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A Programmed Instrument for Introducing Self Assessment and the Flanders Verbal Interaction Analysis System

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A PROGRAMMED INSTRUMENT FOR INTRODUCING SELF ASSESSMENT AND THE FLANDERS VERBAL INTERACTION ANALYSIS SYSTEM

by

Joseph James Walker

A Dissertation Presented to the Faculty of the Graduate School, Loyola University in Partial Fulfillment of the Requirements for the Degree Doctor of Education
Joseph J. Walker was born and raised in Oak Park, Illinois. After receiving a Bachelor of Science degree from DePaul University, Chicago, Illinois, the writer pursued graduate study at Loyola University in Chicago and received a Master's degree in Education. Mr. Walker has served as an elementary school teacher, principal, state supervisor, and assistant director of the Illinois Gifted Program.
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To those people who participated in the study, the writer expresses grateful appreciation for their willing cooperation and courtesy during the course of the experiment.

To the people I love, my Mom, Dad, Aunt Sis, Gram and Sher -THANK YOU!
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CHAPTER I

STATEMENT OF PROBLEM

Educators today are very much concerned with innovations in education. Terms such as open classroom, team teaching, nongraded, and self-assessment continue to be used in the writing and speaking of educational leaders. A wide gap, however, exists between the generation of ideas and the implementation of these ideas. Unless teachers have the opportunity to become familiar with and actually practice these innovations, all of the written and spoken words of the experts are wasted.

Methods must be developed to disseminate information to teachers giving them practice in adapting these innovations to their own school situation. We cannot expect teachers to change just because they have read about an exciting development in an educational journal. We must provide all of the help necessary to bring about a complete and viable change.

As Richard Carlson tells us: "In spite of all of the current activity, it seems fair to say that there is quite widespread pessimism about the ability of public schools to make rapid and adequate adaptation to our fast changing times. I am sure you have heard many times Paul Mort's fully publicized finding that it takes 50 years for the complete diffusion of an educational innovation which is
destined to be fully accepted. I am sure, too, that you are well aware of the generalization that public educational institutions are painfully slow to change. You have, no doubt, marveled, as I have, at the tremendous change facility of other sections of our work world such as agriculture and medicine. Evidence of the ability and enterprises to change is all around us and constantly forces its way to our attention."  

The reasons for teacher resistance to change are many. Individuals perceive change differently. Some perceive it as a threat to security. Change also meets strong resistance when it is accompanied by an unnecessary amount of pressure. Other causes of resistance to change are brought about by the change being perceived as being made for personal reward or because social interaction is neglected due to a preoccupation with technical problems and methods.  

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1 Richard O. Carlson, "Barriers to Change in the Public Schools", Change Process In The Public Schools. (Center for Advanced Study to Educational Administration, Copyright 1965 by the University of Oregon, Eugene, Oregon).

Despite this resistance, change is necessary. And the determination of the most effective strategies to improve teaching performances is a matter of high priority in the field of education.³

An understanding of oneself in the role of teacher is essential. This understanding can only come about through an introspective examination of the self which is presented to the students. The matter involves taking a look at oneself, seeing how one behaves, how one interacts, and how one influences other people.

This introspection must be made in the light of the objectives that the teacher wishes to meet in the education of the students. He must ask himself if his particular behaviors are leading him to the goals he wishes to attain in the classroom. This question may be answered with a careful self-assessment of himself and his classroom presentation.⁴

It is important to realize that many of the influences that the teacher exerts over his students are often subtle and not directly intended. As the recognized leader of the group, his behavior is carefully, though sometimes unconsciously, registered. The teacher must recognize that his major

responsibility in the classroom is to guide his students' learning activities. Hence, he must be attuned to the nature of his interaction with his students on both an individual and a group level if he is to faithfully adjust his activities to best enhance the learning process.

But how much knowledge does he have about the methods of influence he is using? How much does he know about how pupils perceive his behavior? And how much control is he able to exert over his behavior in the classroom? By studying his own behavior in some systematic, objective manner, the teacher may gain further insight into his own pattern of influence. As he gains insight into his behavior, he may decide that he wants to change his behavior either to achieve what he had not been able to achieve in the past, or to achieve some new goal that he has chosen in the process of gaining new insights into the learning process.5

As Edmund Amidon states, "These are exciting times for those interested in studying the dynamics of instruction and in applying the knowledge gained from their study to the training of teachers and the improvement of instruction. Recent developments in techniques for classification and analysis of the

instructional language of the classroom have made possible research on instruction and innovations in the training and supervision of teachers which just a few years ago were not even considered by most educational researchers, teacher educators, and instructional leaders.

