors in the learning process. A brief review of the theoretical concepts of those three group-factors is the purpose of this section.

Membership in groups is a necessity of human existence. At the outset, a human being must learn to fulfill those expectations of his particular family-group. As he develops he encounters a multitude of other groups (neighborhood, school, job, etc.) each of which require him to fulfill certain expectations for membership. Seldom does the average person, however, realize how membership expectations are formed, sanctioned, and changed. Seldom also does the average person know how to change membership expectations toward helping a particular person (maybe himself) or a group become more effective in attaining its goals. Sensitivity training attempts to enable persons to re-evaluate their own participation and that of others in a group as it develops. The values espoused in training are autonomy and interdependence. The most productive ways to establish interpersonal relationships are visualized with respect to those two values. This process of changing the way one perceives and acts in groups is a process of resocialization. The T-group, which must establish its values, norms, and membership expectations, provides the participant an opportunity to experience and observe group development.

A participant's participation in a T-group's early life will be on the basis of group membership expectations he has learned in other groups. There is often an attempt by one T-group member to impose his past on the group. Such attempts are often met with resistance by other members whose past group memberships are different. Feedback both ways between persons helps them identify learned-membership-expectations and see that in the T-group there is the freedom to establish whatever group membership expectations will help the group.

In particular, the T-group standards for learning, e.g. laboratory learning process, and standards from non-learning groups (groups whose primary reasons for existence are other than educational) seem to clash the hardest within and between the participants. Benne, Bradford, and Lippitt (5) state:

> "If the clash of standards can be faced by a learner, he acquires first-hand knowledge of the conditions which have made learning possible. One hope of transfer of laboratory learnings is that the learner will acquire a new reference group through membership in the laboratory." (p. 29)

This means that the learner will acquire, if he does become part of new reference group, a new source of positive reinforcement for behaviors acted out in the back-home situation.

Whether the process of resocialization effectively occurs is dependent upon factors of participation, feedback, reinforcement, and learning. Whether those processes which are integrated into the laboratory learning process occur depends upon how well the T-group develops into an effective group. In the discussion of the feedback process above it was noted that different kinds of feedback occur at different stages of

group development. The importance for considering several group development theories is that trainers in T-groups are usually operating diagnostically with some kind of theory of group development. The feedback which they report to the T-group on its process will be on behaviors selectively chosen depending upon the model being used. Two theories of group development will be reviewed: (1) Mills' and (2) Gibb's.

Mills (30) proposes an extensive theory of five levels of group development. He notes that the five purposes which underlie the formation and operation of groups fall into five "orders": (1) immediate gratification; (2) to sustain the conditions permitting gratification; (3) pursuit of a collective goal; (4) self-determination; and (5) growth. (p. 101)

In order for a group to accomplish and move through one purpose to include the next order of purpose certain kinds of feedback must occur, certain role-systems must be established, specific roles must be assumed by group members, and critical issues governing entry into the roles must be resolved.

The role systems with respect to each of the five orders of purpose are: (1) Interaction and Group Emotion; (2) Normative; (3) Technical; (4) Executive; and (5) Inter-group executive. Each of these systems has a particular kind of role which must be performed if the system is operative. The five roles are with respect to each system: (1) Behavioral and Primordial (Emotional); (2) Normative; (3) Instrumental; (4) Executive; and (5) Generative. The issues which group members must resolve as they assume the five respective roles are: (1) Commitment; (2) Authority; (3) Intimacy and Work; (4) Integrity; and (5) Interchange. (p. 105)

Mills (30) describes the kind of feedback necessary for each order of purpose as illustrated above in this paper. However, he further states that only certain elements in the total group situation are relevant to the feedback process as it occurs at each stage. With respect to each stage, the five sets of elements which are selected as the focus for feedback are:

Stage 1 - "Ego needs, actions, signals of needs and actions.

Stage 2 - "Environmental resources and limits; personal beliefs; personal and group norms.

Stage 3 - "Personal values and technical skills; group beliefs and values; inter-group contacts and loyalties, etc.

Stage 4 - "Information on all elements, role-systems, etc., listed above and on inter-group obligations.

Stage 5 - "Increasing range in personalities, group, and context." (p. 105)

The author is not aware of Mills' theory being used in any training laboratories; however, it does an excellent job of accounting for T-group development.

Gibb's (17) theory of group development is frequently utilized by trainers to diagnose and interpret events in T-groups. He identifies four "model" concerns which every group faces during its life-time. They are: (1) Acceptance - Membership; (2) Data - Decision; (3) Goal - Productivity; and (4) Control - Organization. He goes on to state:

> "The acceptance concern has to do with the formation of trust and acceptance of self and others, the reduction of fear of self and others, and the consequent growth of confidence. This concern becomes differentiated into concerns about degrees of membership. The data-flow concern has to do with the flow of feeling and perceptual data through the person or through the group, the system output of behavioral cues and all communicative evidence of attitudes, feelings, and perceptions; and the system of input of such data. This concern finds its expression in decision making and choice behavior in the group. The goal-formation concern has to do with the continuing assessment of intrinsic motivations at various levels into action sequences, problem solving, and decision making. This concern becomes differentiated into a concern about productivity, about doing work, having fun, creating ideas, learning, or growing. The control dimension has to do with intrapersonal and interpersonal control or regulatory mechanisms that lead to coordinated sequences of behavior in the group, formation of roles and expectancies, and integration of function into structure at all levels of social behavior. This process becomes a concern about organization, which has all the degrees of formality, stability, awareness, and complexity in all variety of social relationships." (p. 280-281)

Gibb's theory is a hierarchial one in which the implementation of the next concern depends upon a functional resolution of the previous one. A group will go through the resolution of the four concerns in a "contingent hierarchial" fashion, often repeating or reworking the previous level before it can continue in its work.

Feedback is relevant to the four stages of Gibb's theory. His description does not clearly define the kind of feedback for each level; however, it is implied in his articulation of the meanings of each concern. The first level would need positive emotional feedback to establish trust. The second concern would require emotional and cognitive feedback to establish clear communication, norms, make decisions, etc. The

third concern would also require emotional and cognitive feedback with regard to goals, norms, effectiveness, etc. The fourth concern would need feedback on goal performance, effectiveness of organization, etc. It can be assumed that as a group moves from one concern to the next it continues the feedback being expressed on the previous level and adds another dimension to it. Thus feedback would become cummulative in character.

The T-groups analyzed for this investigation utilized the Gibb theory for diagnosis and explanation of group development.

CHAPTER III

RESEARCH RELATED TO THEORETICAL CONSIDERATIONS

The purpose of this section of the study will be to review some of the current research on the laboratory learning process and the dimensions of reinforcement, feedback, and participation within it.

Status of Research in Human Relations Training

Harrison (21) noted that research in sensitivity training has encountered many problems in its design. There are problems of securing adequate control groups; temporal change in the training outcomes with little longitudinal data collected; unclarity in the dimensions and directions of change; variability in the training activities, the timing of data collection; and the relationships of experimenter and participant in training. However, many of these problems can and have been overcome so that there is an increasing amount of research available.

Even so, the present status of research in human relations training is fragmented and uneven. It will be noted in the pages that follow that the outcomes of the laboratory learning process and the interaction process have a great deal of data available. On the other hand, the process of feedback and the process of reinforcement in training have much less research results. The reasons for the uneven research data include the problems Harrison mentions. An even more important problem is the lack of a comprehensive theory

of training which could provide the framework for systematic research of the processes involved.

Research Related to the Laboratory Learning Process

Stock (39) notes that training and the laboratory learning process have influenced change in the following areas:

> "various perceptions of the self, affective behavior, congruity between self-percept and ideal self, self-insight, sensitivity to the feelings of others, role flexibility, sensitivity to group decisions, diagnostic ability, behavioral skill, utilization of laboratory techniques, self-confidence, and approach to diagnosing organizational problems." (p. 434)

To what degree has the laboratory learning process been influential in the changes Stock identifies? The question is difficult to answer precisely because a training laboratory is treated "as a whole" in research so it is impossible to state whether it was the learning process, the T-group, the theory sessions, or the free-time which affected the participants' learned change. It is assumed in this study that the laboratory process "as a whole" is instrumental in effecting learning change within a training laboratory.

Miles (28) found that the three processes of "unfreezing" (C1.) involvement (B6.) and feedback (C4.) which are a part of his description of the laboratory learning process (see page 10 - 11) were significantly related to change during the laboratory.

Bunker and Knowles (10) did two studies on the enduring changes in participants who had been in training. The 1960 study showed that two-thirds of the laboratory participants made significant on-the-job changes after training. The 1969 study

revealed that the participants in the three and two week laboratories changed more than the control subjects.

Miles, Cohen, Whitman (29) found consistent improvement in participants' "sensitivity to feelings" who were studied during five laboratories in 1959.

Argyris (1) evaluated the relative effectiveness of lecture vs. laboratory training methods in teaching the subject areas of interpersonal and group dynamics. The data suggest that a laboratory approach, with its emphasis upon such exploration and confrontation, seems to produce more behavioral change.

Bowers and Soar (7) investigated behavioral and attitude changes by teachers following three weeks of half-day training sessions, composed of theory input, skill practice, and T-group training. Post-training results indicate that trained teachers made significant changes in their attitudes toward pupils and democratic leadership. The control group, which received no training, also made the same changes in the same directions and the difference was not significant between the groups.

Buchanan (8) concludes after a review of many evaluation studies of laboratory training in industry that laboratory training is effective as a means of facilitating specific changes in individuals in the industrial setting.

Batchelder (3) notes studies done by Valiquet, Greiner, Schutz and Allen, all of which support the contention that the laboratory learning process produces changes in participants. He notes that training does have a selectively different

effect on individual persons depending upon the participant's original personality. (p. 42-43)

Schutz and Allen (36) found an increase in flexibility, honesty, confidence, and acceptance in the relations participants had with other persons as a result of their training.

Research on the laboratory learning process has identified the significant role training can have in change. However, due to problems outlined above there is not yet enough conclusive and supportive evidence to clearly delineate precisely how, when and why the process works.

Research Related to the Reinforcement Process within the Laboratory Learning Process

Collins and Guetzkow (14) present a model of factors which are operative in the molding of interpersonal behavior and task performance. They contend that these are two kinds of stimuli in an individual's environment which can stimulate change-behavior and which are sources of reward to new behavior. The two kinds of stimuli are "(1) obstacle stimuli which define the problems of the group and its members, and (2) reward stimuli which serve to mold and maintain group behaviors." (p. 64) The authors further differentiate obstacle and reward stimuli into two types: (1) task-environmental and (2) interpersonal. Both task-environmental and interpersonal obstacles and reward stimuli are operative in the laboratory learning process. In the T-group, group development and productivity (task-environmental) are dependent upon the quality

of interpersonal relationships (interpersonal). Therefore, reward stimuli from both these sources will be influencial in changing the behavior of the T-group learners.

Collins and Guetzkow (14) define the reward stimuli as:

> "A task-environmental reward is a stimulus or aspect of the task environment which will increase the probability of recurrence of the response which it follows. An interpersonal reward is a stimulus or aspect of the behavior of other group members which increase the likelihood of repetition of behavior which it follows." (p. 75)

An illustration of task-environmental reward in a T-group would be the establishment of clearly a recognizable and consensually determined group norm. An interpersonal reward in a T-group would be positive feedback from another group member in relation to one's initiatory behavior.

The authors (14) review research which supports their model. Task-environmental rewards are often mediated through problem-solving events. Lanzetta and Roby's experiment included subjects who worked hard to set switches correctly for sake of setting them correctly. Interpersonal rewards are demonstrated by techniques used in verbal conditioning experiments. Greenspoon could increase the probability of plural words spoken by a subject by saying "mmm-hum" (i.e. yes) in response. Taffel could increase the use of "I" or "We" in sentences constructed by subjects around verbs he supplied if he followed such sentences with a phrase "good". (p. 75-76)

Collins and Guetzkow (14) refer to research by Fouriezos, Hutt, and Guetzkow (1950), Rosenburg (1960), and Zajonc (1962) to support the idea that:

> "If a reward (task-environmental) is given to the entire group, then each individual cannot know which of his behaviors contributed and which detracted from group success." (p. 77)

Also, task-environmental rewards are frequently delayed due to slower feedback from the external environment of a group.

Interpersonal rewards, on the other hand, are more in the member's control, immediately available, and easily focused on specific member behavior. Several factors enter into the interpersonal reward-process.

One factor is the power of the individual giving the interpersonal reward. An individual with resource relevant to the group's situation has more power and more reward-potential. Butler, Ono, Miller (1962), Cohen (1958), and Bennis, Berkowitz, Affinito, and Malone (1958) are reviewed by Collins and Guetzkow (14) as evidence that:

> "Direct control of task-environmental rewards is a source of power." (p. 123-125)

The trainers and eventually certain members of a T-group possess this kind of power in the laboratory learning process.

An individual can gain power to reward by being liked by the recipient.

> "Lippitt, et. al. (1952) had members of three camps rate each other. The campers rated high on power were liked by their peers." (Collins and Guetzkow (14) p. 128)

A consequence of a person having more power is that he has more influence. As a matter of fact, he can influence without making overt attempts to influence. Lippitt, Polansky, Redl, and Rosen (1952) discovered that campers rated high in power by other campers were imitated by other campers even

though they had not sought to be imitated (Collins and Guetzkow (14) p. 154)

Another factor in the reward process relative to interpersonal stimuli has to do with the stimuli presented by the potential recipient. Where status differences exist between persons, e.g. trainer and group member, Collins and Guetzkow (14) assert that:

> "The content of communication from low to high power-status persons will depend on what the low status person has learned is most likely to obtain reinforcement (positive)." p. 176)

Research by Kelly (1951), Campbell (1958), Perlmutter and Hymovitch (1954), and Cohen (1958) support the conclusion that up-status communication tends to be less critical unless being critical is viewed as a way of gaining positive reinforcement from the high status-power person. (Collins and Guetzkow (14) p. 176-177)

Reinforcement may be viewed as relative to each person's system of values. That is, any response may serve as a reward-response to a person's stimulus-behavior. It depends upon what the person finds rewarding. Each person has a value system which prioritizes reinforcers. In order for something to have reinforcement power it must be more highly valued by a person than what is being reinforced. Hilgard and Bower (22) describe research by Premack which substantiates the contention that particular reinforcers will reinforce only those activities of lesser "value" to the person. Other research by Premack has demonstrated that the effect of a reinforcer is relative to a person's expectations on the range of rewards the person has received in similar situations. The authors conclude:

> "The effect on behavior of a given outcome (response) is seen as dependent upon its relation to an internal norm (in a person and/or group) derived via a pooling process from the series of prior outcomes encountered in a given situation." (p. 487)

In summary, whether the feedback elicited by the stimulus-behavior of T-group members is influencial in stimulating or maintaining learning change is dependent upon several factors identified by the research on reinforcement:

- the source of the reinforcement (task-environmental or interpersonal or both)
- the power of reinforcing agent
- the interpersonal attraction of reinforcing agent
- the status of the reinforcing agent
- the need-system and expectation-system of the reinforcement recipient

Research Related to the Process of Feedback within the Laboratory Learning Process

Feedback can focus on one or more of the five levels of personal and group development described by Mills (30) above, depending on the level of group development. The relevant research will be reviewed on basis of the feedback process as operative on the (1) Behavioral and Emotional, or (2) Normative, or (3) Instrumental, or (4) Executive level. A brief review of research on positive versus negative and task-oriented vs. feeling-oriented feedback will also be presented.

1. Research on feedback on the behavioral and emotional level of group development is concerned mostly with changes in personal behavior or personal conceptions.

Myers, Myers, Goldberg and Welch (31) found that

> "subjects in experimental groups who filled out sociometric questionaires and received feedback on their mutual ratings showed significantly greater increase in sensitivity during a three-day period than control subjects." (p. 175)

Clark and Culbert (12), French and Sherwood (15), Sherwood (38), and Gibb and Platts (19) have all produced data which supports the contention that the greater the amount of feedback a person receives the greater will be the change in his self-identity, self-awareness, and/or self-insight.

Lippitt (1959) is reported by Stock (39) to have studied the effects of feedback on changes in individual behavior. He discovered that 13 out of 14 T-group members who received feedback from fellow members on the way they wanted them to change their participation did so, as compared to only eight out of fourteen who changed without the feedback. (p. 429)

Collins and Guetzkow (14) report an investigation by Bales (1956) in which he tested out the hypothesis that unless a person is allowed to give occasional feedback to a "task specialist", the latter will be disliked by the group member. Bales developed a feedback ratio based on the number of communications a task specialist received divided by the number initiated. He found:

> "High initiators with low feedback ratio tend to be disliked. No such trend appears for high initiators with medium and high feedback ratios." (p. 219)

2. Research on feedback on the normative level of group development.

Feedback at the normative level of group development will be focused on deviancy and conformity to group norms.

Schachter (35) found in a study of the effect of deviant behavior:

- that deviates from a group standard were rejected.
- that the amount of communication received by a deviate increases to a peak during a meeting. When no change is noted in the deviate, communication ceases.
- that the importance of deviancy from the group standard is a function of the relevancy to the group of the standard in question.

Coch and French (13) found in a study of an industrial situation in which management was attempting to change work-norms, there was more willingness to adopt and maintain new norms if there was an opportunity for feedback and participation by the workers during the establishment of the new norms.

3. Research on feedback on the instrumental level of group development

Feedback on the instrumental level of group development will be focused on group member's effectiveness in helping the group reach its goal(s).

Norfleet (28) attempted to increase the productivity of a training group by encouraging the group members to respond to each other in terms of ability to help the group reach its objectives. She reports:

> "The laboratory goals of training members to play a productive role in the functioning of the group were

> achieved. Though we have no evidence to show which parts of the total pattern of training were responsive for this achievement, it seems probable that the feedback and evaluation sessions were of major importance." (p. 66)

Kolb, Winter, and Berlew (25) asked participants in four T-groups during two semesters to choose personal change goals related to their behavior in the group. Feedback was varied in the project with members of two groups asked to accomplish the project independently and with members of the other groups encouraged to get feedback in the T-groups on their respective projects. It was found that the amount of relevant feedback did affect the degree to which the personal change project was successfully accomplished.

4. Research on feedback on the executive level of group development

Feedback on the executive level will be aimed at helping the whole group develop sense of awareness about itself and what it might become. In the T-group most of this kind of feedback will come from the trainer who is able to attend to the meaning of more of the data in the group process.