Of the recently developed systems for analyzing the instructional process interaction analysis is the one that is currently best known and most widely used. 6

Amidon further points out: "Those who have worked in a supervisory relationship with either student teachers or in-service teachers are aware of the difficulties involved in helping teachers become aware of and improve their teaching. For a teacher to improve his teaching, three factors should probably be present: (a) the teacher should want to improve, (b) the teacher should have a model of the kind of teaching behavior that he wants to develop and (c) the teacher should get feedback regarding his progress toward the development of those teaching behaviors which he conceptualized as his goal. Research on the training of teachers that has involved the use of interaction analysis has indicated that the second and third conditions necessary for change mentioned above are

produced by interaction analysis. Not only does the category system help teachers conceptualize the often abstract and nebulous phenomenon of patterns of verbal interaction, but in addition when used as an observational system, interaction analysis provides the teacher with a means for receiving immediate feedback regarding his verbal teaching behavior.\textsuperscript{7}

Ernest R. House in a recent study of teacher success in implementing innovative programs to meet the needs of gifted children in Illinois concluded that, in the better programs, the director selects the teachers because they are change-minded. Selecting teachers because they volunteer, for perceived competence, previous training, or experience are of little or no consequence to teacher success. Some types of training, however, can increase the possibility of success in the classroom. Self-assessment procedures seem to be particularly effective.\textsuperscript{8}

During the school year 1970-1971, 67 school districts in northern Illinois were visited. Of these 67 school districts, 24 of them had personnel who were slightly knowledgeable about the concept of self-assessment techniques. Thirteen of these

\textsuperscript{7} Ibid., p.252.

24 districts had personnel who had actively attempted to use self-assessment techniques in classroom observation. The primary reason given for the lack of use of self-assessment techniques was the scarcity of trainers adequately skilled in these techniques to instruct teachers in their use. Although some universities are providing excellent training in this area, not enough is being done to make an impact on increased teacher self-assessment. Consultant availability for field work also is extremely limited. There is a need for some method of self-instruction to familiarize teachers with basic self-assessment techniques. This need follows a pattern that has been observed for the past several years in the field.

II. Development and Theory of Self-assessment Techniques

Interaction analysis systems are "shorthand" methods for collecting observable objective data about the way people talk and act. They make possible a relatively simple record of what is happening but they do not record what is said. Fifty-plus interaction analysis systems have been developed to date. They differ from each other in a variety of ways, but all of them code some behavior. These systems are made up of sets of categories of behaviors. Typical categories involved in these interaction analyses are lecturing, giving opinions, asking questions, criticizing and praising. Most of these systems
can be used with any subject matter or grade level. They are concerned with how teaching and learning takes place.

Classroom verbal interaction is a complex problem process and no one category system measures all of the important aspects which are important to people observing interaction in the classroom - the "cognitive" and "affective" domains.

The cognitive systems deal with the thinking process. Cognitive system categories differentiate between kinds of teacher information, teacher questions, or pupil responses.

The affective systems deal with the emotional climate of the classroom by coding how the teacher reacts to the feelings, ideas, work efforts or actions of the pupil.

If the interaction system, then, is primarily concerned with measuring the thought process of the classroom, it is considered cognitive. If it is primarily concerned with emotional climate, it is affective.9

Teachers, in years past, did not have empirically verified instructional theory to act as a basis for their behavior in the classroom. Perceptive teachers, however, sensed the critical dimension of quality and quantity teacher-pupil interaction in effective classroom teaching. In the past, without

a way of objectively describing the classroom interaction, teachers have had no way of classifying their instructional behavior, the classroom climate, and the effect of this climate on student achievement and attitudes. 10

H. H. Anderson was one of the first educational researchers to become interested in the analysis of classroom behavior. In his paper "The Measurement of Domination and of Socially Integrative Behavior in Teachers' Contacts with Children", Anderson describes his classic study in which he assessed the integrative and dominative behavior of teachers in their contacts with children. The ideas he presents on basic categories of integration are forebearers of Flanders' concepts of direct and indirect influences. 11

Lewin, Lippitt and White compared the effects of autocratic-democratic leadership behavior on children's groups. In "Patterns of Aggressive Behavior in Experimentally Created Social Climates", they present the results of research on group climate that supports the findings of H.H. Anderson. 12

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10 Amidon-Hough, op. cit., pg. 2


John Whithall developed a technique for assessing the social-emotional climate in the classroom by categorizing teacher statements contained in typescripts made from audio records of class sessions. Whithall was the first of the early researchers to use a category system for classifying teacher statements in the measurement of classroom interaction. His technique was objective, reliable, and valid and his categories are, in some ways, similar to those contained in the Flanders system. Whithall contributed the support that a category system can be utilized to assess and describe classroom climate.

Cogan in his analysis of perceptions that students have of their teachers indicate that a relationship does exist between the way students perceive a teacher and the amount of self-initiated work done by the students. His measures of teacher behavior and pupil productivity are helpful in developing measures of teacher competence. They also aid in the formulation of a more adequate theory of the teaching-learning process.


In their article "Phases in Group Problem-Solving", Robert F. Bales and Fred L. Strodtbeck describe a set of conditions which are characteristic of small groups dealing with analysis and planning problems in seeking a group decision. They used a system of Interaction Process Analysis in determining and analyzing phases in group problem solving. Bales study of the relationship between group member behavior and their productivity contributed greatly to the development of a classroom climate theory.\(^{15}\)

Interaction analysis is a technique for recording qualitative and quantitative dimensions of teacher verbal behavior in the classroom. Interaction analysis as an observational technique for the classroom was developed by Flanders and was designed to test the effect of social and emotional climate on student attitudes and learning.\(^{16}\)

III. The Flanders Verbal Interaction Analysis System.

The Flanders System of Interaction Analysis is the most widely used classroom observation system and contains ten categories. The Flanders System has been used in research


\(^{16}\)Amidon-Hough, op. cit., p. 2
of descriptive studies in which various teacher behaviors were correlated to pupil output measures, and in determining what teacher behaviors relate to various kinds of pupil growth. In general, the results of these studies are similar in that indirect teaching relates more than direct teaching to positive pupil attitudes, to pupil cognitive growth as measured by achievement tests, and to I.G. scores in primary grades. The single most powerful predictor of pupil cognitive growth appears to be the teacher's accepting pupil's ideas on which to build. The results of the field and experimental studies are similar in that the more the teacher accepts and encourages pupils in contrast to directing or criticizing them the more pupils seem to learn and the better they like it. The ten categories of the Flanders System are:

1. Accepts Feeling.
2. Praises or Encourages.
3. Accepts or Uses Student Ideas.
4. Asks Questions.
5. Lecturing.
7. Criticizing or Justifying Authority.
8. Student Talk-Response.
9. Student Talk-Initiation.
10. Silence or Confusion.

The Flanders System is primarily interested in analyzing teacher influence patterns. The purpose is to record a series

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17 Simon-Boyer, op. cit., Chapt. 5, pp.3-5.
of acts in terms of predetermined concepts of teacher control of student freedom of action. The Flanders System is interested in distinguishing those teacher acts that increase student freedom of action and recording them. This system is concerned with verbal behavior under the assumption that the verbal behavior of an individual is an adequate sample of his total behavior. It is assumed that teacher statements in the classroom are consistent with his nonverbal gestures.18

A thorough knowledge of the ten categories of the Flanders Interaction Analysis System is a basis for the employment of this technique for analyzing teacher-pupil interaction.19

There is a definite need for a method of spreading information about the basic concepts of self-assessment and of familiarizing teachers with verbal interaction.

The most widely used method, up to this time, is the Amidon and Flanders Book, The Role of the Teacher in The Classroom, used in a self-teaching capacity. This need might also be answered by a programmed instrument that will serve as a self-instructor to the teachers concerned with improving their teaching abilities and will teach these concepts more

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19Amidon-Flanders, op. cit., pg. 16.
successfully, at a self imposed rate, than will the Amidon and Flanders book.

IV. Development and Theory of Programmed Instruction.

Systematic arrangement of materials to be learned can be traced back to Socrates' style of questioning, the catechetical instruction of the early Christian Church, and the early nineteenth-century interest in the psychology of learning. Programmed instruction is based on a sequence of actions or experiences that follow a pre-set order and facilitate evaluation of learned knowledge, insights, or performance at a level of an established standard. Programmed instruction can be presented in written or printed form (a programmed text) as well as by machine. It is itself a systematic approach and does not depend upon a mechanical device to realize its purposes.

Programmed instruction can be implemented with or without the help of machines. It is a way of presenting what is to be learned in an orderly, psychologically defensible, sequential pattern.20

Lindvall and Bolvin describe the steps in applying programming principles in order to individualize instruction:

1. Specific definitions of objectives pupils are expected to achieve are developed.

2. Behavior that leads to terminal behaviors is analyzed and then sequenced in hierarchical order so that each builds on the preceding objective and is a prerequisite for those that follow.

3. The actual content of a program is prepared to consist of a sequence of learning tasks or activities (frames or steps) through which a student proceeds with little external assistance via small increments in learning that enable him to gain command of the terminal behavior.

4. A program is produced which permits a student to start at his present ability and achievement level of functioning.

5. The program is designed so that each pupil can proceed independently of others and learn at a rate best suited to his abilities and interest.

6. The program is designed to allow active involvement and response on the part of the pupil at each step in the learning sequence.