Reisel (33) did a case-study in which he compared the two trainers in terms of their personalities and their performance as trainers. The relevance of this study to feedback serving an executive function is that Reisel demonstrated in his analysis how a trainer's personality highly influenced his interventions in the T-group. The kind, frequency, and emotionality of each trainer's feedback to his respective group was influenced by his own ego-needs and self-concept

and these in turn strongly influenced the T-group's self-consciousness and development.

5. Research on feedback: Negative vs. Positive

The value of the feedback determines whether it will serve as a positive or negative reinforcement of behavior. Stock (39) discusses an investigation by Miles (1958) in which one of the hypotheses was that negative feedback would be more effective in stimulating change than positive or neutral. Strong negative feedback was found to be most effective in inducing change. (p. 433)

Other research has produced evidence that demonstrates that positive reinforcement is more effective than negative.

In a discussion about negative reward or punishment Collins and Guetzkow (14) assert that one of the reasons punishment may be less effective than positive reward because:

> "It is necessary to punish all undesired behavior. Since the range of undesired behavior is frequently larger than the range of desired behavior; the agent will have to use more punishment or spread it thinner. Miller and Butler (1962) reported punishment was less effective than reward, possibly for this reason."

The same authors report another study by Kipnis (1958) in which lecture vs. participatory and rewarding versus punishing styles of leadership were varied. The results of the study were:

> "Both reward and punishment conditions produced more public compliance than a neutral condition. Under reward and neutral conditions only, the participatory style of leadership also produced more attitude change and more liking than the lecture style..... Under punishment manipulations, there was no difference in liking for the two styles of leadership. The participatory leadership style, which had formerly produced more attitude change than lecture style, produced

> significantly less attitude change when associated with punishment." (p. 136)

It is not clear from the findings in research whether negative or positive feedback is more influencial in producing change.

6. Research on feedback: Cognitive vs. Emotional

Cognitive and emotional feedback differ from each other in terms of their respective content-orientation.

Roberts, Schapler, Smith and Gibb (34) found feeling-oriented feedback improved the task efficiency of untrained groups more than trained groups (trained in sensitivity). The untrained groups which received feeling-oriented feedback also demonstrated the greatest reduction in defensiveness. The reason for the latter result was that the trained group had already learned to cope with its feelings.

In the investigation by Miles (1958) reported by Stock (34) in the above section on "Negative vs. Positive Feedback", he hypothesized:

> "that feedback content which is congruent with an individual's motivational state would be more effective than feedback whose content is not congruent." (p. 433)

His findings were that when the content had to do with warm interpersonal relations, the high congruity between feedback and person's motivational state facilitated change. Congruity was not a factor as feedback was focused on task-accomplishment. Another finding was that a person's orientation toward either goal achievement or threat influenced responsiveness to feedback about warmth and friendliness but not responsiveness to task accomplishment feedback.

The findings from research on feedback indicate:

- that feedback on the behavioral emotional level of group development will influence change in intrapersonal and interpersonal interaction.
- that feedback on the normative level of group development is influencial in creating group norms and is used to maintain conformity with established norms.
- that feedback on the instrumental level of group development is useful in assisting a person or group's accomplishment of its goal(s).
- that feedback on the executive level of group development is affected by the executive-person's ego needs and self-concept.
- that the effects of negative versus positive feedback are not clearly understood.
- that both cognitive and emotional feedback can stimulate change. However, the power of emotional feedback is affected more by the feedback-recipient's emotional state.

Research Related to Participation in Social Interaction in Sensitivity Training

Participation in groups has been observed to have several characteristics. One feature of interaction systems in groups is that they are "ordered" or "unordered", depending upon the nature of the group. As a group matures, its patterns of interaction tend to become "ordered". (Mills (30) p. 61)

Another feature of interaction systems is the distribution of activity among members. Mills (30) reports data produced by Bales which demonstrates an ordered system of interaction in which, with few exceptions, interaction is unevenly distributed and tends toward higher ranks of involvement. (p. 63)

Stephan and Mishler (1952) as reported by Mills (30) did follow-up work on Bales' analysis by recording outputs and receipts in thirty-six discussion groups. They found:

> "that the percentage of contributions of students in a given rank-order could be adequately estimated by the following simple exponential function: ($P_i = ar^{1i}$), where P_i is the estimated percentage for students ranked i in output, r is the ratio of any rank to the percentage for the next higher rank, and a is the estimate for students ranked highest. When applied to estimation of recipients, the function served almost as well." (p. 63)

Collins and Guetzkow (14) suggest a proposition based on research:

> "The more interactions by a group member, the more interactions will be directed to him by other group members." (p. 170)

They refer to data produced by Bales, Strodtbeck, Mills, and Roseborough in 1951 in which interaction was classified using Bales Interaction Process Analysis. Conclusions are described above. In addition Collins (1960) reported a correlation of better than .9 between the number of communications initiated and the number received in leaderless classroom discussion. (Collins and Guetzkow (14), p. 171)

Collins and Guetzkow (14) refer to several other aspects of the interaction process which have been supported with research:

> "high power-status persons will initiate a greater total number of communications. (p. 155) Gerard (1957) discovered

Ss who were told they were bosses initiated more messages. Borgatta (1954) found that persons who perceived themselves to be of higher status initiated more interaction. Hurwitz, Zander, and Hymovitch (1953) found that persons given a high pre-conference rating by local raters initiated higher number of communications. Lana, Vaughan, and McGinnes (1960) found that discussion group members rated high on leadership where characterized by a significantly higher rate of interaction. Mussen and Porter (1959) found that subjects rated "effective" by their peers had high frequency of participation. Collins (1960) found that participants rated high on influence in discussion groups initiated more than twice as many communications as low status participants. (p. 155-156)

"When a status hierarchy is still in the process of being developed, participants who aspire to high status will communicate more to potentially low-status persons than to other aspiring high-status persons." (p. 173) Larsen and Hill (1958) provide data from two camp groups, one with a fixed structure and the other a developing one. The first group showed excess of up-status communication whereas the second group showed excess of down-status communication. In both groups, transmitters of communication rose in status, while recipients dropped in popularity. (pp. 173-175)

"A high number of communications will be addressed to an accepted group member who expresses deviate opinions." (p. 180) Festinger and Thibaut (1951) found that in a group where opinion-position was obvious to all of the members, most messages were sent to persons expressing the extreme positions. Gerard (1953) had the same findings. Howard (1959) and Festinger et al (1952) also report more written communication to the deviant. (p. 180)

"Rejection of the deviate and sub-group formation will result in a low number of communications addressed to an unaccepted group member who expresses deviant opinions." (p. 180) Schachter (1951) reports an initial increase and then a decrease in interaction with a deviant. Festinger and Thibaut (1951) report a decrease in communication to the deviant only when (a) groups felt a low pressure to uniformity and (b) when the participants had been told they were chosen to be as heterogeneous as possible. (p. 181)

"A position of centrality and autonomy will produce satisfaction." (p. 205) Leavitt (1951) using Bavelas' communication nets found that in general, the greater the number of open communication channels, the higher the satisfaction; the circle was highest.

"There is some tendency for the most frequent interactor in the group to be (a) less liked and (b) more disliked

> than would be expected on the basis of a simple relationship between interaction and liking. Also, the second most frequent interactor may be rated lower than would be expected on a ranking for contributing ideas." (p. 216) Bales (1953) (1958) and Bales and Slater (1955) all produce evidence which indicates support for this conclusion. (p. 216-217)

Shepherd (37) concludes in his review of the research on small groups that:

> "If people like each other they will try to interact, and if they dislike each other they will try to avoid one another. Sentiment and interaction are directly related. Further, interaction may lead people to alter their sentiments toward each other in one of three ways. First, they may become disillusioned with each other and their liking may change to disliking, and as a consequence interaction between them may drop off sharply. Second, they may find that their initial disliking was based on misconceptions of each other and further information may lead them to like each other, and, thus, to increase the interaction between them. Third, further interaction may substantiate their initial sentiment and lead to increased interaction if they like each other or increased diligence in avoidance if they dislike each other." (p. 61-62)

Shepherd goes on to note that:

> "Perception of similarity, at least to some degree, encourages interaction which not only feeds back to sustain or modify the initial reactions, but also affects the general atmosphere (either cooperative or competitive) and the degree and kind of communication. A cooperative atmosphere typically accompanies similarity, a competitive atmosphere accompanies dissimilarity. So, too, active communication accompanies similarity, inactive communication accompanies dissimilarity." (p. 64-65)

Mills (30) notes that Slater (1958) devised an "index of inhibition" using Bales' categories of Interaction Process Analysis. Slater's index consisted of a ratio of "safe" acts to "impulsive aggressive" acts.

> "Comparing the ratios in groups of various sizes over four discussion sessions, he found: (1) that as group size increases, the index of inhibition decreases; and (2) that as members become better acquainted through the course of the meetings, inhibition drops more for

> larger groups than for smaller ones. As size of the group increases, the consequences of alienating a single member becomes less and less severe." (p. 64)

The research on participation in the social interaction of a small group has identified an uneven distribution of increasingly ordered communication between the group members which is influenced by such factors as the amount of interaction, the status of various members, the status of group development, the content of verbal interchange, the perceived similarity, the amount of liking, and the group size.

CHAPTER IV

DESIGN AND PROCEDURES

General Setting of the Study

The setting for this investigation is the Southern Academy of Teaching. The Southern Academy is a training laboratory sponsored and developed by the state offices of the Christian Churches, Disciples of Christ, in fourteen states in the southeastern United States in cooperation with the national department of Christian Education in the same church.

The summer of 1970 was the Academy's fifth year of operation. The site for this year's event was Craig Springs, Virginia, a conference center forty miles west of Roanoke, Virginia.

The Southern Academy has an average attendance of 90 participants who are divided among the various training laboratories simultaneously occurring. The Academy offers to its participants a three-year design. The foci for the three years are:

Section I (1st year)	- Basic Group Process and Personal Development
Section II	- Planned Change
Section III	- Program Design and Evaluation

The laboratory learning process is used during all three years; however, only Section I uses the T-group method. This year a fourth laboratory was a Training of Trainer lab for "invited" participants.

The trainers for the laboratories are national denominational staff members (5) or state staff personnel (3), or past three-year alumni (7), or outside consultant-trainers (2). The author has served as one of the training-consultants for all five years of the Academy. All trainers have had a minimum of experience in three week-long laboratories as participants and a week of "training of trainers" experience. For the past two years the faculty has engaged in five days of trainer-development before the Academy started.

Over the past two three-year cycles of the Academy design, there has been a reduction of participants of approximately 40% between the first and second years, and another 10% between the second and third years.

The delegates can be categorized into two broad classes: (1) those chosen by state offices and subsidized to attend because of their potential leadership to the various state-level church organizations, and (2) those delegates who simply decide on their own to attend. This latter group was predominately youth this year (18-25 yr.), all of whom were attending Section I.

The delegates composing the first-year T-groups used in this study can be classified in the following categories:

1. Age: Mean: 39 years
   Range: 19-68 years
2. Sex: Males: 12
   Females: 10
3. Chosen by state officers to attend: 17
4. Choose to attend for personal reasons: 5
5. Income: Mean: $6,860 annually

6. Working Status:
   Full-time - 14
   Part-time - 2
   Homemaker - 1
   Student - 4

7. Education:
   Graduate Study - 17*
   College Study - 5
   High School - 3
   *Participants are counted only in the most advanced level of education.

8. Ordination Status:
   Clergy - 10
   Laity - 12

The 1970 Section I was composed of forty persons, thirty-two participants and eight trainers. The laboratory was divided into four T-groups, two of which were the sample for this investigation.

The stated purpose and desired outcomes for Section I as stated in the 1970 Lab Kit were:

"Purpose: To increase our awareness of, and skill in using the forces working in groups.

Desired Outcomes:

- to identify and practice the skills of responsible group membership (task and maintenance roles).
- to utilize some group process theories.
- to participate in the process by which a group establishes and enforces its norms.
- to discover the role of commonly accepted and commonly understood goals in the work life of groups, and ways in which groups go about selecting and working toward such goals.

- to practice the expression of feelings and recognize their influence on the life of the group.
- to receive and give emotional and cognitive responses to specific behavior.
- to identify and plan specific new ways of behaving.
- to learn how to learn by the laboratory learning process."

The implementation of the "Purpose" and "Desired Outcomes" was executed through the employment of methods which initiate and maintain the laboratory learning process. The methods used in Section I were: T-group, theory presentation, services of worship, skill practice, and free time. Below is the schedule for the week that displays the distribution of the various methods:

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 Worship	(total	Academy)				9:00
10:00	T-group	T-group	T-group	T-group	T-group	T-group
12:30 Lunch						
	Free	Time	1:00 T-group Theory	Free	Time	1:00 Worship
4:00 Orientation & Worship	4:00 T-group	4:00 T-group	3:00 Free Time	4:00 T-group	4:00 T-group	
	5:30 Theory	5:30 Theory		5:30 Theory	5:30 Theory	
6:00 Supper						
7:00 Section Orientation 9:30	T-group	T-group		T-group	T-group	

In order that skill practice (i.e. observation, listening, expressing feelings, decision-making) be appropriate to the needs of a particular T-group, this method was employed during T-group sessions at the discretion of the trainer team.

Special theory presentations were made to the total Section once each day. The methodological and educational purpose for theory presentation was to provide participants with cognitive models or descriptions of the interpersonal processes

which were occuring in the T-group sessions in order that the participants be able to diagnose and understand more clearly the experiences. The content of each theory presentation was chosen on the basis of the common experience which had emerged in the four T-groups. Theory presentation follows experience in the laboratory learning process. The titles of the five theory presentations were:

Sunday - Laboratory Learning Process

Monday - Group Needs and Member Functions

Tuesday - Feedback (Appendix I)

Wednesday - Functional Leadership

Thursday - Gibbs' Theory of Group Development

The services of worship were attended by the participants in all four Sections of the Academy. In theological, Biblical, and contemporary words the services attempted to reflect the "usual" experience of a first-time T-group member. Worship focused each day on the religious dimension of the participants' experiences of alienation, loneliness, confusion, support, trust, affirmation, togetherness, renewal, and reconciliation as they evolved during the week. Personal experiences generated during worship relative to the interpersonal relationships between group members were dealt with during T-group sessions.

The grouping and trainer assignment was accomplished on Saturday evening during the Section Orientation. Trainer-teams had previously been established by the staff. The participants divided themselves into four groups after about forty-five minutes of get-acquainted exercises.

Two of the groups formed by the process outlined above were subjects for this research, one a group of twelve, the other one of ten persons.

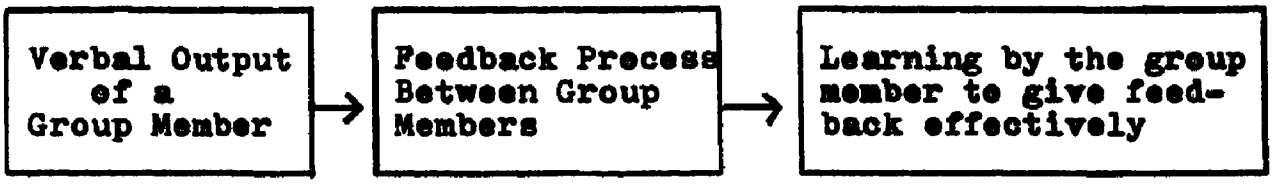
Type of Study

This investigation is an exploratory field study in which the purpose is to discover the relationships that exist between verbal participation, the feedback process, and the learning within the laboratory learning process as it occurs in a T-group.

Kerlinger (24) identified two types of field studies: (1) exploratory and (2) hypothesis-testing. The exploratory field study "seeks what is rather than predicts relations to be found." (p. 388) He notes that exploratory studies have three purposes:

> "to discover significant variables in the field situation, to discover relations among variables, and to lay a ground-work for later, more systematic and rigorous testing of hypotheses." (p. 388)

This study is concerned with accomplishing the goal of the two latter purposes. Prior research has identified verbal participation and feedback as two variables related to learning in the laboratory learning process. However, the relationship between them is not clear, nor is the relation clearly understood between verbal participation and learning. The relationship of the three variables in this study are:



The three variables may be labled as:

Independent variable - Verbal Output

Intervening variable - Feedback Process

Dependent variable - Learning

There is no attempt to manipulate the variables by the investigator. The variables are observed to note the relations that exist between them. In that sense, this investigation approximates a case study. Shepherd (37) describes a field study as "basically a description of a small group in its natural setting. The researcher gains access to the group and observes it and/or administers tests to its members." (p. 111)

Kerlinger (24) notes that "field studies are strong in realism, significance, strength of variables, theory orientation, and heuristic quality." (p. 389) The present study is realistic, having occured in an on-going training laboratory and may have significance for future design and implementation of training. The potency of the variables is supported by the abundance of participation and feedback during twenty-four hours of T-group activity. It is anticipated that a number of hypotheses will emerge from the findings and analyses.

Limitations of the Study

The field study has several weaknesses. Kerlinger (24) identifies the ex post facto character of the field study as

its most serious weakness. "The statements of causal relations are much weaker than they are in experimental research." (p. 390) There is no way to overcome this weakness in this investigation.

The problem of the choice of variables in a field study is also a weakness. Characteristically, the alternatives are many. In the present study this aspect of field studies is certainly the case. Instead of the feedback process being the intervening variable, trainer intervention, theory presentations, or group composition may have been chosen as the intervening variable in the learning process. And further, instead of "the giving of effective feedback" as the learning variable, change in self-concept, openness, spontaneity, use of theory, identification of "forces" in groups, or enactment of task-maintenance roles might have been chosen. However, on the basis of laboratory learning process theory, the feedback process has been one of the crucial factors in learning. Feedback giving and receiving is also very closely linked to verbal participation, so that in order to examine the relationship between amount of verbal output and learning, the feedback process is a natural link.

The choice of "the ability to give feedback effectively," as the learning variable is the result of the researcher's attempt to isolate a behavioral characteristic of T-group members which can be observed. Several experienced researchers (Alvin Zander, Ronald Lippitt, and William Cave) have advised the author to seek a behavioral learning variable instead of one measured by inference from a paper and pencil test. Grace

and Grace (20) offer evidence relevant to this point. In a study investigating the relationship between verbal and behavioral measures of value they found a high coefficient of reliability on each of the two measures, but little evidence "that others see people as acting in terms of what they report are their major values." (p. 130) Thus each measure seems reliable, but the two were not significantly correlated. Therefore, this study uses a behavioral measure.