7. Immediate feedback to the student concerning adequacy of performance in each element in the program incorporated.

8. The program is subjected to continuous study by those responsible for it and modified regularly in the light of
available evidence concerning pupil performance.21

The novelty of programmed instruction has largely worn off but its expansion continues. More people are using programmed instruction now; more research workers are interested in developing its techniques; more practicing teachers and instructors are interested in applying these techniques to their own teaching activities. Even though changes of emphasis and redeployments of resources occur, the important anchor point of programming, the concept of a self-correcting system remains. Programmed instruction itself, like a self-correcting system, adapts itself to changing circumstances.22

In 1912, E.L. Thorndike, the noted educational psychologist, voiced the need for a new educational technology and described what we know as programmed instruction. Thorndike said, "If by a miracle of mechanical ingenuity, a book could be so arranged that only to him who had done what was directed on page one would page two become visible, and so on, much that now requires personal instruction could be managed by print".23


Today's procedures used in programmed instruction were initiated by other psychologists including Sidney L. Pressey of Ohio State University who, in 1915, first used a teaching machine. He and his students developed a variety of devices to provide immediate knowledge of results.24

Others including Briggs,25 Cantor,26 Jensen,27 and Little28 conducted studies supporting the premise that learning is made more efficient when the learner actively participates in the learning process and is provided with immediate feedback and reinforcement for his answers.

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28 J. K. Little, "Results of Use of Machines for Testing and for Drill Upon Learning in Educational Psychology." *Journal of Experimental Education, 3:45-49, 1934*.
During World War II, "phase check" programs were used for teaching job skills in the Air Force. This procedure guided the student in a step-by-step learning of a course requiring at its completion a demonstration of learned skills in the absence of the phase check. Lack of qualified instructors induced other branches of the United States Armed Forces to use self instructional devices in the training of personnel.

B. F. Skinner described applications of the principles of learning to education and the use of teaching machines. He designed a procedure that would be as efficient as possible based upon existing laboratory knowledge. His efforts resulted in the first complete programmed system.\(^{29}\)

Norman A. Crowder supported a modified use of the Pressey-type teaching machine in which the sequence of material may differ for each student. Every student answer determines what he will study or review next.\(^{30}\)


Robert Gagne\textsuperscript{31} and Arthur Lumsdaine\textsuperscript{32} reviewed some of the experimental evidence regarding the application of programmed principles to military training with Lumsdaine concentrating on the importance of reward or reinforcement as used in programmed instruction.

The programmed approach via the printed word has been developed with considerable success by Stolurow, Bergum, Homme, Glaser and Crowder, among others.\textsuperscript{33} This method projects a student into a prepared script which leads him step by step to the end of a learning sequence, although not without regressive detours in instances of error. Through the process of reading, responding, and then progressing, the student moves directionally through the various steps of a learning sequence.

Harry Silberman has predicted the effect of research in programmed instruction on education during the coming years. He foresees:

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1. More carefully written textbooks will be published.
2. Instruction will be contingent on frequent testing.
3. There will be a greater relative emphasis on development of instructional materials in contrast to the presentation of these materials.
4. A greater effort will be devoted to the maintenance or retention of learning in contrast to its acquisition.
5. A greater emphasis will be placed on specifying the behavioral goals of education. 34

The current trend in education substantiates the fact that Silberman's predictions are already a reality.

As Kenneth Komoski points out, "Programmed instruction is not a medium. It is a method of creating instructional materials that can use all media." 35

The greatest obstacle to the success of programmed learning is found in the difficulties of programming. Sequences must be worked out carefully following a progression toward the final right answer. 36

Clarence M. Williams observes that the best way to 'train' teachers is to practice what we preach. If we say that our goal in American education, is to create 'educated men' then we must turn out 'educated teachers'; however, he reiterates that we need something more, something approximating his redefinition of the goal; we must, therefore, seek ways to turn out self-educating teachers. They must be so interested in learning, students, and behavior that they will be as qualified as the psychology Ph.D. Moreover, they must have had many educational experiences themselves. They will then have developed an appreciation for the subject and for the associated process of acquiring it.

Williams feels we are on the threshold of seeing learning materials constructed in such a way as to ensure not only mastery of the particular set of concepts but also enjoyment and possibly even understanding of the process by the adult learner. As yet, few programs are available for the older learner; but of the few that exist, Williams says that some are thoroughly enjoyable and worthwhile.37

CHAPTER II
THE STUDY

1. Design Overview

Evaluation is the process of determining relative worth. This is usually done by comparing something of unknown value with an established standard. Through this comparison, one is enabled to investigate hypotheses which deal specifically with the examined items. With data from the comparison, one may determine whether the results of the comparison tend to prove or disprove the stated hypotheses. The best evaluations are based on quantitative data obtained from objective sources as opposed to descriptive or subjective judgments obtained directly from either the subjects under examination or the examiner. When one has successfully screened out the subjective element as much as possible and has attained a firm objective stance in the analysis, the evaluation will, ideally, be valid.¹

In this study, The Role of the Teacher in the Classroom, a book which had acted previously as the principle source of teacher acquaintance with techniques of self-assessment in the

classroom, served as the established standard. The "unknown," or "untested," in this study is *A Programmed Instrument for Introducing Self-Assessment and the Flanders Interaction Analysis System*. The programmed instrument contained the same subject matter as the book (self-assessment in the classroom) but presented it in a systematic, progressive manner which provided immediate feedback, reinforcement, and the opportunity to progress (learn) at a chosen speed.

The pre-post test was an objective instrument consisting of seventy-five items. It was administered to both the subjects using the *Role of the Teacher* and those using the programmed instrument. The test items were unambiguous and carefully selected. An attitudinal questionnaire was also included; it was useful in revealing the likes and dislikes of the subjects regarding their means of acquaintance with self-assessment techniques and the Flanders System.

II Stated Hypothesis

Over the centuries, individuals have been acquainted with new ideas primarily through the written and verbal word. Educators have sought new learning techniques to supplement or replace the "old standards". Teachers first became acquainted with certain techniques of self-assessment in the classroom through the written reports of Amidon and Flanders. It is
wondered if another learning approach might produce better results. The purpose of this study is to determine the effectiveness of a self-training procedure to familiarize teachers with the Flanders Verbal Interaction Analysis System compared with that of the Amidon and Flanders book.

If this study is to produce the information necessary to draw conclusions relating to the effectiveness of the programmed instrument as compared to the Amidon and Flanders book, certain hypotheses must be stated.

The first hypothesis, naturally, deals with a comparison of proficiency performance between those participants using the programmed instrument and those using the book. This first hypothesis is important in determining the extent of familiarization and understanding of the participants for self-assessment and the Flanders System. This input is basic to the study and it is imperative that information be collected to give evidence of the self-teaching superiority or lack of same between the two instruments.

Because the programmed instrument is being considered for wide dissemination pending its success compared with that of the currently most widely disseminated technique, *The Role of the Teacher in the Classroom*, as a self-learning device other information is necessary. The second hypothesis lists an interest in discovering if the programmed instrument is or is
not successful with only a select segment of the teaching population or if it includes, equally well, a wide and typical cross-section of teachers.

Even if the programmed instrument proves to be a more successful self-teaching device than the Amidon and Flanders book, it is important to the study to know how teachers feel about the process of self-assessment and the need and desire to concern themselves with developing a positive classroom atmosphere. If the participants learn the theory of self-assessment but reject the process and its usage in their own classroom situation, this information is important in deciding on the program's eventual wide dissemination.

These major considerations were given to the development of the study's hypotheses to include all of the information necessary to successfully complete the study.

The following null hypotheses are investigated:

1) Teachers using the programmed instrument to familiarize themselves with the Flanders System will not perform better on a post proficiency test than those using the Amidon and Flanders book, The Role of the Teacher in the Classroom.

2) The programmed instrument is not as effective a training device for those teachers with less than five years classroom experience as it is for those teachers with five or more years classroom experience.
3) The programmed instrument will not act as a stimulus for teachers to explore in greater depth and detail the potential contributions of self-assessment techniques to their classroom procedures.

4) The programmed instrument will not acquaint teachers with the emergence of an emphasis on affective education.

In addition to enabling one to investigate these hypotheses, the study also sought recommendations and suggestions for the future use of a programmed instrument as a teacher training device. Direct responses were requested.

The experimental design consisted of an experimental versus a control group in which both groups were tested and the results compared. The experimental group was given the programmed instrument as the familiarization tool for the Flanders Interaction Analysis System. The control group received Amidon and Flanders book *The Role of the Teacher in the Classroom* as their familiarization tool. A pre and post test was administered to both the experimental and the control groups. An attitudinal questionnaire also was administered to both groups upon termination of the project. The pre test-post test procedure was employed using the same instrument both times. Approximately three weeks elapsed between the pre and post test and after the distribution of
either the programmed instrument or The Role of the Teacher in the Classroom to the participants in the study. The means from both the pre and post test scores of the two groups were computed and their significance tested for by using a t test for significance at the .05 level.

An attitude questionnaire also was administered to both groups. These responses were compared for analysis of the other stated hypothesis.