Another criticism of field studies is the inability of the experimenter to control all the extraneous influences on the variables he is studying. The author acknowledges that several factors in the Academy or in Section I could act differentially upon different T-group participants. Factors such as size of the group, personalities of other members, the trainer-team, free-time interaction, services of worship, respective development of different T-groups, and reinforcement schedules could affect individual learners differently. The present investigation assumes that the self-select grouping procedure used to form the T-groups controlled possible differential effects from such factors. Also, the use of participants from two instead of one group as the subjects for this study was done in order that the factors within different groups might be more effectively controlled.

The field study is often negatively affected by the presence of the investigator which is considered another weakness. Mills (30) notes that the observer-group relationship stimulates problems for research because the observer is

challenging group boundaries by his presence. The effect of this challenge can be spurious data because of group reaction to the observer's presence. He suggests the solution is for the observer:

> "to help reconstitute the group boundaries so that they may be both maintained and transcended: maintained through mutual respect for the legitimate and distinct purposes, first of group development, and second of scientific observation; and transcended through mutual appreciation of the essential kinship between observer and the observed." (p. 29)

The participants in Section I were aware that research was being conducted. It was described in an announcement as "research on the way learning occurs in training." The author was designated "research coordinator". The trainers in Section I knew that the tapes recorded during the T-group sessions would be coded, but they were not informed of the variables in the study. The T-groups were advised in a beginning-session that the tapes were for the group's use in the training event. Later in the week each group was asked for permission to use the tapes in the research.

No one in the Academy except the author knew the variables of the investigation; therefore, it seems a reasonable assumption to conclude that the interaction recorded on the tapes is not biased by the presence of an observer. The author did not work in Section I during the Academy and was never asked any questions about the research by any Section I participants.

Definitions

To clarify the meaning of the research, it is necessary to define the terms, concepts, and constructs for operational purposes. The following descriptions will assist the reader to understand the exact meanings of these terms used in this investigation.

1. Training Laboratory: In this study, training laboratory refers to Section I of the annual laboratory sponsored by the Southern Academy of Teaching. Section I is a basic, first-time laboratory which met for eight days utilizing T-groups, theory sessions, and skill practice sessions in its design. The laboratory was a "stranger" lab attended by persons designated by church officials in fourteen states in southeastern United States. The laboratory included about twenty-eight hours of a T-group time, some of which was used at the trainers' descretion for skill practice, thirty minutes each day for total lab theory presentation, and thirty minutes of worship each day. The desired outcomes of the laboratory were personal development of skills and understanding in the group processes of trust-building, feedback, consensus-building, leadership, task and maintenance, and Gibb's theory of group development.

2. T-group: The T-group is a relatively unstructured group which stresses the high involvement and participation of its members in the verbal interaction process. The basic data for learning comes from the interpersonal experiences of the learners, and from themselves as individuals as they

interact in an effort to develop their group. The diagnosis and analysis of the behavior of group members utilizes the feedback process. The purpose of the T-group is designed to help learners "learn how to learn" according to the laboratory learning process, to help group members develop realistic self-images of the ways they functioned in a group, and to help participants learn how to develop a functional and productive group. The subjects in this investigation belonged to T-groups (training groups) which varied in size from 10-12 (including the two trainers). The T-groups met three times daily approximately six hours each day. Each group had two trainers.

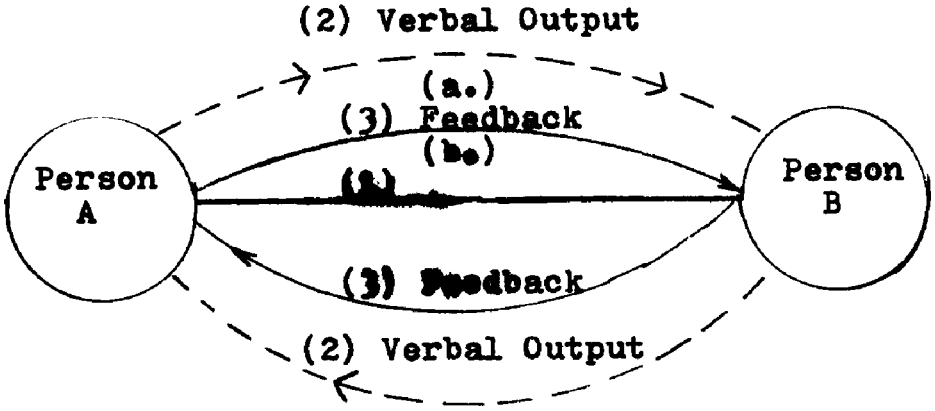
3. Trainers: A trainer in the Southern Acade· · was an individual who had at least twenty days of experience as a T-group participant and eight days of experience in a "Training of Trainers" Laboratory. At least one member of each of the pairs of trainers had more than twice as much experience as stated. In addition, the more-experienced of the two trainers of each group had served as trainers in over forty days of laboratory training.

The trainers' educational role was to establish the utilization of the laboratory learning process, to observe and reflect group process, and to model effective interaction skills in the establishment of interpersonal relationships. Trainers rotated the responsibility for theory presentation.

In order to understand the relationship of the concepts of verbal output, feedback process, and feedback used in this

study, Figure 1. is presented below. The definitions of the concepts follows the explanation of the relationship. The diagram represents two persons but may refer to a person and a group, or a group and another group.

Figure 1. The Relationship of Verbal Output, the Feedback Process, and Feedback.



Legend:
(1) Interaction without verbal exchange
(2) Verbal Output
(3) Feedback
(a.) Amount of Verbal Output which is not feedback
(b.) Verbal Output which is also feedback

Figure 1. represents a relationship between two persons in which there is both a verbal exchange (verbal output by both persons) and a feedback process (feedback given by both persons). If there were no verbal output in the relationship by either party, the relationship would be illustrated by line (1), which depicts an interaction without verbal output between the two persons. Line (2) which extends from Person A to Person B and Person B to Person A illustrates the total amount of verbalized interaction between the two persons. The amount of verbal output by a person will determine the area

of (a.) ♦ (b.), where (a.) represents verbal output which is not feedback and (b.) represents verbal output which is feedback. The total verbal output and feedback verbal output of Person A to Person B is above the line (1). The total verbal output and feedback verbal output of Person B to Person A is below the line (1). In the diagram, both Person A and Person B have given feedback to each other. When this occurs, the feedback process is operating. The feedback process occurs within the total verbal exchange.

The verbal interaction illustrated in the diagram represents an even verbal output and feedback exchange between the two persons,(a.) and (b.) are equal above and below line (1). However, many other verbal interaction patterns could be illustrated. If the verbal output of a person were high and his feedback low, then line (2) would be a much higher one than line (3). If one person in a relationship gave feedback to another, Person A to Person B, and Person B does not give feedback to Person A, then there would be no line (3) below line (1). If the verbal output between the two persons was all feedback, then lines (2) and (3) would coincide, (a.) equals (b.).

Below are the operational definitions of verbal output, feedback, and the feedback process used in this investigation.

4. Verbal Output: In this investigation, verbal output represented the total number of times that a person verbally participated in the T-group. Feedback was a type of verbal output. Therefore, the verbal output of a participant included

his feedback output. If a person gave two or more distinct messages in a long speech, each message was scored as a separate unit of verbal output.

5. Feedback: In this study, feedback is defined as a T-group participant's overt verbal reaction to the behavior of other individuals in the group or to the actions of the group as a whole. Feedback content was scored in two mutually exclusive categories cognitive or emotional. Cognitive feedback expressed a person's intellectual reaction that acknowledged his opinion or cognitive assessment of the stimulus behavior, or event. Emotional feedback expressed a participant's emotional reaction and identified his feeling in response to the stimulus behavior or event. Cognitive and emotional feedback was either positive or negative.

The feedback of each person in the T-group was classified as either feedback output which were the reactions he had given to others or as feedback input which were the responses he had received from others.

In order to be most helpful and effective, feedback needed to satisfy three criteria. It needed to be timely, specific, and non-judgmental.

6. Feedback Process: The feedback process, as conceptualized in this study, was assumed to be cyclical. As the process of verbal and behavioral interaction occurs in a T-group each person's communication became a stimulus which elicited responses from other members of the group. Feedback was the active overt verbal response of a group member to another group member's stimulus behavior which acknowledged the

feedback-giver's emotional and/or cognitive reaction. Feedback became a new stimulus and subsequently elicited reaction and feedback. It was assumed in this definition of the feedback process that verbal participation elicited feedback.

7. Learning: In this study learning was defined as the increase in the ability of a participant to give effective feedback as measured by the criteria for effective feedback. As defined above, two aspects of feedback were relevant to each participant: (1) feedback output, and (2) feedback input. The feedback process defines feedback output as a function of feedback input in the cycle, e.g. the feedback one gives elicits more feedback from others. In the laboratory learning process the amount of learning a person experiences is relative to the amount and kind of feedback he receives. Therefore, learning was precisely defined as a positive increase in the number of feedback criteria a person's last five feedback outputs attained over the first five outputs as assessed early and then later in the training laboratory. Both cognitive and emotional feedback outputs were observed. Changes in quality (positive or negative) were also noted.

8. Learning Score: In this study a participant had two learning scores, one for cognitive feedback output and one for emotional feedback output. The learning scores represented the mean number of criteria satisfied in two sets of five feedback output attempts. The first five attempts from the beginning of the lab and the last five from the last T-group session were assessed.

Variables

The independent variable being measured in this investigation is verbal output. Verbal output represents the total number of times a person verbally participated in his T-group. It is measured by observers listening to tapes.

The dependent variable in this investigation is the learning experienced by a T-group participant. Learning is defined behaviorally as the increase in the number of feedback criteria satisfied by a T-group participant's last five feedback outputs when compared to his first five outputs. Learning is measured by observers listening to tapes.

The intervening variable in this study is the feedback process as defined on page 68. The process is measured by observing the verbal interaction between the members of a T-group as they exchange feedback. Feedback in the feedback process is defined as a T-group participant's verbal output that reveals his reaction to what another person and/or group has said or done. Feedback may be emotional or cognitive, negative or positive, may satisfy none to all of the criteria for effective feedback: timely, specific, and/or non-judgmental, and may be directed to a person or to the group. The following variables of the feedback process are measured:

1. Feedback Output: the total number of times that a person gives verbal feedback in a T-group.
2. Feedback Input: the total number of times that a person and/or group receives verbal feedback in a T-group.

3. Feedback content variables:

   (1) Emotional feedback is a person's verbal statement which identifies the emotional or feeling reaction one has to the recipient's behavior.

   (2) Cognitive feedback is a person's verbal statement which identifies the cognitive or opinion reaction one has to the recipient's behavior.

4. Feedback quality variables:

   (1) Positive Feedback is a reaction to another person or group's behavior which is an affirmative, supportive, liking, or favorable response.

   (2) Negative Feedback is a reaction to another person or group's behavior which is an unfavorable, disliking, non-supportive, unaffirmative response.

5. Feedback criteria variables: In order for feedback to be helpful to the recipient, it must meet certain criteria. In this study the following criteria are used to assess the effectiveness of feedback:

   (1) Timely: Timely feedback must come within fifteen minutes of the stimulus behavior or event and must be spontaneously given.

   (2) Specific: Feedback which is specific will clearly identify the behavior and/or event upon which it is focused. It will include a behavioral description of what the recipient did.

   (3) Non-judgmental: Non-judgmental feedback will be reactions which are presented as objectively as possible, without moralistic judgments or loaded

meanings attached to it. This aspect of feedback is observed in the tone of voice of the feedback-giver.

Objectives and Questions

It will be recalled by the reader that there are two objectives for this investigation. The research questions will be listed under the objective to which they refer.

Objective 1: To discover whether or not there is a relationship between learning, verbal participation and feedback in T-groups.

Questions:

1. Does the amount of verbal output by the participants in a T-group relate to the amount of learning by the participants?
2. Does a person who verbally participates more in a T-group learn to give feedback more effectively in the T-group than persons who participate less frequently verbally?
3. Is there a relationship between a participant's learning and the kind (cognitive or emotional) of feedback he receives?
4. Is there a relationship between a participant's learning and the kind (cognitive or emotional) of feedback he gives in a T-group?
5. Is there a relationship between a participant's learning and the positive or negative quality of the feedback he receives?

6. Does the amount of feedback output by a group member relate to his learning?

Objective 2.: To more clearly identify and understand the feedback process in the laboratory learning process in T-groups.

Questions:

1. Is there a relationship between the number of times a person receives feedback and the number of times he verbally participates in the T-group?
2. Is there a correlation between the number of times a person gives feedback and the number of times he participates verbally in the T-group?
3. Does the amount of feedback input and the criteria it satisfies relate to the feedback output and the criteria it satisfies of a participant in a T-group?
4. Is there a correlation between the positive or negative quality of a participant's feedback input and the quality of his feedback output?
5. Is there a relationship between the feedback input of a participant and the amount of feedback output he makes to the group instead of to specific individuals?

General Design of Procedures

The general design of the procedures for this research followed the preceding steps:

1. Development and the Identification of the Instruments: (1) Feedback Process Analysis and (2) the Group Perception Inventory used to test the similarity between the two groups included in the sample.
2. A pilot study to test and refine the instruments.
3. The coordination and training of the training staff in Section I of the Southern Academy to assist in the research.
4. Sampling procedure: the organization of the T-groups at the training laboratory.
5. Sampling procedure: the selection of the two T-groups that would be included in the sample by the training staff and the identification of voices on the tapes.
6. Coding of the tapes using the Feedback Process Analysis.
7. Analysis of the data.

Each of these steps is described in detail below.

1. Instruments

There were two instruments employed in this investigation: (1) A Feedback Process Analysis system and worksheet, and (2) the Group Perception Inventory Instrument. The feedback process analysis worksheet was used to code the Feedback Process Analysis. The Group Perception Inventory was used to assess the similarity of the two T-groups used in the sample.

(1) Feedback Process Analysis

The Feedback Process Analysis (hereafter it will be designated: FPA) was developed by the author. The FPA is a method

of observing feedback within a group which utilizes a set of categories that are based on several dimensions of effective helpful feedback relative to the laboratory learning process.

The Feedback Process Analysis (see Figure 2.) involves determining whether verbal output was feedback output; whether it was I. Emotional or II. Cognitive; whether it satisfied none, one, two, or three of the criteria for feedback: a. Timely, b. Specific, and/or c. Non-judgmental; whether it was (+) positive or (-) negative; and to whom it was addressed.

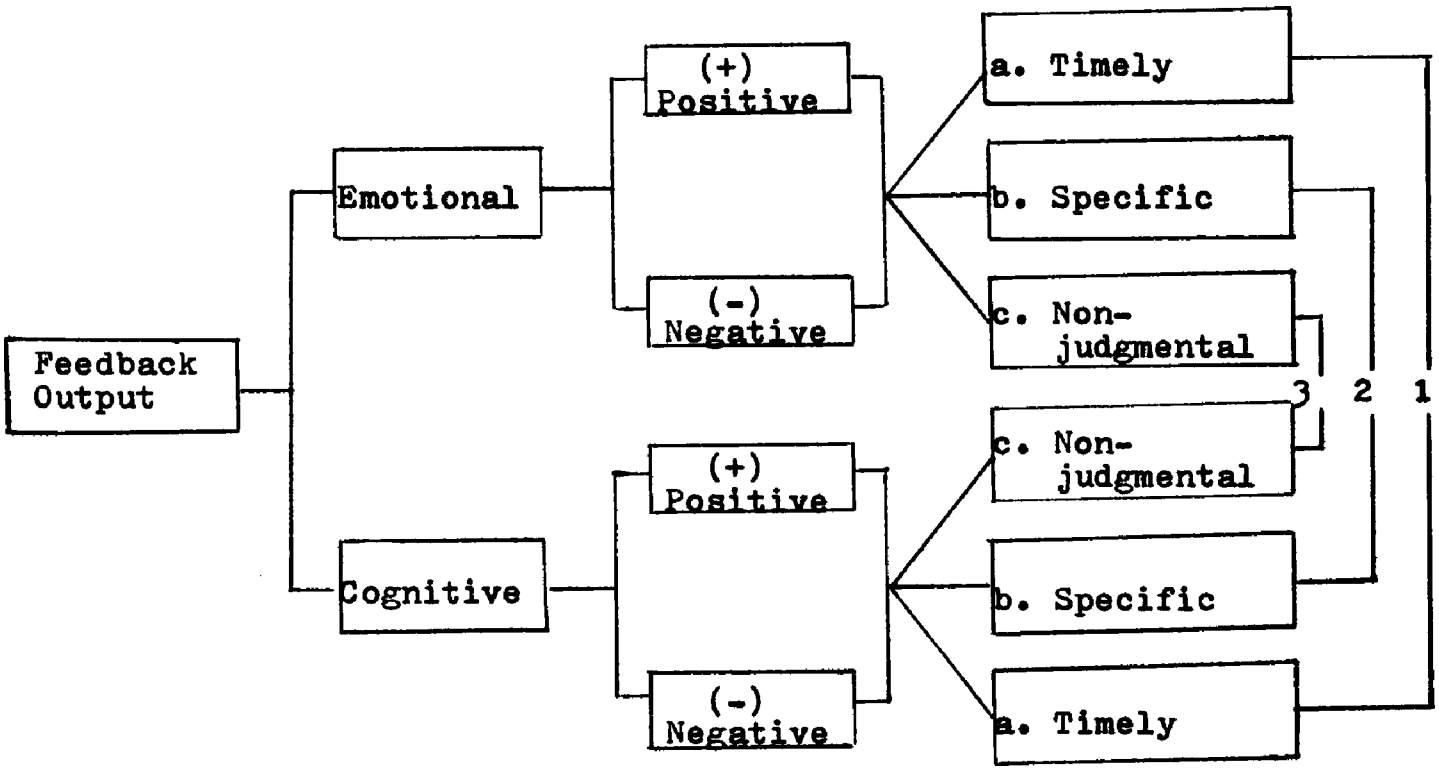
It will be recalled that the difference between emotional and cognitive feedback is in terms of their respective verbal content-orientation. The verbal content of cognitive feedback is an intellectual opinion or idea expressed by a person as a reaction to what another person has done or said. The verbal content of emotional feedback is an acknowledged emotional reaction to what another person has said or done. The difference between the two types of feedback is not in intrapersonal processes by which they are produced by a person, but rather in the verbal content of the feedback response itself. Feedback Process Analysis involves designating the content of a feedback output as either emotional or cognitive.