III. Pre-Post Test Construct

The pre-post test was made up of seventy-five items. Sixty-five of the questions were of the short-answer variety, consisting of a question or statement which can be answered with a word or phrase. It requires the student to supply the answer. Short-answer items also permit the use of a large number of such questions in a test, thus obtaining an improved sampling without making the test too laborious for the student. Due to the nature of the first and second hypotheses, familiarization with the Flanders Verbal Interaction Analysis System, the short-answer item allowed teacher-student statements to be written asking for the correct numerical response corresponding to the written statements category according to the Flanders System. Thus, for every one of the sixty-five short-answer statements made, a numeral answer was sought. These items consisted
of a re-phrasing of statements or entirely original statements other than those found in either the programmed instrument or The Role of the Teacher in the Classroom. These items were particularly useful to the study for testing the knowledge of facts and specific information the participants had accumulated in the cognitive area relating to the Flanders Verbal Interaction Analysis System. Questions were so selected and stated in such a way that they could be answered with a numeral. The questions were selected and phrased so that only one or, in a few cases, a very small number of answers was correct.

Ten of the seventy-five questions in the pre-post test were of the multiple-choice type. The items consisted of two types. One type was an incomplete declarative sentence followed by a number of possible responses, one of which was correct. The second type was in the form of a question with the correct response supplying the answer. Although there was only one choice which was clearly best the alternatives were framed to make the other choices appear plausible to the uninformed. Each of the multiple-choice items had no more than one acceptable answer. The correct answer in the multiple-choice items was placed equally often in each possible position and the choices in each item came at the end of each statement. The number of choices in each of the multiple-choice items totaled four.
The pre-post test was arranged in order of difficulty, from the easiest to the most difficult. The first fifteen short-answer questions dealt only with the teacher talk categories (1-7) of the Flanders System. The following ten multiple-choice items dealt with an overview knowledge of all ten Flanders categories. And the last fifty short-answer items consisted of several statements written as dialog between teachers and students. The difficulty of individual test items was determined on the basis of responses by experienced persons in the field through interviews with the author and two collaborators. Directions for the test and its parts were carefully worked out in advance and incorporated in the test. It was made as nearly self-administering as possible.

A copy of the pre test-post test appears in the appendix.

IV. Attitudinal Questionnaire Construct

The attitude questionnaire consisted of twelve questions and a comment page. This questionnaire was administered to all of the participants. However, questions 10, 11 and 12 pertained directly to the participants' attitudes toward programmed instruction and the programmed instrument so only Group A (the group using the programmed instrument) was asked to respond to these three questions. The attitude questionnaire was administered to the participants immediately after they completed the post test.
Various items in the attitude questionnaire were necessary as feedback to accept or reject some of the study's hypothesis. Questions 4, 8 and 9 pertained directly to the third hypothesis, "The programmed instrument will not act as a stimulus for teachers to explore in greater depth and detail the potential contributions of self-assessment techniques to their classroom procedures".

Questions 1, 2, 3, 5, 6 and 7 pertained directly to hypothesis number four, "The programmed instrument does not acquaint teachers with the emergence of emphasis on affective education".

Questions 10, 11 and 12 of the attitude questionnaire related to, "Recommendations and suggestions for the further use of programmed instruction as a teacher training device".

Comments relating to any or all of the hypothesis were used as substantiating evidence.

The attitude questionnaire consisted of three basic kinds of items - checklist, rating scale and questionnaire.

The first two questions are of the descriptive checklist variety. Participants were asked to check (as many as necessary) the real and ideal areas of classroom verbal interaction pertaining to their own classroom. Each description that applied to the real and ideal situation was to be checked.
Questions three through nine were of the rating scale variety. The rating scale allowed for classification along a continuum of intensity of reactions. A Likert Method type of rating scale was used. There were five equidistant rating points arranged from the strongest positive reaction (yes!) to the strongest negative reaction (no!). Each scale was deemed as important as every other one in their use in making judgments about the hypothesis to which they related. The scales contained purely descriptive words at the points: yes!, probably, not sure, unlikely, and no!. The order of points on the scale was staggered from time to time to limit, as much as possible, the automatic circling of a particular response because it fell in a straight line. Each scale was gone over for a common interpretation of each point on each scale.

The questionnaire section of the instrument had two questions, questions 10 and 11, that required a yes or no answer and a few words of explanation. The last question, question 12, was left open for statements by the participants relating directly to the programmed instrument.

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It was hoped from these two instruments to acquire feedback at both the cognitive and affective level from these two instruments. The pre-post test acted as an indicator of cognitive knowledge gained by participants regarding the Flanders System. The attitude questionnaire indicated participants' feelings about the Flanders System, the affective domain and other points of interest to the study.

A copy of the attitude questionnaire appears in the appendix.
I. Development of the Programmed Instrument

The programmed instrument which was employed in the study was developed in response to the growing need to overcome teacher resistance to change and to the demand for modern, more interesting learning devices for individualized instruction. Its purpose was to introduce to teachers the concept of self-assessment and to familiarize them with the ten categories of the Flanders Verbal Interaction System in as interesting and enjoyable a way as possible.

First, specific objectives relating to the desired outcomes that the programmed instrument would produce were developed. The objectives were primarily concerned with overt ways for students to indicate their familiarization with the Flanders Verbal Interaction Analysis and to demonstrate their ability to defend their position. The conceptual sequence followed the known-to-unknown and general-to-specific format. The initial frames introduce a character with a general problem of concern to most people; proper physical appearance. This matter is then related to his concern with
his "teaching appearance" in the classroom and his need for self-assessment techniques to help him adjust his teaching style to meet his objectives and the needs of his students.

A central character (Sam) proceeds in a narrative fashion to introduce and explain one particularly useful and rather easy way to use the self-assessment tool he has "discovered" called the Flanders Verbal Interaction Analysis System. This is done, as is the entire program, in small learning steps with necessary reinforcement along the way.

The program was developed for teachers with little or no background in self-assessment techniques and the Flanders System and it does not assume any prior student knowledge regarding these areas. It was designed so that teachers may learn about the programmed topic independently and at their own rate of speed. The immediate feedback and reinforcement was handled, in the first several frames, in a humorous way so that the student would feel as relaxed and unthreatened as possible. The feedback and reinforcement is again handled as a kind of monolog-dialog situation between the central character (Sam) and the student.

This programmed instrument of 138 frames was devised employing both the Discrimination Frame Sequence and the
Constructed Response Frame techniques. The first eight frames dealt humorously with the concept of self-assessment by relating a known to an unknown to put the reader at ease. Frame nine through forty-four dealt with some basic concepts of self-assessment and frames forty-five through one hundred thirty-eight dealt with familiarization to the ten categories of the Flanders Verbal Interaction Analysis System.

II. Programmed Instrument Pilot Study

Initially, the program was tested on a one-to-one basis with four teachers. Each frame was included separately on an index card with the correct responses on the back. The teacher was given the first frame and asked to read it and announce his answer aloud. After each answer was given, it was confirmed and the reader proceeded to the next frame while the programmer recorded the previous reply. If a teacher could not answer or gave an incorrect response to a frame, the programmer discussed the frame with him to discover what led to the problem. Notes were kept while the one-to-one testing was conducted and all incorrect responses were recorded. After

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questioning, the events leading up to the mistake were noted. As the teacher progressed through the program frame by frame, frames were found which caused most respondents difficulty and these problems were eliminated in the rewriting of the program.

After the program had been tested several times on a one-to-one basis and revised, it was tried out on a group of seven teachers to determine how much of the material they had learned.

A pre-test was administered to determine the extent of the teacher's knowledge in the area of the Flanders Verbal Interaction Analysis System. After the pre-test consisting of twenty questions, the teachers were instructed in the mechanics of taking the program and asked to check the difficult frames as they worked through the program. As each of the seven participants completed the program, he was given a post-test and the results of the post-test indicated whether he learned what the program set out to teach him. The pre-test post-test scores were as follows:

<table>
<thead>
<tr>
<th>Participant</th>
<th>Number Correct on Pre-Test</th>
<th>Number Correct on Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>20</td>
</tr>
</tbody>
</table>

N=7

M=2.1

M=19.5
After grading each teacher's post-test, the program was discussed with the participant to ask about the checked frames that caused some difficulty. It was found that one frame caused three of the seven participants difficulty and another frame caused one participant difficulty. The frame causing difficulty for the three was revised by adding a stronger cue to initiate the correct response. The frame causing difficulty for the one participant was due to his misreading the frame and was not revised. The final version of the programmed instrument appears in the appendix.
CHAPTER IV
FIELD TEST OVERVIEW

I. Population

The programmed instrument, as a teacher training instrument, was now ready for use in a wider field of study and its effectiveness as a training tool was to be tested against the Amidon-Flanders book, *The Role of the Teacher in the Classroom*. This was done in order to determine which served as a better self-instructor for introducing the basic concepts of self-assessment and the Flanders Verbal Interaction Analysis System.

The population selected to participate in this study was made up of participants in four summer institutes sponsored by the Illinois Gifted Program Development Section and conducted during the summer of 1971 in Evergreen Park, Arlington Heights, Chicago, and Rockford, Illinois.

The main objectives of these institutes were:

1. To help teachers and supervisors identify talented and creative children and youth.
2. To provide basic information about the characteristics of gifted children and youth.
3. To provide assistance in planning curricular modifications specifically designed for the
gifted segment of the school population.

4. To provide further training in subject fields directly relevant to such curricular modification.

5. To provide observation and practice of teaching strategies particularly relevant to higher level thought processes.

6. To help teachers and supervisors gain understanding of emotional and educational needs of gifted children with emotional problems.