The three criteria of feedback (Figure 2.) are representative of three problems persons have in giving effective feedback.

The first problem of feedback which effective feedback solves is that of being near to the event which stimulated it. Too often feedback is delayed hours or even days. Too

Figure 2. Feedback Process Analysis

Observation Categories



Legend: Problems in Giving Effective Feedback

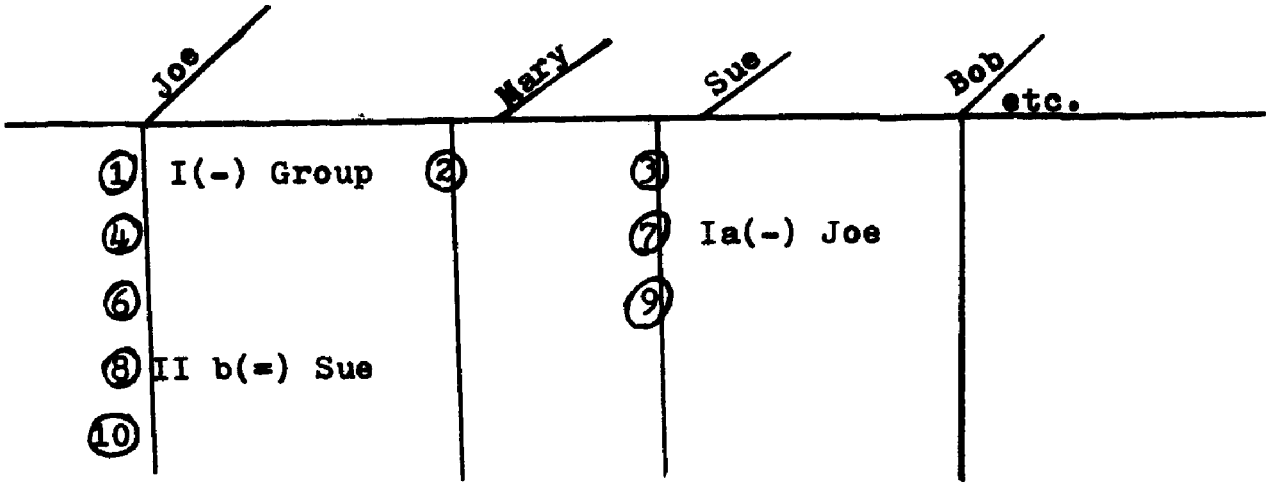
1. Spontaneity, closeness to the behavior or event.
2. Clarity, use of behavioral data.
3. Non-distortion, objective voice tone.

often feedback is not freely offered but must be asked for. The satisfaction of the third criteria will be a demonstration of spontaneity in response to behavioral events. Spontaneity is defined as feedback not specifically solicited and given within fifteen minutes of its referent. A second problem of feedback is that it can be very general and indirect. The second criteria of effective feedback requires that feedback be specific in its referent behavior, and review, if necessary, the circumstances of the act or event to which it refers. Third, effective feedback is non-judgmental, objective and undistorted. It is as informative as possible without being judgmental or evaluative. The feedback-giver who satisfies this criteria overcomes the tendency to load his reactions to others with value judgments usually expressed in his tone of voice.

The categories in the FPA of emotional or cognitive and positive or negative are mutually exclusive. The criteria categories are not exclusive in that a particular feedback output may satisfy none or all three criteria.

The observer used the FPA worksheet to record various characteristics of verbal participation and the feedback process. The worksheet is a page of lines, each line representing a participant in the T-group. Figure 3 is an example.

Figure 3. The Feedback Process Analysis Worksheet



The notations on each participant's line reflect the observer's assessment of the verbal interaction:

Verbal Output is represented by a circle with a number in it, e.g. ④. The number sequence allows the investigator to trace the flow of interaction if desired.

A feedback output unit was a verbal feedback statement directed to someone or to the group. If in an extended expression a person gave feedback to several persons, each feedback output was scored as a separate unit of output and input.

The <u>feedback output</u> on the worksheet above is interpreted in the following ways:

I(-) Group: Emotional feedback, negative to group, e.g. Joe: "You all bug me."

II b(+) Sue: Cognitive feedback, specific, positive to Sue, e.g. Joe: "Sue, when you said: 'we need to talk about our children', that seemed like a good idea to me."

Other examples of the way feedback output would be designated are:

I b(+) Sue: Emotional feedback, specific, and positive, to Sue, e.g. "When we were able to get in the same group last night, Sue, I was sure happy."

I a(+) Sue: Emotional feedback, timely, and positive, to Sue, e.g. "Sue, I'm happy that we are in the same group."

II b(-) Sue: Cognitive feedback, specific, and negative, to Sue, e.g. "Last night, when the groups were being formed, I disagreed with your taking control of the group, Sue."

II a(-) Group: Cognitive feedback, timely, negative, to group, e.g. "If you all would shut up, we could hear each other better."

II ab(-) Sue: Cognitive feedback, timely, specific, to Sue, e.g. "Sue, you're being so quiet that it's not helpful to our relationship."

I ab(+) Sue: Emotional feedback, timely, specific, positive, to Sue, e.g. "I am comfortable now that you are talking to me, Sue."

The criteria of non-judgmental is reflected in the tonal quality of the voice and not possible to illustrate with only written words.

<u>Feedback Input</u> on the worksheet is illustrated in that Joe received an Emotional (I), timely (a), and negative (-) feedback response from Sue.

The data which was tabulated from the FPA is: verbal output, feedback input (kind, criteria, and quality) and feedback output (kind, criteria, and quality) and recipient.

The worksheet tabulated nominal data. The various categories of the FPA classified observed behavior into unambiguous categories which satisfied the measurement postulate for nominal data. (Kerlinger (24), p. 420)

Kerlinger (24) states that "with nominal measurement the counting of numbers of cases in each category and sub-category is, of course, permissible. Frequency statistics like X^2, percentages, and certain coefficients of correlation (contingency coefficients) can be used." (p. 425)

There were several potential problems in using the method of behavioral observation in the FPA. One problem was that the observer must make inferences from his observations. In this research study, this aspect of observation was particularly problematic in assessing c. Non-judgmental and whether the feedback was positive or negative, emotional or cognitive. The author, who worked with the coders, has been involved in over 40 training laboratory events in which practice in this kind of observation skill had been developed. It was hoped his training reduced the amount of inference. It was also discovered in the pilot project that listening to tapes increased the problems of identifying who was talking, but it assisted the coder in terms of eliminating the visual stimuli in rapid interaction, thus allowing him to concentrate on the verbal interaction.

Another problem with the method of observation was that an observer can affect the objects of observation simply by being a part of the observation situation. In this investigation the observer was separated from the situation (listening to tapes) so this problem was coped with.

The validity of the FPA is not clearly established. Kerlinger (24) notes: "The important clue to the study of the validity of behavioral observation measures would seem to be construct validity." (p. 507) The variables being measured need to be imbedded in a theoretical framework which defines their relationships. On that basis, it can be assumed that the FPA has validity.

The coding of the data with the FPA was obtained through a process of consensus judgment. The categories were clearly understood. The tape was listened to as often as necessary for all the coders to arrive at the same judgment concerning a particular verbal output.

(2) Group Perception Inventory

The Group Perception Inventory (hereafter it will be designated: GPI) was used in this investigation to assess the similarity of the two T-groups used in the sample. The GPI was developed by the Human Development Institute in 1959 (see Appendix II) and recommended to the author by Allen Menlo. It was assumed that the two T-groups used in the sample had comparable group climates. The GPI provided data which could accurately determine the validity of the assumption. The characteristics (see below) of group climate measured by the

GPI are related to verbal output in that a person who rated his T-group low on all four of the sets would not be expected to freely participate.

The GPI generated data which reflected the perceptions of individual group members regarding how the individual "thinks the other members of the group react to him as a person." (instructions of GPI). There were sixteen questions on the instrument. The answers of a group member were categorized into four sets, each of which measures one of the following dimensions of group life:

- Genuineness: the degree to which the group "levels" with a person.
- Understanding: the degree to which the group understands a person.
- Acceptance: the degree to which a person feels accepted by the other members of the group.
- Valuing: the degree to which the person feels the group needs him as a person.

There were five estimates available in a scale which extend from "Never" to "Always". A score for each dimension was determined and a group average computed.

The GPI was used three times in each of the T-groups (Second, middle, and next-to-last sessions).

The GPI was a "rating scale" observation instrument which utilized a category rating scale. Kerlinger (24) defines a rating scale as: "a psychological measuring instrument that requires the rater or observer to assign the rated object to categories or continua that have numerals assigned to them."

(p. 514) In this study, the group members were observing all the other T-group members as they filled out the GPI.

The data generated by the GPI was nominal. This fact constrained the analysis of the data to statistics identified above in the discussion of the FPA.

The intrinsic defect of the rating scales in the GPI is their proneness to constant or biased error. Kerlinger (24) identifies three sources of constant error as: (1) the error of severity, (2) the error of leniency, and (3) the error of central tendency. (p. 517) All three of these sources can produce invalidity into the data.

There was no attempt to eliminate any of the three sources of constant error in the administration of the GPI in the T-groups investigated in this research. It is the assumption of the author that if any or all of these constant errors were operative in the group members' observation of themselves, the sources of constant errors should randomly be in evidence and thus counter-balance each other.

2. Pilot Studies to test the Instruments

The pilot project for the investigation entailed coding the verbal participation and feedback from tapes recorded during a training laboratory in July, 1970. In the process of the coding, the scoring method was changed in the following ways:

- The number of criteria of feedback was reduced from five to three in order to obtain behaviorally exhaustive

categories. The criteria of original FPA were: timely, specific, behavioral, descriptive, and useful. "Specific" and "behavioral" were combined into one criteria. The criteria of "useful" required an interview with the recipient of the feedback which was not possible in this design. The lable of the criteria "descriptive" was changed to "non-judgmental."

- The verbal participation was noted only on "the one who talked", and the recording of the "person to whom they talked" was discontinued, unless it was feedback.
- The concept of using "lengths of lines" to designate the number of criteria satisfied by feedback was discontinued in favor of designation by the letters a., b., and/or c.
- The kind of feedback given was further differentiated by two more designations: (1) emotional (I) and cognitive (II); (2) positive (+) and negative (-).

The pilot project also caused the modification of the method of listening to and coding the tapes. It was intended that the tapes from each group would be coded by two observers working independently and their observations averaged for the raw data. Due to the difficulty of distinguishing participants' voices, it was determined a more effective method of coding would be to listen to the tapes together and arrive at consensus designations of the data.

During the same training laboratory in July, 1970, in which the author recorded the practice tapes, the "Group Perception Inventory" was administered in order to become

familiar with the instrument. It was decided to use the instrument in the investigation because it could be administered by the trainers of the Section I laboratory with very little training.

In addition to the GPI, it was determined that a comparison of the means of verbal participation, feedback input, and feedback output would also be used to substantiate the similarity of the two T-groups in the sample.

3. The Coordination and Training of the Training Staff in the Laboratory

The eight staff members of the training laboratory were advised of the research project and enlisted as cooperative agents in a pre-lab staff meeting. The staff members were not informed of the variables being observed but that the research would attempt to clarify the laboratory learning process. The "Group Perception Inventory" was presented to the staff, used by it, and discussed. The training staff was advised to use the instrument in the T-groups during the second, middle, and next-to-last T-group sessions. Staff members were also advised that they could use the data from the GPI in the group in any way it may be helpful.

The use of tape recorders was anticipated by all the members of the staff as one method for feedback during the laboratory and as a log of group events. However, the possibility of utilizing the tapes for research raised the issue of group confidence. It was decided by the training staff

that the issue of whether a group's tapes were used in the research would be decided by the group, and that the decision would be postponed until later in the week.

On the last day, Section I delegates were asked to fill out a background inventory in order to have biographical data available. (Appendix III)

During the training laboratory, the author had no contact with the training staff in Section I regarding the research.

Sampling Procedures

4. Organization of the T-groups in the Laboratory

Groups were formed on the first night of the training laboratory, following the process of self-selection. The thirty-two participants and eight trainers grouped themselves into four T-groups.

Kerlinger (24) states that an ideal experiment would be one in which all the variables could be identified and controlled. However, both the identification and control of all of the variables in any social situation is impossible. The principle of randomization helps researchers overcome the problem of control. The principle of randomization is:

> "Since in random procedures, every member of a population has an equal chance of being selected, members with certain distinguishing characteristics - male and female, Republican and Democrat, extrovert and introvert, high and low intelligence, and so on - will, if selected, probably be counterbalanced in the long run by the selection of other members with the opposite quantity or quality of the characteristics." (p. 57)

Kerlinger (24) goes on to declare the rule of random assignment:

> "When a sample of a population has been drawn at random, it is possible to make statements about the characteristics or the relations between characteristics in the population." (p. 60)

It is assumed by the author that T-groups used in the sample for this investigation were representative of the population of laboratory participants, and that, therefore, descriptive generalizations to similar populations and settings from the findings are valid.

Kerlinger advises researchers to use as large a sample as possible in order that the principle of randomization has a chance to work. Large samples tend, other things being equal, to be more accurate because error is lower. (p. 61)

The size of sample used in this study is twenty-two. The reason for the smaller sample was to allow the investigator to examine all the sessions of two T-groups and study both the process and the outcomes of the laboratory learning process.

Statistically the problem of the small sample (under 30) can be handled by using (N-1) in the calculation of s statistics of mean, standard deviation, standard error, t-scores. The reason that (N-1) in the s statistics for small samples increases the accuracy for the statistic is due to the t distribution which for small samples lies under the normal curve but has higher ends or tails than the normal curve. In order to align the statistic from a small sample with the normal

curve, a "degree of freedom" must be subtracted, hence (N-1). The concept of degrees of freedom is explained by Garrett (16):

> "When a statistic is used to estimate a parameter, the number of degrees of freedom (df) available depends upon the restrictions placed upon the observations. One df is lost for each restriction imposed.....Whenever a statistic is used to estimate a parameter, the rule is that the df available equals N minus the number of parameters already estimated from the sample." (p. 194)

Sampling Procedures

5. Selection of the Groups to be used in the Research

There were four T-groups in Section I of the 1970 Academy. The research design for this investigation called for participants from two T-groups. Before the training laboratory began, it was decided that all four groups would tape all sessions. However, one of the four groups discontinued taping at the end of the second day. After the laboratory ended two of the three remaining groups were selected for coding by the training staff of Section I using the criteria of "the amount of perceived interaction in the group during the week." The Section I staff made their recommendation to the author before they were advised of the variables which were going to be coded in the research on laboratory learning process. On the basis of the staff's perceived estimate, they chose the two T-groups which demonstrated a higher amount of verbal interaction than the third group. Including trainers, the total size of the sample is twenty-two, e.g. four trainers and eighteen participants. After that decision, the author explained the purposes of the research and identified the specific variables which would be measured.

Each of the trainer-teams spent an hour or more with the author identifying voices on the tapes.

6. Coding of the Tapes

The author and two coders worked together during the coding process identifying voices and designating feedback with the FPA, using consensus on all notations.

Each of two T-groups was observed and coded. The verbal participation and feedback process in the two groups were categorized into thirty-nine variables (one independent, twenty-eight intervening, and ten dependent). The variables are described in detail in the next chapter.

7. Analysis of the Data

The data from the two groups were analyzed by one-way analysis of variance designed to measure the variance differences within and between the groups on variable means. The .05 level of significance was established as legitimate evidence of difference between means. Fisher "t" tests were computed on the difference between the means on each variable paired with every other variable. This analysis also produced the sum, mean, and standard deviation for each variable. The PSCD computer program was used.*

The PSCD program was used to analyze the data grouped in terms of verbal output. Two new groups were composed:

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*PSCD Analysis of Variance - Single Classification, University of Michigan Computing Center, Dr. C. Johnson consultant.

Group 1 = Above the mean in Verbal Output, and Group 2 = Below the mean in Verbal Output.

In order to determine the relationships among the variables, the PSCJ computer program was utilized.** This analysis yielded the sum, mean, standard deviation, t-test, and product moment coefficient of correlation. The data from the two groups were analyzed separately and as one total sample. Intercorrelation analysis matrixs were developed from the correlation co-efficients.

The similarity between the groups was analyzed in three ways:

(1) The development of a frequency table based on the sex of each member of each group. The chi-square statistic was computed.

(2) The scores from the Group Perception Inventory provided three group means for each of the four dimensions of the instrument. The group means and standard deviation was computed for each group on each dimension. The t-ratio was computed for the difference between the means using the formula for the s statistic because the sample was less than thirty.

(3) The comparison of the differences in group means on certain variables computed in the PSCD.

In order to determine the significance of the difference between the means of the number of criteria satisfied on the

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**PSCJ Intercorrelation Program for Data with Missing Information, University of Michigan Computing Center, Dr. C. Johnson consultant.

first and last five feedback outputs of both emotional and cognitive types, a t-ratio was computed for the difference between two correlated means. The "difference method" was used. (Garrett (16), p. 226)

CHAPTER V

ANALYSIS OF THE RESULTS

Introduction

This chapter reports the analysis data of the research in this study on the relationship of verbal output, the feedback process, and learning in a T-group. The sample for the study was composed of the members of two T-groups which were part of a training laboratory focused on personal development and group process.

The findings have been organized into three sections: (1) a comparison of the two groups composing the sample, (2) learning and related variables, and (3) a comparison of two groups composed on the basis of either high (above the mean) or low (below the mean) verbal output.

The total sample was composed of ten females and twelve males.

The data were analyzed by PSCD to determine the significance of one-way variance which occurred between the groups on all of the variables. The PSCD also yields paired comparisons on the means of the variables and the t-ratio. PSCJ was used to analyze the intercorrelation among the variables of the total sample. The PSCJ also provided the sum, mean, standard deviations, and the difference between means of the variables. The chi-square statistic was used to determine the significance of the distribution of the different sexes in the two T-groups.

The t-ratio for the difference between correlated means was computed to test the significance of the change between the number of criteria satisfied on the first and last five emotional and cognitive feedback outputs.

I. Comparison of the Two Groups Composing the Sample

In order to establish the similarity of the members of the two T-groups of which the total sample is composed, the two groups were compared on sex and age, verbal output, feedback input and output, the criteria of the feedback, quality of the feedback, criteria satisfied by first and last five feedback outputs, learning (emotional and cognitive), and the Group Perception Inventory instrument.

A. Sex and Age

Tables 1, 2, and 3 display the data on the sex and age of the members of the two T-groups. Table 1 identifies the number of members of each sex in each group. Tables 2 and 3 present the data on variance and the difference of the means between the groups in terms of the ages of the participants.

TABLE 1

GROUPS WITH REGARD TO SEX OF PARTICIPANTS

Sex	Group 1	Group 2	Total
Female	5	5	10
Male	7	5	12
	12	10	22

N = 22 df = 2 x^2 = .13 (not significant)

TABLE 2

PSCD FOR AGE

Source of Variance	df	SS	MS	F
Between Groups	1	79.46	79.46	0.42 (N.S.)
Within Groups	20	3761.82	188.09	
Total	21	3841.27		

TABLE 3

GROUP COMPARISON ON AGE

Group	N	Mean	SD	t-ratio
Group 1	12	40.92	14.98	0.65 (N.S.)
Group 2	10	37.10	12.12	

The distribution of males and females between the two groups was not significant (Table 1).

There is no significant variance or difference between the means of the groups when compared on age (Tables 2 and 3).

B. Verbal Output

The two groups were compared on the Verbal Output variable. The results are in Tables 4 and 5.

TABLE 4

PSCD FOR VERBAL OUTPUT

Source of Variance	df	SS	MS	F
Between Groups	1	41538.93	41538.93	3.07 (N.S.)
Within Groups	20	270733.07	13536.65	
Total	21	312272.00		

TABLE 5

GROUP COMPARISON ON VERBAL OUTPUT

Group	N	Mean	SD	t-ratio
Group 1	12	315.33	112.59	-1.75 (N.S.)
Group 2	10	402.60	120.78	

Table 4 presents the variance of the two groups on verbal output which is not significant. The t-ratio for the groups when compared on Verbal Output is also not significant (Table 5).

C. Feedback Input

The two groups were analyzed on total feedback input to individuals (Tables 6 and 7) and on emotional and cognitive feedback input. Tables 8 and 9 depict the data for cognitive feedback input. The findings are reported on emotional feedback input without tables.

TABLE 6

PSCD FOR FEEDBACK INPUT

Source of Variance		df	SS	MS	F
Between Groups		1	1176.00	1176.00	2.53 (N.S.)
Within Groups		20	9289.32	464.47	
	Total	21	10465.32		

TABLE 7

GROUP COMPARISON ON FEEDBACK INPUT

Group	N	Mean	SD	t-ratio
Group 1	12	53.92	21.33	-1.59 (N.S.)
Group 2	10	68.60	21.81	

TABLE 8

PSCD FOR COGNITIVE FEEDBACK INPUT

Source of Variance		df	SS	MS	F
Between Groups		1	1464.07	1464.07	5.99*
Within Groups		20	4888.52	244.43	
	Total	21	6352.55		

*$p < .05$

TABLE 9

GROUP COMPARISON ON COGNITIVE FEEDBACK INPUT

Group	N	Mean	SD	t-ratio
Group 1	12	35.42	14.19	-2.45*
Group 2	10	51.80	17.24	

*p < .05 (two-tailed test)

When the groups were analyzed for variance on Feedback Input (total) there was no significant difference in the F-ratio or t-ratio (Table 6 and Table 7).

Within the feedback input process there was no significant difference between the groups in the category of Emotional-feedback Input.

However, the two groups do differ significantly on Cognitive-feedback input. Table 8 depicts the variance between the groups, with an F-ratio of 5.99 which is significant at the .05 level. The t-ratio (Table 9) is also significant at the .05 level.

D. Feedback Criteria

It was possible for a feedback input to satisfy none to all three feedback criteria: timely, specific, and non-judgmental. The groups were compared on these variables on both emotional and cognitive feedback input. There were no significant differences on the criteria of timely and specific in emotional feedback input or on the criteria of non-judgmental in cognitive feedback input. Tables 10, 11, 12, and 13 depict

the differences between the groups on timeliness and specificity of cognitive feedback input. Tables 14 and 15 describe the difference between the groups on the criteria of non-judgmental on emotional feedback.

TABLE 10

PSCD FOR COGNITIVE INPUT CRITERIA OF TIMELY FEEDBACK

Source of Variance		df	SS	MS	F
Between Groups		1	468.35	468.35	7.85*
Within Groups		20	1193.07	59.65	
	Total	21	1161.45		

*p < .05

TABLE 11

GROUP COMPARISON ON COGNITIVE INPUT CRITERIA OF TIMELY FEEDBACK

Group	N	Mean	SD	t-ratio
Group 1	12	13.33	6.97	-2.80**
Group 2	10	22.60	8.55	

**p < .02 (two tailed test)

TABLE 12

PSCD FOR COGNITIVE INPUT CRITERIA OF SPECIFIC FEEDBACK

Source of Variance		df	SS	MS	F
Between Groups		1	986.74	986.74	7.11*
Within Groups		20	2773.85	138.69	
	Total	21	3760.59		

*p < .05

TABLE 13

GROUP COMPARISON ON COGNITIVE INPUT CRITERIA OF SPECIFIC FEEDBACK

Group	N	Mean	SD	t-ratio
Group 1	12	21.75	9.39	-2.67**
Group 2	10	35.20	14.16	

**p < .02 (two tailed test)

TABLE 14

PSCD FOR EMOTIONAL INPUT CRITERIA OF NON-JUDGMENTAL FEEDBACK

Source of Variance	df	SS	MS	F
Between Groups	1	67.06	67.06	5.96*
Within Groups	19	213.89	11.26	
Total	20	280.95		

*p < .05

TABLE 15

GROUP COMPARISON ON EMOTIONAL INPUT CRITERIA OF NON-JUDGMENTAL FEEDBACK

Group	N	Mean	SD	t-ratio
Group 1	12	6.50	4.15	2.44*
Group 2	9	2.89	1.76	

*p < .05 (two-tailed test)

The two groups differ significantly on two sub-variables of cognitive feedback input process; namely (1) timely (Tables 10 and 11) and (2) specific (Tables 12 and 13). Within the emotional feedback input process the groups differ on the criteria of non-judgmental (Tables 14 and 15) feedback.

E. Quality

Quality refers to whether feedback was negative or positive. There was no difference between the two T-groups on the positive or negative quality of emotional feedback nor on the positive quality of cognitive feedback input. However, when compared on negative quality of feedback, the cognitive feedback input differed significantly between the groups (Tables 16 and 17).

TABLE 16

PSCD FOR COGNITIVE FEEDBACK INPUT QUALITY: NEGATIVE

Source of Variance	df	SS	MS	F
Between Groups	1	986.14	986.14	5.08*
Within Groups	20	3881.85	194.09	
Total	21	4868.59		

*$p < .05$

TABLE 17

GROUP COMPARISON ON COGNITIVE FEEDBACK INPUT QUALITY: NEGATIVE

Group	N	Mean	SD	t-ratio
Group 1	12	20.75	9.77	-2.25*
Group 2	10	34.20	17.74	

*$p < .05$ (two-tailed test)

The variance between the two groups on cognitive feedback input (negative) was significant at .05 level ($F = 5.08$). The means differed significantly on this variable ($t = 2.25$, $p < .05$).

F. Feedback Output

There was no significant difference between the groups in terms of the feedback output, both emotional and cognitive. Nor did the groups differ significantly on any of the criteria (timely, specific, and non-judgmental) or the quality (negative or positive) of feedback output.

G. "Criteria Satisfied"

The "criteria satisfied" indicated the mean number of criteria satisfied by the first and last five feedback outputs of a participant. There was no significant difference between the two groups in the criteria satisfied of the first five and last five emotional feedback outputs, nor on the first five cognitive feedback outputs. Tables 18 and 19 present the

findings on the criteria satisfied in the last five cognitive feedback outputs.

TABLE 18

PSCD FOR CRITERIA SATISFIED BY LAST FIVE COGNITIVE FEEDBACK OUTPUTS

Source of Variance	df	SS	MS	F
Between Groups	1	4.89	4.89	13.54***
Within Groups	20	7.22	0.36	
Total	21	12.11		

***p < .01

TABLE 19

GROUP COMPARISON ON CRITERIA SATISFIED BY LAST COGNITIVE FEEDBACK OUTPUTS

Group	N	Mean	SD	t-ratio
Group 1	12	2.17	0.76	3.68***
Group 2	10	1.22	0.30	

***p < .01

There were significant differences in both the F-ratios and the t-ratios on the "criteria satisfied" in the last five (Tables 18 and 19) cognitive feedback outputs.

H. Learning

Learning was defined as the difference between the mean number of criteria satisfied on the first and last five feedback

outputs. There was a learning score for emotional and cognitive feedback. Tables 20 and 21 display the data for the two groups on emotional learning and Tables 22 and 23 on cognitive learning.

TABLE 20

PSCD FOR LEARNING SCORES (EMOTIONAL FEEDBACK OUTPUT)

Source of Variance	df	SS	MS	F
Between Groups	1	0.13	0.13	0.13 (N.S.)
Within Groups	18	18.14	1.01	
Total	19	18.27		

TABLE 21

GROUP COMPARISON ON LEARNING SCORES
(EMOTIONAL FEEDBACK OUTPUT)

Group	N	Mean	SD	t-ratio
Group 1	12	0.50	1.10	0.35 (N.S.)
Group 2	8	0.34	0.84	

TABLE 22

PSCD FOR LEARNING SCORES (COGNITIVE FEEDBACK OUTPUT)

Source of Variance	df	SS	MS	F
Between Groups	1	5.60	5.60	14.66***
Within Groups	20	7.64	0.38	
Total	21	13.24		

***p < .01

TABLE 23

GROUP COMPARISON ON LEARNING SCORES
(COGNITIVE FEEDBACK OUTPUT)

Group	N	Mean	SD	t-ratio
Group 1	12	1.33	0.65	3.83***
Group 2	10	.32	0.58	

***p < .01 (two-tailed test)

There is no significant difference between the T-groups when the learning scores are compared for learning to give effective emotional feedback (Tables 20 and 21). There is a significant difference between the T-groups in learning to give effective cognitive feedback (Tables 22 and 23).

I. Group Perception Inventory

The Group Perception Inventory instrument was administered three times in each of the two groups. There were four dimensions of the instrument: genuineness, understanding, acceptance, and valuing.

TABLE 24

GROUPS COMPARED ON GROUP PERCEPTION INVENTORY -

(1) GENUINENESS

Group	N	Mean	$SD_{1,2}$	SE_D	t-ratio
Group 1	3	14.7	2.1	1.72	-0.81 (N.S.)
Group 2	3	13.3			

TABLE 25

GROUPS COMPARED ON GROUP PERCEPTION INVENTORY -

(2) UNDERSTANDING

Group	N	Mean	$SD_{1,2}$	SE_D	t-ratio
Group 1	3	13.0	1.68	1.38	0.002 (N.S.)
Group 2	3	13.3			

TABLE 26

GROUPS COMPARED ON GROUP PERCEPTION INVENTORY -

(3) ACCEPTANCE

Group	N	Mean	$SD_{1,2}$	SE_D	t-ratio
Group 1	3	15.3	1.82	1.48	-.68 (N.S.)
Group 2	3	14.3			

TABLE 27

GROUPS COMPARED ON GROUP PERCEPTION INVENTORY -

(4) VALUING

Group	N	Mean	$SD_{1,2}$	SE_D	t-ratio
Group 1	3	14.7	2.16	1.76	-.39 (N.S.)
Group 2	3	14.0			

There were no significant differences between the means of the two T-groups on any of the four dimensions of the Group Perception Inventory Instrument.

In summary, the groups were compared and found not to be significantly different on sex; age, verbal output, total feedback input, total feedback output, emotional input, criteria of timely or specific, and quality, criteria satisfied by first five cognitive feedback outputs; learning to give effective emotional feedback; and Group Perception Inventory.

The groups did differ significantly on cognitive feedback input, criteria of timely and specific, and negative quality; and the criteria satisfied by the last five cognitive feedback outputs, and in learning to give effective cognitive feedback.

II. Analysis of Variables Related to Learning (Total Sample)

In this investigation learning was defined as the difference in number of criteria satisfied between the first and last five feedback outputs of the participants. Two kinds of learning were noted: emotional feedback output and cognitive feedback output. The process in which learning took place in

the T-group was the feedback process. The feedback process was depicted as intervening between a participant's verbal output and his learning to give effective feedback.

The thirty-nine variables of this investigation were analyzed by the PSCJ which described the intercorrelation of all variables, the mean, the standard deviation and the t-ratio. Table 28 displays the data for the sum, mean, and standard deviation for each variable. The sample size was twenty-two, except where adjusted for missing data.

TABLE 28

SUM, MEAN, AND STANDARD DEVIATION FOR ALL VARIABLES USED IN THE INTERCORRELATION ANALYSIS (PSCJ)

Number	Variable	Adjusted N	Sum	Mean	SD
1.	Verbal Output	22	7810	355.00	121.94
2.	Feedback Input to Individuals (Emotional & Cognitive	22	1333	60.59	22.32
3.	Feedback Input - Emotional	22	390	17.28	7.48
4.	Emotional Input - Timely	22	168	7.64	4.82
5.	Emotional Input - Specific	21	176	8.38	5.11
6.	Emotional Input - Non-judgmental	21	104	4.95	3.75
7.	Emotional Input - Positive	22	231	10.50	4.96
8.	Emotional Input - Negative	22	159	7.23	4.41
9.	Feedback Input - Cognitive	22	943	42.86	17.39
10.	Cognitive Input - Timely	22	386	17.55	8.90
11.	Cognitive Input - Specific	22	613	27.86	13.38

TABLE 28 (Continued)

Number	Variable	Adjusted N	Sum	Mean	SD
12.	Cognitive Input - Non-judgmental	22	241	10.96	5.16
13.	Cognitive Input - Positive	22	352	16.00	5.82
14.	Cognitive Input - Negative	22	591	26.86	15.23
15.	Feedback Output (Emotional & Cognitive	22	2017	91.69	41.90
16.	Feedback Output - Emotional	22	736	33.46	15.94
17.	Emotional Output - Timely	22	297	14.14	6.85
18.	Emotional Output - Specific	22	338	15.36	8.21
19.	Emotional Output - Non-judgmental	21	175	8.33	4.62
20.	Emotional Output - Positive	22	357	16.23	6.66
21.	Emotional Output - Negative	22	379	17.23	10.23
22.	Feedback Output - Cognitive	22	1281	58.23	30.00
23.	Cognitive Output - Timely	23	490	22.27	17.50
24.	Cognitive Output - Specific	22	826	37.55	22.05
25.	Cognitive Output - Non-judgmental	22	299	13.59	8.51
26.	Cognitive Output - Positive	22	459	20.86	9.52
27.	Cognitive Output - Negative	22	822	37.36	24.19
28.	Feedback Input to Group - Emotional	22	320	14.55	8.94
29.	Feedback Input to Group - Cognitive	22	350	15.91	8.67
30.	Criteria Satisfied on First Five Emotional Feedback Outputs	22	24	1.07	0.58
31.	Criteria Satisfied on Last Five Emotional Feedback Outputs	21	31	1.48	0.67
32.	Criteria Satisfied on First Five Cognitive Feedback Outputs	21	18	0.87	0.38

TABLE 28 (Continued)

Number	Variable	Adjusted N	Sum	Mean	SD
33.	Criteria Satisfied on Last Five Cognitive Feedback Outputs	22	38	1.74	0.76
34.	Quality (amount of negative) on First Five Emotional Feedback Outputs	21	14	0.66	0.25
35.	Quality (amount of negative on Last Five Emotional Feedback Outputs	22	16	0.76	0.76
36.	Quality (amount of negative) on First Five Cognitive Feedback Outputs	22	22	0.99	1.14
37.	Quality (amount of negative) on Last Five Cognitive Feedback Outputs	22	20	0.93	1.21
38.	Learning - Emotional Feedback Outputs	20	9	0.44	0.98
39.	Learning - Cognitive Feedback Outputs	22	19	0.87	0.79

In the tables that follow the variables described in Table 28 are related to each other in terms of (1) verbal output and learning, (2) verbal output and the feedback process, and (3) various aspects of the feedback process. The relationship of verbal output to the major variables of the feedback process and learning is delineated in Table 29. This table provides data for the following research questions:

- Does the amount of verbal output by the participants in a T-group relate to the amount of learning by the participants?

- Is there a relationship between a participant's learning and the kind (cognitive or emotional) of feedback he receives?
- Is there a relationship between a participant's learning and the kind (cognitive or emotional) of feedback he gives in a T-group?
- Does the amount of feedback output by a group member relate to his learning?
- Is there a relationship between the number of times a person receives feedback and the number of times he verbally participates in the T-group?
- Is there a correlation between the number of times a person gives feedback and the number of times he participates verbally in the T-group?
- Is there a relationship between the feedback input of a participant and the amount of feedback output he makes to the group instead of to specific individuals?

TABLE 29

INTERCORRELATION ANALYSIS MATRIX FOR VERBAL OUTPUT, FEEDBACK (INPUT AND OUTPUT) AND LEARNING

(Total Sample, N = 22)

Veriable Number	1	2	3	9	15	16
1.						
2.	.58**					
3.	.39	.75**				
9.	.58**	.96**	.54**			
15.	.78**	.57**	.42*	.55*		
16.	.50*	.39	.46*	.30	.83**	
22.	.82**	.58**	.34	.60*	.96**	.63**
38.	.16	.28	.43*	.17	.42*	.48*
39.	.06	-.09	.15	-.18	.15	.24
28.	.76**	.34	.25	.32	.63**	.83**
29.	.71**	.50*	.21	.56**	.77**	.45*

*r $\geq$ .42, p $\leq$ .05
**r $\geq$ .54, p $<$ .01

Number	Variable
1.	Verbal Output
2.	Feedback Input to Individuals (Emotional and Cognitive)
3.	Feedback Input - Emotional
9.	Feedback Input - Cognitive
15.	Feedback Output (Emotional and Cognitive)
16.	Feedback Output - Emotional
22.	Feedback Output - Cognitive
38.	Learning - Emotional Feedback Outputs
39.	Learning - Cognitive Feedback Outputs
28.	Feedback Input to Group - Emotional
29.	Feedback Input to Group - Cognitive

TABLE 29 (Continued)

Variable Number	22	38	39	28	29
38.	.30				
39.	.09	.18			
28.	.44*	.46*	.23		
29.	.84**	.21	.00	.47*	

There is a significant ($p < .01$) relationship between verbal output (1.) and feedback output (15.)* and feedback input (2.). Both dimensions of feedback output, emotional (16.) and cognitive (22.) are also highly significantly correlated with verbal output (1.). Cognitive feedback input (9.) is also significantly related ($r = .71$) to cognitive feedback output expressed to the group (29.), but not to emotional feedback to the group (28.).

There are no significant relationships between learning to give more effective cognitive feedback (39.) and any of the other variables.

Learning to give emotional feedback (38.) is positively correlated significantly with emotional feedback input (3.), total feedback output (15.), and emotional feedback output (16.).

The expression of emotional feedback to the group relates significantly to verbal output (1.), $r = .76$.

The expression of cognitive feedback to the group (29.) is related positively and significantly to all other variables except emotional feedback input (3.), learning to give emotional feedback (38.), and learning to give cognitive feedback (39.).

The expression of emotional feedback to the group (28.) is significantly related to feedback output (15.), emotional feedback output (16.), and cognitive feedback output (22.), and learning to give emotional feedback (38.).

Tables 30 and 31 are relevant to the following research questions:

- Does the number of criteria satisfied by a person's feedback input relate to the number of criteria his feedback output satisfies?
- Is there a relationship between a participant's learning and the kind (cognitive or emotional) of feedback he receives?
- Is there a relationship between a participant's learning and the kind (cognitive or emotional) of feedback he gives in a T-group?

TABLE 30

INTERCORRELATION ANALYSIS MATRIX OF THE CRITERIA OF THE EMOTIONAL FEEDBACK PROCESS AND LEARNING

(Total Sample, N = 22)

Variable Number	1	3	4	5	6	16	17	18	19	38	39
1.											
3.	.39										
4.	.23	.91**									
5.	.03	.90**	.84**								
6.	.04	.74**	.80**	.81**							
16.	.50*	.46*	.29	.20	.12						
17.	.58**	.43*	.37	.16	.25	.82**					
18.	.45*	.37	.28	.15	.18	.89**	.81**				
19.	.20	.17	.14	.05	.33	.41	.57*	.57**			
38.	.16	.43*	.46*	.36	.51*	.48*	.36	.48*	.33		
39.	.06	.15	.12	-.04	.28	.24	.20	.27	.48*	.18	

*r $\geqslant$ .42, p $<$ .05
**r $\geqslant$ .54, p $<$ .01

Number	Variable
1.	Verbal Output
3.	Emotional Input
4.	Emotional Input - Timely
5.	Emotional Input - Specific
6.	Emotional Input - Non-judgmental
16.	Emotional Output
17.	Emotional Output - Timely
18.	Emotional Output - Specific
19.	Emotional Output - Non-judgmental
38.	Learning - Emotional Feedback Outputs
39.	Learning - Cognitive Feedback Outputs

There is a significant relationship between verbal output and emotional feedback output (16.), the timeliness (17.) of feedback, and its specificity of behavior (18.).

With regard to emotional feedback input (3.) and the three criteria related to it (4.), (5.), and (6.), verbal output has no significant relationship with them.

All three emotional input criteria = timely (4.), specific (5.), and non-judgmental (6.) are significantly intercorrelated.

Table 30 presents a significant relation between emotional output (16.) and the criteria of timely (17.) with emotional input (3.), r = .46 and .50 respectively.

Learning to give effective emotional feedback (38.) is significantly correlated to the emotional feedback input criteria of timely (4.) and non-judgmental (6.), r = .46 and r = .51 respectively. The only criterion satisfied in emotional feedback which is significantly related to learning to give effective emotional feedback (38.) is specific (18.), r = .48.

Learning to give effective cognitive feedback (39.) relates significantly only to emotional feedback output which is specific (18.), r = .48.

Table 31 displays the correlation of verbal output and the criteria satisfied by cognitive feedback, input and output.

TABLE 31

INTERCORRELATION ANALYSIS MATRIX OF THE CRITERIA OF THE COGNITIVE FEEDBACK PROCESS AND LEARNING

(Total Sample, N = 22)

Variable Number	1	9	10	11	12	22
1.						
9.	.58**					
10.	.59**	.89**				
11.	.59**	.96**	.93**			
12.	.02	.22	.37	.30		
22.	.82**	.60**	.54**	.62**	.07	
23.	.67**	.46*	.41	.50**	.10	.92**
24.	.77**	.55**	.47*	.57**	-.16	.97**
25.	.40	.06	.10	.01	.09	.62**
38.	.16	.17	.11	-.23	.20	.30
39.	.06	-.18	-.32	.10	.17	.09

*$r \geqslant .42$, $p < .05$
**$r \geqslant .54$, $p < .01$

Number	Variable
1.	Verbal Output
9.	Cognitive Input
10.	Cognitive Input - Timely
11.	Cognitive Input - Specific
12.	Cognitive Input - Non-judgmental
22.	Cognitive Output
23.	Cognitive Output - Timely
24.	Cognitive Output - Specific
25.	Cognitive Output - Non-judgmental
38.	Learning - Emotional Feedback Outputs
39.	Learning - Cognitive Feedback Outputs

TABLE 31 (Continued)

Variable Number	23	24	25	38	39
24.	.96**				
25.	.64**	.65**			
38.	.48*	.44*	.17		
39.	.02	.47*	.23	.18	

In Table 31 verbal output (1.) correlated at $p < .01$ level on the cognitive feedback criteria variables (9.), (10.), (11.), (22.), (23.), and (24.). It is not significantly related to the non-judgmental character of cognitive feedback either as output (24.) or input (12.).

Two criteria satisfied by cognitive feedback output (Table 31) were significantly correlated to learning to give effective emotional feedback (38.): cognitive output - timely (23.) and cognitive output - specific (24.).

The criterion related significantly to learning to give effective cognitive feedback (39.) was cognitive output - specific (24.), $r = .47$.

The relationship of verbal output (1.) and the quality (positive or negative) of feedback input and output is displayed in Table 32. The data are relevant to the research questions:

- Is there a correlation between the quality of a participant's feedback input and the quality of his feedback output?
- Is there a relationship between a participant's learning and the quality (positive or negative) of the feedback he receives?

TABLE 32

INTERCORRELATION ANALYSIS MATRIX OF FEEDBACK PROCESS: QUALITY OF COGNITIVE AND EMOTIONAL FEEDBACK INPUT AND OUTPUT WITH LEARNING

(Total Sample, N = 22)

Variable Number	1	7	13	8	14	20
1.						
7.	.42*					
13.	.29	.68**				
8.	.18	.27	.52*			
14.	.55**	.36	.21	.31		
20.	.48*	.23	.16	.31	.26	
26.	.62**	.11	.07	.42*	.21	.79**
21.	.47*	.51*	.63**	.26	.09	.76**
2ø.	.78**	.29	.25	.18	.67**	.54**
38.	.16	.50*	.43*	.17	.02	.34
39.	.06	.25	-.01	-.02	-.20	.19

*r ⩾ .42, p ⩽ .05
**r ⩾ .54, p < .01

Number	Variable
1.	Verbal Output
7.	Emotional Input - Positive
13.	Cognitive Input - Positive
8.	Emotional Input - Negative
14.	Cognitive Input - Negative
20.	Emotional Output - Positive
26.	Cognitive Output - Positive
21.	Emotional Output - Negative
2ø.	Cognitive Output - Negative
38.	Learning - Emotional Feedback Outputs
39.	Learning - Cognitive Feedback Outputs

TABLE 32 (Continued)

Variable Number	26	21	27	38	39
21.	.61**				
27.	.49*	.42*			
38.	.17	.52*	.31		
39.	.23	.26	.01	.18	

Verbal output (1.) is significantly related ($p < .05$) to positive emotional input (7.), positive emotional output (20.), and negative emotional output (21.).

Positive emotional input (7.) correlated significantly with positive cognitive input (13.) and negative emotional output (21.).

Cognitive input that is positive (13.) also shows significant relationships with negative emotional input (8.) and output (21.).

Negative emotional input (8.) significantly correlates with positive cognitive output (25.).

The relationship of cognitive input that is negative (14.) is significant at .01 level ($r = .67$) with negative cognitive output (26.).

Positive emotional (20.) and cognitive (25.) output and negative cognitive (26.) and emotional (21.) output are all four significantly related to each other.

There are no significant relationships between learning to give cognitive feedback (39.) and the quality (negative or positive) of feedback output or input.

There is a significant relationship between learning to give emotional feedback (38.) and the positive quality of both emotional and cognitive feedback input, variables (7.) and (13.) respectively; and also a significant relationship with negative emotional output (21.)

Table 33 depicts the learning change that occurred. (Learning is defined as the mean difference of criteria satisfied by the first and last five emotional and cognitive feedback outputs.)

TABLE 33

SIGNIFICANCE OF THE DIFFERENCE OF THE MEAN NUMBER OF CRITERIA SATISFIED ON FIRST AND LAST FIVE EMOTIONAL AND COGNITIVE FEEDBACK OUTPUTS

Variables	N	Mean Difference	SD of Difference	SE of Mean Difference	t-ratio
30-31	22	.41	.87	.18	2.61**
32-33	22	.87	.79	.17	4.93***

**p < .02
***p < .01

Number	Variable
30.	Criteria Satisfied on First Five Emotional Feedback Outputs
31.	Criteria Satisfied on Last Five Emotional Feedback Outputs
32.	Criteria Satisfied on First Five Cognitive Feedback Outputs
33.	Criteria Satisfied on Last Five Cognitive Feedback Outputs

There is a significant difference between the means on the the criteria satisfied on the first (30.) and last (31.) five emotional feedback attempts (t-ratio = 2.61, $p < .02$), and on the first (32.) and last (33.) cognitive feedback attempts (t-ratio = 4.93, $p < .01$).

In brief, the results demonstrate significant relationship between learning to give effective emotional feedback and several of the variables of the feedback process. Learning to give effective cognitive feedback was related only to the criteria of specificity in feedback output.

There was evidence of significant relationships between verbal output and the feedback process, and between the cognitive feedback process variables.

III. Analysis of Groups Based on Verbal Output

The data were analyzed in the PSCD program to determine whether there were differences on the variables between two new groups based on amount of verbal output. Group 1 was composed of persons above the mean verbal output for the total sample, and Group 2 was composed of persons below the mean. Each group contained eleven persons.

Table 34 portrays the mean, standard deviation, and t-ratio for each variable when analyzed on the basis of the new grouping. The data in this table provide an analysis of the feedback and learning variables in terms of verbal output, high or low.

TABLE 34

GROUPS COMPARED BASED UPON HIGH OR LOW VERBAL OUTPUT

Number and Variable	N	Mean	SD	t-ratio
1. Verbal Output				
Group 1****	11	453.82	70.34	6.64***
Group 2	11	256.18	69.26	
2. Feedback Input (Emotional and Cognitive)				
Group 1	11	69.09	21.39	1.89 (N.S.)
Group 2	11	52.09	20.74	
3. Feedback Input - Emotional				
Group 1	11	20.27	5.93	1.66 (N.S.)
Group 2	11	15.18	8.24	
4. Emotional Input - Timely				
Group 1	11	8.55	3.50	0.88 (N.S.)
Group 2	11	6.73	5.90	
5. Emotional Input - Specific				
Group 1	11	8.55	4.87	0.15 (N.S.)
Group 2	10	8.20	5.63	
6. Emotional Input - Descriptive				
Group 1	11	4.82	2.79	-0.17 (N.S.)
Group 2	10	5.10	4.75	
7. Emotional Input - Positive				
Group 1	11	12.09	3.83	1.56 (N.S.)
Group 2	11	8.91	5.59	
8. Emotional Input - Negative				
Group 1	11	8.18	5.02	1.02 (N.S.)
Group 2	11	6.27	3.69	
9. Feedback Input - Cognitive				
Group 1	11	48.82	19.58	1.67 (N.S.)
Group 2	11	36.91	13.19	
10. Cognitive Input - Timely				
Group 1	11	20.00	10.21	1.32 (N.S.)
Group 2	11	15.09	6.98	
11. Cognitive Input - Specific				
Group 1	11	31.82	16.17	1.42 (N.S.)
Group 2	11	23.91	8.95	

TABLE 34 (Continued)

Number and Variable	N	Mean	SD	t-ratio
12. Cognitive Input - Descriptive				
Group 1	11	9.91	5.44	-0.95 (N.S.)
Group 2	11	12.00	4.77	
13. Cognitive Input - Positive				
Group 1	11	16.82	4.98	0.65 (N.S.)
Group 2	11	15.18	6.69	
14. Cognitive Input - Negative				
Group 1	11	32.00	18.39	1.65 (N.S.)
Group 2	11	21.73	9.52	
15. Feedback Output (Emotional and Cognitive)				
Group 1	11	122.73	31.67	5.20***
Group 2	11	60.64	23.75	
16. Feedback Output - Emotional				
Group 1	11	42.09	15.59	2.98***
Group 2	11	24.82	11.25	
17. Emotional Output - Timely				
Group 1	11	17.73	6.50	2.96***
Group 2	10	10.20	4.94	
18. Emotional Output - Specific				
Group 1	11	19.36	7.53	2.57**
Group 2	11	11.36	7.05	
19. Emotional Output - Descriptive				
Group 1	10	9.90	5.09	1.53 (N.S.)
Group 2	11	6.91	3.83	
20. Emotional Output - Positive				
Group 1	11	19.45	6.76	2.55**
Group 2	11	13.00	4.96	
21. Emotional Output - Negative				
Group 1	11	22.64	9.74	2.86***
Group 2	11	11.82	7.91	
22. Feedback Output - Cognitive				
Group 1	11	80.64	24.44	5.30***
Group 2	11	35.82	13.72	

TABLE 34 (Continued)

Number and Variable	N	Mean	SD	t-ratio
23. Cognitive Output - Timely				
Group 1	11	32.91	19.18	3.55***
Group 2	11	11.64	5.12	
24. Cognitive Output - Specific				
Group 1	11	5.29	2.02	4.55***
Group 2	11	2.22	.97	
25. Cognitive Output - Descriptive				
Group 1	11	17.36	7.16	2.28*
Group 2	11	9.82	8.33	
26. Cognitive Output - Positive				
Group 1	11	26.27	5.78	3.20***
Group 2	11	15.45	9.63	
27. Cognitive Output - Negative				
Group 1	11	54.36	23.37	4.63***
Group 2	11	20.36	6.82	
28. Feedback Output to Group - Emotional				
Group 1	11	17.00	10.06	1.31 (N.S.)
Group 2	11	12.09	7.30	
29. Feedback Output to Group - Cognitive				
Group 1	11	20.73	8.64	3.09***
Group 2	11	11.09	5.70	
38. Learning - Emotional Feedback Outputs				
Group 1	9	0.73	0.88	1.25 (N.S.)
Group 2	11	0.19	1.03	
39. Learning - Cognitive Feedback Outputs				
Group 1	11	1.07	0.69	1.19 (N.S.)
Group 2	11	0.67	0.87	

There is a significant difference in verbal output (1.) between Group 1. (High Verbal Output) and Group 2. (Low Verbal Output) depicted in Table 34. There are also significant differences on all of the variables involved in feedback output (15. - 29. in Table 34) except for non-judgmental emotional output (19.) and emotional feedback given to the group (28.).

Persons in Group 1. demonstrated no significant difference from persons in Group 2. in their learning to give feedback measured in variables 38. and 39.

It has been the intent of this chapter to display the findings of this investigation. The data have been analyzed with reference to three major concerns: (1) the similarity of the two T-groups, (2) the relationship of verbal output, the feedback process, and learning, and (3) the comparison of the means of all of the variables when the sample was grouped into two new groupings based upon the criteria of "above-the-mean" or "below-the-mean" verbal output. The next chapter will interpret the findings and identify the hypotheses generated by the evidence of this exploratory study.

CHAPTER VI

SUMMARY, LIMITATIONS, AND FUTURE RESEARCH

Summary and Interpretation of Major Findings

The purpose of this investigation was to examine the relationship between verbal participation, the feedback process, and learning in a T-group. Two major objectives were advanced for this exploratory study:

- to discover whether there was a relationship between the learning of the participants of a T-group and their verbal participation.
- to more clearly identify and understand the role of the feedback process in the laboratory learning process in a T-group.

The verbal interaction from two T-groups selected from a training laboratory in personal development and group process was observed and coded into the Feedback Process Analysis which classified verbal output into several categories related to the feedback process.

Learning was defined as "the ability to give effective feedback" and was assessed by determining the mean difference of the number of feedback criteria satisfied by the first and last five feedback outputs. Both feedback and learning were classified into two classes: emotional and cognitive.

Scores for the variables of Verbal Output (1.)* and the feedback process (2. - 29.) were frequency tabulations. The

*Variable number (Table 28, p. 107). Tables will be designated as: Table ___.

scores of the dependent variables (30. - 37.) were means based upon observations of "criteria satisfied" and quality of first and last five feedback attempts. The scores of dependent variables (38. and 39.) represent the differences between the means of the first and last five feedback outputs.

Raw scores and resultant means were analyzed through the use of one-way analysis of variance (PSCD). Fisher's t-ratios were computed for paired comparisons between all the variables. Intercorrelation analysis (PSCJ) provided the product-moment correlation coefficients which were used to construct inter-correlation matrices by which the degree of association between variables could be assessed. The significance of mean differences was determined by computing the t-ratio for the difference between correlated means.

Similarity of Groups in the Sample

In order to establish the similarity between the two groups the chi-square statistic was computed for a frequency table based upon the sex of the T-group participants. It was not significant. The Group Perception Inventory instrument yielded group means on its four dimensions. T-ratios computed for the differences between the means of the groups were not significant. The groups were compared and found not to be significantly different on verbal output; age; feedback input; feedback output; emotional input, criteria of timeliness and specificity, and quality; criteria satisfied by first and last five emotional outputs; and learning to give effective emotional feedback. The groups did differ significantly on cognitive

input, the criteria of timely and specific, and negative quality; the criteria of non-judgmental on emotional feedback input; the criteria satisfied by the last five cognitive feedback outputs and the learning score on the giving effective cognitive feedback. However, since the two groups do not differ on demographic data on sex and age, nor on process measurements of both learning scores, total feedback input, total feedback output, verbal output, and the Group Perception Inventory, it is reasonable to assume the groups are similar.

Learning

One of the objectives of this research was to describe the relationship between verbal output and learning in sensitivity training. Learning was defined as a change in a behavioral act, that of giving effective feedback. Feedback was effective to the degree that it satisfied all three criteria. Feedback could be either emotional or cognitive. Therefore, there were two learning evaluations, one on each kind of feedback. (Variables 38. and 39.) The research findings will be discussed relative to the research questions concerned with the relationship of learning, feedback, and verbal output.

The reader will recall that there was significant change on the number of criteria satisfied on the first and last five feedback outputs of both cognitive and emotional feedback (see Table 33). <u>There was significant learning in the training laboratory in terms of increase in the ability to give effective feedback</u>.

1. Does the amount of verbal output by the participants in a T-group relate to the amount of learning by the participants? The finding of this study is that verbal output was not related to learning to give effective emotional (38)* or cognitive (39) feedback (see Table 29). However, verbal output is related significantly to several of the dimensions of the feedback process (discussed below in detail). Within the feedback process emotional input (3), total feedback output (15), and emotional feedback output (16) are significantly related to learning. There is implied an indirect relationship between learning and verbal output through the feedback process that does not appear in the direct correlations between learning and verbal output in this investigation. More research is needed to conclusively establish the lack of relationship between verbal output and learning.

2. Does a person who verbally participates more in a T-group learn to give feedback more effectively in the T-group than persons who participate less frequently? In order to investigate this question, the total sample was divided into two groups, one group of above-the-mean number of verbal outputs, the other group composed of persons whose verbal output was below-the-mean of the total sample. The findings were that there was no significant difference in the learning scores of the two new groups. Persons who participate more frequently do not learn to give feedback more effectively than those who participate less often.

*Number of the variable

The two new groups differed significantly on all of the variables in feedback output (15. - 29. in Table 35) except for non-judgmental emotional output (19.) and emotional feedback given to the group (28.). In Table 29 total feedback output (15.) and emotional feedback output are related to learning to give effective emotional feedback. There is an indirect connection between high verbal output and learning implied but not demonstrated in the findings of this research (as explained in the above section).

3. Is there a relationship between a participant's learning and the kind (cognitive or emotional) of feedback he receives? The findings indicate there is a significant relationship between learning to give effective emotional feedback (38.) and emotional feedback input (3.). (See Table 29.) There were no significant relationships between learning to give cognitive feedback (39.) and any of the feedback input variables.

The criteria of emotional feedback input correlated significantly with learning to give emotional feedback. The timeliness (4.), and non-judgmental (6.) tone of emotional feedback received by a participant correlated significantly with learning (38.) to give emotional feedback, $r = .46$ and $r = .51$ respectively (see Table 30). The criteria of specific (5.) was nearly significant at $r = .36$. On the other hand, none of the criteria of cognitive feedback input is significantly related to learning to give cognitive feedback.

The findings of this study are not conclusive regarding the relationship between a participant's learning and the kind

of feedback he receives. What is supported is a strong relationship between learning to give emotional feedback and emotional feedback received by the learner. It can be stated that as the emotional feedback received by learners in a T-group increases in effectiveness, so will their ability to give effective emotional feedback increase.

There is no finding which helps to understand why the relationship between learning to give cognitive feedback and cognitive feedback received is not significant too. More research needs to be conducted to understand this relationship.

4. Is there a relationship between a participant's learning and the kind (cognitive or emotional) of feedback he gives in a T-group? The findings of this study show that learning to give emotional feedback (38.) is significantly related to total feedback output (15.), emotional feedback output (16.), and emotional feedback to the group (28.),(see Table 29.) Learning to give cognitive feedback was not related (39.) to cognitive or emotional output variables, although to certain criteria in cognitive feedback output (discussed below). A person who gives more emotional feedback can be expected to learn to give it more effectively.

If this finding was simply the result of a "practice" effect, then the finding could be expected to demonstrate the same significant relationship between learning to give cognitive feedback and cognitive feedback output. Learning to give emotional feedback is a function of something other

than repetition. The findings regarding the criteria of feedback output help to interpret these results.

Learning to give emotional feedback (38.) is significantly related to the following criteria of feedback output: emotional output - specific (18.), see Table 30; cognitive output - timely (23.) and specific (24.), see Table 31. Learning to give cognitive feedback (39.) is significantly correlated to emotional feedback output - specific (18.), see Table30, and to cognitive feedback output - specific (24.), see Table 31. <u>These findings indicate that as the specificity of a person's feedback output (emotional and cognitive) increases, so will his learning to give both types of feedback increase</u>. It will be recalled that specificity of feedback output was one of the criteria of effective feedback, so that specific feedback given more often would increase a person's learning score by at least one-third. However, since learning to give emotional feedback is related significantly to timeliness and non-judgmental aspects of feedback input, it would seem that more is implied in this finding than a circular process. The specificity of feedback output is not related directly through feedback input to learning to give emotional feedback; therefore specific feedback output must be on specific behavior other than learning to give feedback effectively. It means that as a person's feedback becomes more specific, the potential of learning about behavior other than learning to give effective feedback, should increase. Additional research is needed to determine what the other behaviors are upon which specific feedback focused.

5. Is there a relationship between a participant's learning and the quality (negative or positive) of the feedback he receives? The findings of this study demonstrate that learning to give emotional feedback (38.) is significantly related to positive emotional (7.) and positive cognitive (13.) feedback input (see Table 32), but not to either negative emotional (8.) or negative cognitive (14.) feedback input. Learning to give cognitive feedback (39.) was not significantly to either quality of feedback input.

The findings indicate that the more positive the feedback (emotional and/or cognitive) a person receives, the more he will learn to give emotional feedback effectively. It will be recalled that in the review of theory and research on the nature of reinforcement in the laboratory learning process, Miles (see page 46) stated that negative feedback was more effective. The finding of this study does not support Miles. The criterion of learning Miles used was perceived change: (1) by participant at lab, (2) by trainers of participant at lab, and (3) by job associates in participant's job situation.

6. Does the amount of feedback output by a group member relate to his learning? The findings of this study are that the amount of feedback output (15.) is related significantly to learning to give effective emotional feedback (38.), but not to learning to give cognitive feedback (39.), see Table 29.

In summary, the findings of this study do not support a significant relationship between learning and verbal output. However, learning to give effective emotional feedback was

related to emotional feedback received, especially if it is timely and non-judgmental and to emotional and cognitive feedback output which is specific. Learning to give emotional feedback will also increase as the positive quality of emotional and cognitive feedback received increases.

There were many significant relationships between learning to give effective emotional feedback and variables of the feedback process. On the other hand, very few significant relationships were found between learning to give cognitive feedback and the feedback process. Since there was more learning change on learning to give cognitive feedback, this finding is difficult to explain. One interpretation is that a training laboratory for first-time attenders tends to emphasize learning to give emotional feedback. Although learning to give cognitive feedback was occurring, the process must have operated without being verbally identified in the T-groups. The verbalized interaction probably was more concerned with the identification and expression of emotions than with the expression of ideas.

It is not clear from the results of this study what the relationship is between learning to give cognitive feedback and the feedback input and output process.

The relationship between verbal output and learning is unclear from the findings in this investigation. Learning and the feedback process are related. Verbal output and the feedback process are related. There is an implied logical relationship between learning and verbal output that requires further research to clarify.

Verbal Output

The independent variable chosen for this research was verbal output. The selection of verbal output was justified on the basis of the findings. The relationship of verbal output with learning is discussed above. This section will discuss the relation of verbal output and feedback.

Table 29 describes significantly high relationships between verbal output and the feedback process (input and output). In terms of feedback output, emotional and cognitive output are related to verbal output $r = .50$ and $r = .82$ respectively. In terms of feedback input, emotional and cognitive input are related to verbal output $r = .39$ and $r = .58$ respectively. The findings demonstrate that as verbal output increases in a T-group, feedback output and cognitive feedback input can be expected to increase. This finding underscores the necessity of the participant to be actively engaged in the interaction process.

It may be argued that such a finding as stated above is biased in that since feedback is a kind of verbal output, when verbal output increases the probabilities for feedback to occur increase. However, the increase in the probability that feedback could occur does not mean it will. The fact that feedback does increase as verbal output increases in a T-group may be attributed to the particular learning norms operative in the training situation. It is conceivable that verbal output could increase and feedback decrease in a situation in which the norm was to talk about things external to the immediate situation,

i.e. a counseling session, a cocktail hour, a hospital visit with a person with a terminal disease.

The relationship of verbal output and quality is interesting to note (Table 32). In terms of input, verbal output (1.) correlates significantly with positive emotional input (7.) and negative cognitive input (14.) r = .42 and .55 respectively. In other words, as a person talks more in a T-group he can expect to receive more positive emotional feedback and more negative cognitive feedback. This finding differs from findings reported by Collins and Guetzkow (13) that the most frequent interactor tends to be less liked. This difference may be the result of the laboratory learning norm which encourages and affirms personal involvement, but also affirms and supports negative feedback from participants to others involved.

In terms of the quality of feedback output, verbal output (1.) is significantly related to positive and negative emotional output and positive and negative cognitive output (Table 32). This finding indicates that the more a person interacts in a T-group, the more his feedback to others will be both more negative and more positive. This is an interesting finding since learning to give emotional feedback increased as positive feedback received increased.

To further investigate the influence of verbal output on the feedback process in a T-group, the total sample of twenty-two was grouped into two new groups: Group 1 composed of persons whose verbal output was above the mean, and Group 2 composed of persons whose verbal output was below the mean. The

findings of the comparison (Table 35) show that there were significant differences between the groups on all of the feedback output variables (15. - 27.) except descriptive emotional feedback (19.). These results support those findings from the total sample that indicate a significant positive correlation between verbal output and feedback output.

The Feedback Process

The second major objective of this research project was to more clearly understand the feedback process in the laboratory learning process in T-groups. In order to link the findings to the objective, the results will be summarized and interpreted around the research questions (see page 72).

1. "Is there a relationship between the number of times a person receives feedback and his verbal output?" The findings in this study support an affirmative answer to this question, with qualifications. There is a correlation of $r = .58$ ($p < .01$) between verbal output and feedback input. However, the significant correlation holds consistent for cognitive feedback input, and not emotional input.

The correlation between verbal output and feedback input is furthered qualified by the findings in Table 35 in which there are no significant differences between the feedback input to high participators when compared to low participators. There is a trend which is supportive of the correlations in the total sample. The t-ratio for feedback input was 1.89, emotional input 1.66, and cognitive input 1.67.

These results indicate that the relationship between verbal output and feedback received (input) is unclear. There is indicated a conclusion that the more one participates the more feedback he will receive. However, the process is influenced by factors other than verbal output alone as indicated in the findings of Table 35. One possible factor is indicated in the significant difference between high and low participators in the amount of feedback the high participators gave to the whole group instead of to an individual (t-ratio = 3.09, $p < .01$; Table 35). This finding denotes that a significant amount of feedback is being given to everyone in a group, but to no one in particular. Thus high participators as well as low participators are receiving feedback from other high participators, but it is not direct or personal; rather, it has reference to the whole group. More research is needed to clearly explain whether group-oriented feedback is related to the learning of the participants.

2. "Is there a correlation between the number of times a person gives feedback and the number of times he participates verbally in a T-group?" The data in these research findings support an affirmative answer to this question. Evidence points to more feedback output from persons with higher verbal outputs. Table 29 identifies correlations between feedback output and verbal output which are all significant to .05 or higher. When high and low verbal output persons were compared, the difference between them in favor of high output on all of the feedback output variables was significant at .05 or above. The two major variables of

emotional feedback output (16) and cognitive feedback output (22) were significant at .01

These results signify that a person's feedback output is closely associated with his verbal output. The findings also stimulate the conclusion that a group of high participators would produce more feedback than a group of low participators.

3. "Does the amount of feedback input and the criteria it satisfies relate to the feedback output and the criteria it satisfies?" This question was intended to investigate the relationship of the nature and character of feedback input and output. The evidence for this question will be displayed in terms of four relationships: emotional input and output criteria; emotional input and cognitive output criteria; cognitive input and output criteria, and cognitive input and emotional output criteria. Recall that these measures and relationships represent the number of criteria satisfied by a particular feedback output. The range of criteria was from none to three.

There is no evidence that supports a significant relationship between the criteria satisfied in emotional feedback input and output. (Table 30 displays the insignificant correlations).

The relationships between criteria satisfied by emotional feedback input and cognitive feedback output, and cognitive feedback input and emotional feedback output are also not significant.

Table 31 depicts the relationships between cognitive feedback input and output. The following criteria of input and output feedback are significantly related:

Cognitive Input - Timely to Cognitive Output - Specific,

Cognitive Input - Specific to Cognitive Output - Timely, and

Cognitive Input - Specific to Cognitive Output - Specific.

In short, the criteria satisfied by cognitive feedback input and output are related significantly. The criteria satisfied in other relationships between emotional and/or cognitive input and output feedback are not significant. The conclusion that can be drawn from this evidence is that the effectiveness of the feedback received by a participant does not influence his feedback output, except in cognitive feedback. It is not clear from this evidence that the increased effectiveness (more criteria satisfied) of cognitive feedback input would increase a participant's feedback output effectiveness. It is, however, implied.

4. "Is there a correlation between the quality (positive or negative) of a participant's feedback input and the quality of his feedback output?" Feedback was categorized on the basis of its quality as either negative or positive. The evidence supports an affirmative answer to this research question. Table 32 portrays four significant correlations between the quality of input and output. Emotional Input - Positive (7.) correlated with negative emotional output (21.). Negative emotional input (8.) correlated significantly with positive cognitive output (25.). Positive cognitive input (13.) correlated with negative emotional output (21.). Negative cognitive

input (14.) correlated with negative cognitive output (26.). All of these correlations were significant at .05 or higher.

The results indicate that as a person increased his negative feedback to others, he could expect positive responses, both emotional and cognitive. However, to the degree his cognitive feedback to others was either negative or positive, he could expect only negative responses. There is indicated a different quality response to emotional feedback than to cognitive feedback. Emotional response elicits positive feedback. That it elicits positive response when it is negative could be explained by the tendency of T-group trainers to affirm the expression of negative feelings per se.

On the other hand, the data seem to indicate that as a person receives positive and negative emotional feedback and positive cognitive feedback, he will tend to express negative emotions and both negative and positive cognitive reactions. It is difficult to explain the phenomenon of positive input being related to negative output, except by the explanation given above.

5. "Is there a relationship between the feedback input of a participant and the amount of feedback output he makes to the group instead of to specific individuals?" The evidence from this study supports a positive answer to this question. Table 29 presents evidence which demonstrates clearly that the cognitive output to the group (29.) is significantly related to feedback input ($r = .50$) and cognitive input ($r = .56$). However, emotional output to the group is not related to any dimension of input.

The interpretation of these results is that as more cognitive reactions are received by individual persons in a T-group, more of their feedback observations about the group will be directed to the group as a whole.

6. "Does the feedback output of a participant relate to his feedback input?" The relationship in this study is significantly positive between feedback output (12.) and input (2.), $r = .57$, $p < .01$ (see Table 29). This relationship is further supported by significant relationships between emotional feedback output (16.) and emotional feedback input (3); and between cognitive feedback output (22.) and cognitive feedback input (9.). The finding is that the more feedback one gives, the more he will receive. The feedback process is a crucial aspect of the laboratory learning process. The strong link between giving and receiving feedback can be utilized.

Conclusions of the Study

There is no significant relationship between verbal output and learning to give effective feedback in a T-group.

Verbal output and the feedback process are strongly linked together.

Feedback giving and receiving are closely related to each other on both the emotional and cognitive levels of exchange.

Learning to give effective emotional feedback and the feedback process are related. The relationship of learning to give effective cognitive feedback and the feedback process is unclear.

Positive feedback received, both emotional and cognitive, is significantly related to learning to give emotional feedback. The relationship of negative feedback input and learning is not clear.

Hypotheses

There are several hypotheses which are indicated by the findings in this exploratory study and need to be substantiated with a more general population. They are:

1. That as a T-group member's verbal output increases, his emotional and cognitive feedback output will increase.
2. That as a T-group member's verbal output increases, the cognitive feedback he receives will increase.
3. That as the amount of emotional feedback received by a T-group member increases, his effectiveness in giving emotional feedback will increase.
4. That as a T-group participant's feedback output becomes increasingly specific (with reference to behavior), the participant will learn to give emotional feedback more effectively.
5. That as a T-group member receives more positive feedback, his ability to give emotional feedback will increase.
6. That as a T-group member increases his feedback to others, the feedback he receives will increase.

7. That in T-groups composed homogeneously of high participators, the amount of feedback exchanged will be greater than in groups composed of low participators or mixed.
8. That as the cognitive and emotional feedback expressed by a T-group participant to his whole group increases, the amount of cognitive feedback he receives will increase.

Testing these hypotheses in a controlled field experiment would enhance their value to T-group theory and practice.

Limitations

A number of limitations must be noted in this study. The size of the sample was very small (N = 22) and limited with respect to training laboratory population. The age and sex of the participants were randomly involved in the sample. However, characteristics such as occupation, educational level, race, and level of income should be considered. The fact that ten of twenty-two persons in the sample were clergy is also a limitation.

An increase in the size of the sample would allow the statistical analysis to include regression statistics which could enhance the consideration of the correlations and their predictive value.

The training design of the sample should be broadened to increase the relevance of the findings to a larger population. The sample for this study was drawn from a training

laboratory with a focus on group processes. It would enhance the generalizability of these findings to include groups from a laboratory focused on other processes, i.e. personal growth, organizational development, community development.

The learning variable was greatly limited to a very specific behavioral learning goal in a basic training laboratory, that of learning to give feedback effectively. The relationship between learning, feedback, and verbal output could more effectively be analyzed by enlarging the learning variable to include other dimensions of T-group training goals. Other behavioral learning variables could be: the degree of focus on the "here and now", or the degree of group process observation, or the degree of trust evidenced, or the degree of interdependence established with other group members.

The learning variable could also be expanded to include non-verbal characteristics of the feedback process which might take into account some emotional exchanges.

Other non-behavioral dimensions of learning in the laboratory learning process which could be included in an investigation are: change in self-concept, or the understanding of group processes, and/or group development, and/or the helping relationship, and/or the laboratory learning process.

This investigation was conducted with groups from a six-day training laboratory. In order to generalize the findings of this research, the limitation of the six-day lab needs to be overcome. Repeating the analysis in marathons, weekend, and two to three-week laboratories would greatly increase the population base of the sample.

Another limitation of the findings of this investigation is that the analysis of the data is based on a group sample. It would clarify the relationships of verbal output, feedback, and learning if the data were re-analyzed using the individual as the basic focus for research. Scores could be developed for each person during each T-group session. The mean scores for each person over a series of sessions could be computed and compared with other members of the group. Two kinds of findings could come from this approach. It would specifically describe what happens to a person relative to his verbal output, feedback, and learning. And secondly, it would provide data with which to examine the development of the feedback process over a series of T-group sessions.

Another limitation of this investigation is that the raw data were analyzed without controlling for the amount of feedback by each participant relative to his amount of verbal output. In order to more clearly describe the relationships between the variables in this study, a ratio of Feedback Output Variables/Verbal Output could be computed and related to the other variables.

The use of consensual validation in the coding process in this research needs to be checked for reliability. The utilization of independent observers is needed to demonstrate the reliability of the Feedback Process Analysis Instrument.

Implications For Sensitivity Training

The introduction to this investigation included a delineation of several assumptions relevant to training which trainers make who utilize the T-group. Two of them were specifically examined in this research: (1) that the process of feedback is instrumental in learning and (2) that participants will verbally participate in order to learn (see page 6). The findings of this study are relevant to a trainer's decision as to the validity of the two assumptions.

Beginning with the second assumption, trainers who utilize the laboratory learning method place a great deal of stock in an experience-followed-by-reflection model for learning. The experience-reflection model for learning assumes that participants will participate in the first place, receive feedback on participation in the second place, and experience learning in the process. The findings of this study demonstrate no direct significant relationship between the verbal output of a participant, the feedback (amount or kind he receives), and his learning. Even though learning was defined as an increase in the ability to give feedback effectively, it was not related to verbal participation.

The assumption that a participant will participate verbally in a group in order to learn is questionable. Stated as it is, it is an assumption about a participant's motivation, that is, what he will do to learn. Since the great majority of time spent in the T-groups observed in this study involved verbal exchange, and since that verbal exchange was not related

to learning to give feedback effectively, perhaps the kind of verbal participation which occurs needs a closer examination. Verbal participation (which is feedback) was investigated in this study. Implications of the findings are described below.

The findings relative to verbal output and feedback which have relevance for training are:

- As verbal output increases, feedback increases (p. 130).
- As verbal output increases, a person receives more positive emotional feedback and more negative cognitive feedback (p. 131).
- The more a person interacts in a T-group, the more his feedback to others will be both more negative and more positive (p. 131).

One implication of the findings on verbal output is that there is a need to plan opportunities for verbal output even more than is now the case. Planned events which loosen the T-group atmosphere and stimulate verbal exchange between participants are necessary. Whether they are called "warm-ups", paired-interviews, or exercises, it seems that verbal output needs to increase if feedback is expected to occur at a higher level output. Long silences or confused beginnings of T-group sessions add up to wasted time if verbal output is blocked.

Another implication of these findings on verbal output for training groups is that they need to realize that a norm is being established by the kind of feedback being exchanged. One finding was that positive emotional feedback received increased with higher verbal output. Another finding was that negative cognitive feedback received and given also increased

with higher verbal output. Was it the result of trainers affirming verbal output per se, then cognitively and negatively assessing specific verbal behavior? If so, trainers need to acknowledge to participants their value-bias that verbal output is a "good" and a trainer behavior-bias that their observations of the behavior of members will tend to point to the members' problem behavior, not their effective actions.

It is the author's opinion that T-groups need to practive and sanction a balance in the feedback process of negative and positive reinforcement in response to verbal output of participants. The finding seems to indicate a favoring of positive emotional and negative cognitive. The neglect of negative emotional and positive cognitive robs the feedback process of half of its potency.

The finding that feedback output is both more negative and more positive as verbal output increases implies that the quality (negative and positive) expression of feedback reaction by T-group participants is balanced. However, the finding noted in the above paragraph demonstrates how the more-positive feedback is emotional feedback and the more-negative feedback is cognitive. Specially designed events need to be provided which implement the exchange of negative emotional reactions and positive cognitive respenses when a T-group is not expressing that kind of feedback.

In this study the verbal output that was categorized as feedback was closely examined. The findings are that both the

feedback received and given was related to the amount of verbal output of a participant. One implication of this finding for training is that when two persons exchange verbal output due to interpersonal factors in the situation, the trainer should encourage the verbal output on the assumption that feedback will flow both directions as verbal output increases. Too often T-group members become preoccupied with what is not happening in a T-group, i.e. the quiet members, and do not postively reinforce relationships which have already emerged. Encouraging already active participants will help the feedback process.

The other assumption about training which trainers make who utilize the laboratory learning process is: that the process of feedback is instrumental in learning.

Learning to give effective emotional feedback was found to be related to the following feedback process variables: (1) the emotional feedback received that was timely and non-judgmental, (2) the amount of total feedback a person gives, (3) the amount of emotional and/or cognitive feedback that he gives which is specific (related to behavior), and (4) the degree to which the feedback received is positive.

The only feedback process variable to which learning to give effective cognitive feedback was significantly related was cognitive feedback given which was specific.

It was a stated learning goal in the training laboratory from which the sample used for this investigation was obtained that participants "learn to give and receive emotional and

cognitive feedback." The feedback process was utilized by the groups to accomplish that goal. A theory presentation on feedback (Appendix I) was given to help the T-groups implement the feedback process.

The findings of this study support the assumption that feedback is instrumental in learning. One implication of this finding is that training groups need even more help than is usually provided in learning the skill of giving and receiving feedback.

It is the experience of the author that feedback giving is modeled by trainers, but seldom is the feedback which is exchanged between trainers and group members and group members with group members evaluated systematically as to whether it meets the criteria of effective feedback. Also there tends to be an over-balanced emphasis in T-groups on learning to give emotional feedback (demonstrated in the findings of this study). In short, trainers need to assess their own feedback output in terms of the criteria they present in theory presentations on feedback; and to develop clearer, sharper, operational definitions of effective feedback to be utilized continuously in the T-group in order to maximize the learning potential of the feedback process.

The Feedback Process Analysis presented in this paper is an illustration of the way the feedback process analysis can be systematically used. It provides a set of categories and criteria with which the feedback process in a T-group could be observed, interpreted, and evaluated. It involves three criteria, instead

of seven or eight as most feedback "theories" suggest. It can be easily learned because the categories and criteria are operationally defined. Training groups could divide the categories and criteria among several observers until group members were familiar with the whole model. In the process of using the Feedback Process Analysis and reporting the observations, group members could learn how to give feedback more effectively.

The finding that learning to give effective cognitive feedback occurred in the sample groups for this study, but that the learning was significantly related to only one feedback process variable implies that learning occurs in T-groups even though it is not verbally identified in the group's interaction process. The stress in these groups in this study was on expressing emotional reactions. Cognitive reactions were given in the groups, but not identified or positively reinforced. In terms of designing a laboratory, this finding implies that learning goals for a laboratory should be those which the groups can and will work on realistically. It is the author's hunch that even though learning to give cognitive feedback occurred in this study, the learning is lost to the participants because it was not verbally linked into the feedback process of the group in the same way learning to give emotional feedback was. It would be more effective if training laboratories had fewer learning goals, but with operational criteria for measurement and clear intentions on the part of trainers and group members to assess the evolving experience on the basis of the goals.

Another implication of the findings on learning in this study is that it is not clearly understood as to what kind of feedback is most helpful to maximize a particular kind of learning. A model for which kind of feedback (cognitive or emotional, negative or positive) works best with particular learning goals needs to be developed.

The finding that learning to give emotional feedback effectively was significantly correlated with positive feedback received implies that groups need to utilize positive reinforcement in order to increase learning. There is a tendency in training to focus on "what is not happening in a group". This tendency results in a high amount of negative feedback output (in this study there was a mean difference of 16.50 which was in favor of negative cognitive output). Training groups must begin to affirm positively examples of behavior which represent attempts by group members to accomplish the learning goals. Even in the groups studied for this research project, positive feedback was not utilized systematically.

Other findings of this study regarding the quality (negative or positive) of feedback indicate a different response to emotional feedback output than to cognitive feedback output (p. 136). Without reviewing the specific relationships, the findings on the quality of feedback suggest that there was no pattern or design to the kind of feedback sanctioned by the T-groups, positive or negative. The relationships between emotional and cognitive (input and output) with negative and positive quality suggest a jumble of correlations.

An implication of this finding for trainers is that there is need to develop a model regarding the amount of each of the two types (positive and negative) of feedback that encourages optimal learning. Also an effective schedule for reinforcement needs to be developed. Presently T-groups are functioning intuitively and emotionally, and not systematically utilizing either negative or positive feedback or both to maximize learning in T-groups.

The last finding of interest is regarding the feedback that is group-oriented. As cognitive feedback input increased to persons, their cognitive feedback outputs to the whole group increased. The content of group-directed feedback was usually an observation of or a reaction to group behavior instead of to individual behavior. This finding has implication for trainers, especially those engaged in training intended to help participants understand and participate more effectively in the developmental processes of a small group, an organization, or a community. Cognitive feedback to participants will more likely elicit group-directed feedback output than emotional feedback input.

In summary, the implications of the findings of this study for training that uses the laboratory learning process are reflected in the following observations:

- that the assumption that the group participants are motivated to verbally participate in order to learn is questionable.

- that T-groups need to more clearly demonstrate and positively reinforce feedback reactions if it is the design that group members learn to express them.
- that learning goals in training laboratories need to be behaviorally and operationally described in order that training designs may more precisely be directed toward them.
- that the feedback process must be more clearly described and defined in training and that practice in giving feedback must be continuously evaluated by clear criteria during training events.
- that verbal output by participants needs to be encouraged and positively reinforced.
- that T-groups must attempt to utilize all four kinds of feedback, cognitive and emotional, both positive and negative. A model for which kind is best for what learning goal needs to be developed so that feedback and reinforcement is systematic.
- that verbal exchanges between participants in which feedback emerges need to be positively reinforced since feedback input and output are related significantly and are related to learning.

Future Research

This investigation raises many questions about the relationship of verbal output, feedback, and learning in a T-group. Further research should clarify some of the questions

and further enhance our understanding of the process and outcomes of the laboratory learning process. The following questions suggest some of the directions future research might take:

1. Is verbal output related to non-behavioral learning? Are there any behavioral learning goals of sensitivity training related to verbal output? What factors influence verbal output in a T-group?
2. Does the pattern of the feedback process resemble the interaction process? Are factors such as status, power, interpersonal attraction, and similarity related to the feedback process? How does the ratio of feedback output and input compare with the ratio of verbal output and input? What factors influence the cognitive feedback exchange process?
3. What is the relationship of the quality of feedback to learning in a T-group? Does negative feedback have the same consequences in the laboratory learning process as negative reinforcement in other types of learning? What are the consequences of different kinds of reinforcement schedules in the laboratory learning process?
4. Does the relationship of cognitive and emotional feedback input favor cognitive or emotional feedback in a T-group? If so, why? What factors influence which of these two kinds of feedback predominate in a given situation?

5. Is there a relationship between verbal and non-verbal expressions of feedback? What happens to feedback when these two types of expression are incongruent on a particular feedback output?
6. Can the relationships between verbal output and feedback supported by this study be demonstrated in non-laboratory learning groups?

Concluding Remarks

This investigation has attempted to explore the relationships between verbal output, the feedback process, and learning in the laboratory learning process of a T-group. Although no relationship was substantiated between verbal output and learning, several significant relationships are supported by the evidence between verbal output and the feedback process, and between the feedback process and learning.

The laboratory learning process utilizes feedback to help the T-group participant identify ineffective consequences of his behavior and to sustain productive group participation. In most laboratories attention is paid to the importance of the feedback process; however, very little attention is given to the amount of verbal output by the participant or its subsequent influence on the feedback process. The theoretical assumption of the laboratory learning process is that feedback is related to learning and change. It will enhance training when more attention is devoted in training to eliciting the

active verbal participation of all of the members of a T-group so that the feedback process may be more effectly stimulated and used to maximize learning.

APPENDICES

APPENDIX I

FEEDBACK THEORY
(Lecture Notes)

Definition:

communication to another person or group about individual or group behavior. It can be verbal, non-verbal, emotional, cognitive or any combination of the four.

Types:

1. Intrapersonal--within me, where I am, emotionally and cognitively
2. Interpersonal--between persons, what I experience happening in our relationship
3. Intragroup--within a group, what I see happening in our group
4. Intragroup--between groups, what I see happening

Criteria for constructive feedback:

1. Descriptive, not judgmental or "psyching out"
2. Specific, clear, not "generalizing"
3. Timely and applicable to the moment given as close to the behavior as possible
4. Usable, person or group to whom it is directed can do something about the behavior
5. Heard, given at a time of readiness of person or group receiving
6. Solicited, not imposed, can be cut off
7. Checked out, with receiver to insure clear communication, to verify with others
8. Non-threatening, given in a supportive, helpful atmosphere
9. Appropriate, takes into consideration the needs of receiver and the giver of the feedback

APPENDIX II

Group Perception Inventory Instrument

INSTRUCTIONS

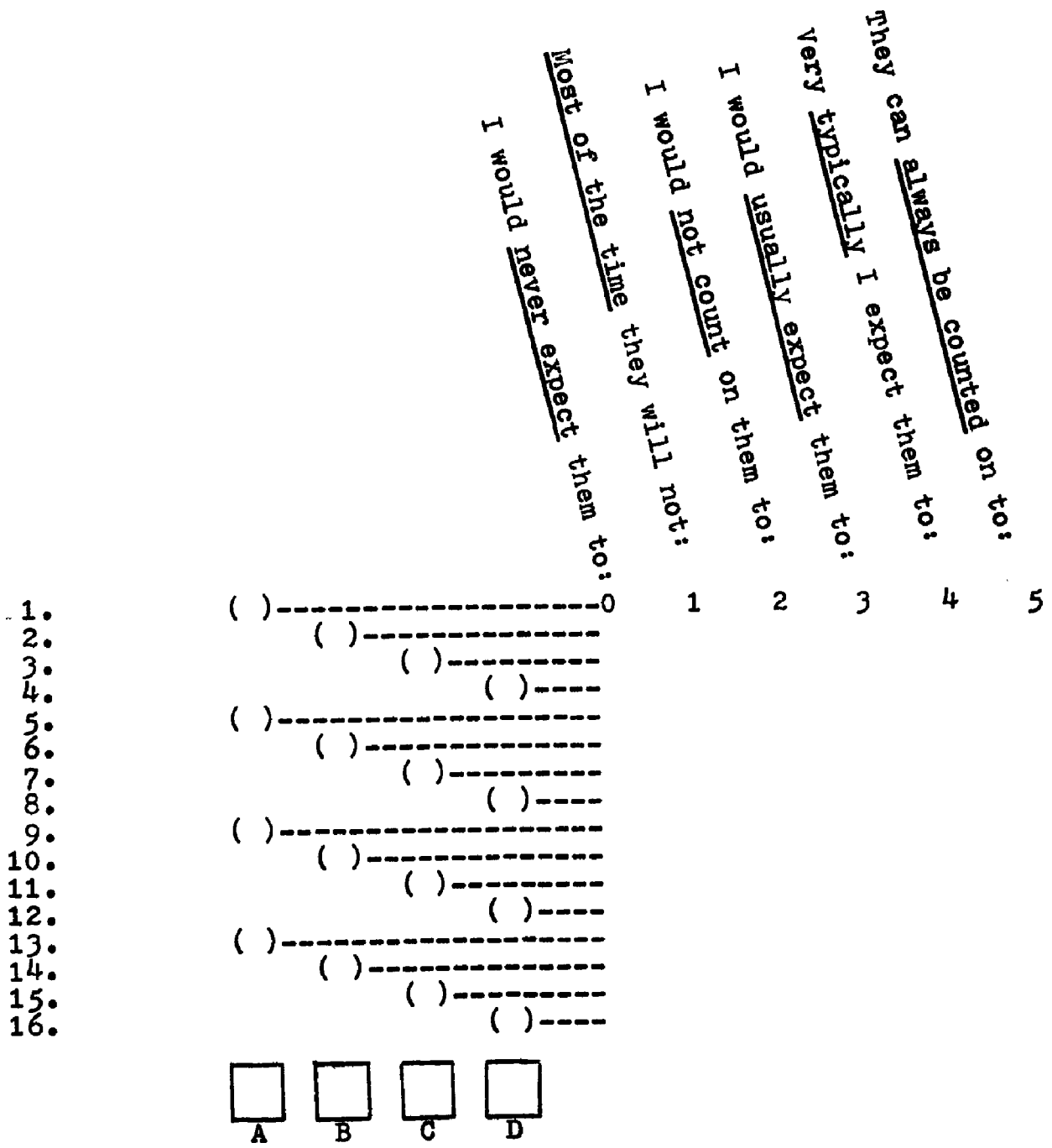
This questionnaire tries to get at how you think the other members of your group react to you as a person. Below are a series of statements, and then to the left of each statement is a set of numbers; each number represents a different answer. Please read each statement and then circle the number to the left of that statement that indicates where you thin most of your other class members are regarding that statement. One caution: the numbers for the answers are reversed on different questions (0 to 5 and 5 to 0), so be certain that the number you circle is always in the column that carries the answer (diagonal phrases on top) you intend. Thank you very much.

Statements

1. level with me.
2. get the drift of what I am trying to say.
3. include me in what's going on.
4. accept me for what I am.
5. feel free to let me know when I "bug" them.
6. perceive what kind of person I really am.
7. be interested in me.
8. act "judgmental" with me.
9. keep things to themselves to spare my feelings.
10. misconstrue things I say or do.
11. interrupt or ignore my comments.
12. ridicule me or disapprove if I show my peculiarities.
13. be completely frank with me.
14. recognize readily when something is bothering me.
15. respect me as person apart from my skills or status.
16. provide an atmosphere where I can be myself.

Group Perception Inventory Instrument (Cont.)

Item Number	Scale



Legend:
A. Genuineness of the group toward a a person
B. Understanding by the group of a person
C. Acceptance by the group of a person
D. Valuing by the group of a person

APPENDIX III

Helpful Information For the Academy

Please answer the following questions in order to help the Academy plan for the future:

Name_____ Age_____

Offices held in state and/or district and/or local levels of the church: _____
_____
_____
_____
_____
_____

Present employment_____

Salary_____

Educational Background: High School_____
College _____
Graduate School_____

Roommate at the Academy_____

How satisfying has the Academy been for you in terms of learning:

Very Satisfying / Satisfying / Not at all Satisfying

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