7. To provide assistance in planning curricular modifications and teaching techniques specifically designed for culturally disadvantaged children.

8. To provide methods of analysis behavior that hopefully will lead to a modification of the behavior and consequently a change in the role of the teacher in the classroom.¹

Each of the four summer institutes was four weeks in length. They began during the middle-end of June, 1971, and ran until the middle-end of July that same year. Stipends of $75.00 per week were available to the participants and, if desired, university credit was offered through the National College of Education in Evanston or Rockford College in Rockford.

Participants were selected on the basis of interest and desire to obtain intensive educational experiences created so that they could become knowledgeable about and proficient in guiding the education of gifted children.

There was no requirement placed on their grade level taught, number of years of experience, or advanced degrees, although a minimum of a bachelors degree was required. In none of the four summer institutes would the participants have been exposed to the Flanders Verbal Interaction System in any way unless they were a part of this study.

Forty-four participants volunteered to participate in the study. The volunteers came from several locations in northern Illinois.

The forty-four volunteers who participated in the study were made up of the following:
<table>
<thead>
<tr>
<th>Participant</th>
<th>Sex</th>
<th>Years Experience</th>
<th>Grade Level</th>
<th>Subject Areas</th>
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</thead>
<tbody>
<tr>
<td>*A-1</td>
<td>M</td>
<td>12</td>
<td>H.S.</td>
<td>Eng.</td>
</tr>
<tr>
<td>A-2</td>
<td>F</td>
<td>11 1/2</td>
<td>7-8</td>
<td>L.A. -S.S.</td>
</tr>
<tr>
<td>A-3</td>
<td>F</td>
<td>11</td>
<td>7-8</td>
<td>Math.</td>
</tr>
<tr>
<td>A-4</td>
<td>M</td>
<td>1</td>
<td>10</td>
<td>Hist.</td>
</tr>
<tr>
<td>A-5</td>
<td>M</td>
<td>15</td>
<td>5-10</td>
<td>Eng.-Rdg.</td>
</tr>
<tr>
<td>A-6</td>
<td>F</td>
<td>1</td>
<td>Fresh.</td>
<td>Eng.</td>
</tr>
<tr>
<td>A-7</td>
<td>F</td>
<td>1</td>
<td>Soph.</td>
<td>Wid. Hist.</td>
</tr>
<tr>
<td>A-8</td>
<td>M</td>
<td>13</td>
<td>6</td>
<td>A11</td>
</tr>
<tr>
<td>A-9</td>
<td>F</td>
<td>6</td>
<td>4-6</td>
<td>A11</td>
</tr>
<tr>
<td>A-10</td>
<td>M</td>
<td>2</td>
<td>9</td>
<td>Eng.</td>
</tr>
<tr>
<td>A-12</td>
<td>F</td>
<td>1</td>
<td>3</td>
<td>A11</td>
</tr>
<tr>
<td>A-13</td>
<td>F</td>
<td>5</td>
<td>K-5</td>
<td>A11</td>
</tr>
<tr>
<td>A-14</td>
<td>F</td>
<td>11</td>
<td>6</td>
<td>L.A.</td>
</tr>
<tr>
<td>A-15</td>
<td>F</td>
<td>11</td>
<td>2</td>
<td>A11</td>
</tr>
<tr>
<td>A-16</td>
<td>F</td>
<td>20</td>
<td>4</td>
<td>A11</td>
</tr>
<tr>
<td>A-17</td>
<td>F</td>
<td>3</td>
<td>3</td>
<td>Elem. Princ.</td>
</tr>
<tr>
<td>A-18</td>
<td>F</td>
<td>2</td>
<td>2-3</td>
<td>A11</td>
</tr>
<tr>
<td>A-19</td>
<td>F</td>
<td>4 1/2</td>
<td>1</td>
<td>A11</td>
</tr>
<tr>
<td>A-20</td>
<td>F</td>
<td>16</td>
<td>6</td>
<td>A11</td>
</tr>
<tr>
<td>A-21</td>
<td>M</td>
<td>2</td>
<td>7-8</td>
<td>Sci.</td>
</tr>
<tr>
<td>A-22</td>
<td>F</td>
<td>3</td>
<td>6</td>
<td>L.A. -Rdg.</td>
</tr>
</tbody>
</table>

Mean number of years experience = 6.9

*A represents the group using the programmed instrument.
<table>
<thead>
<tr>
<th>Participants</th>
<th>Sex</th>
<th>Years Experience</th>
<th>Grade Level</th>
<th>Subject Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>*B-1</td>
<td>M</td>
<td>1</td>
<td>4-8</td>
<td>All</td>
</tr>
<tr>
<td>B-2</td>
<td>F</td>
<td>12</td>
<td>4</td>
<td>All</td>
</tr>
<tr>
<td>B-3</td>
<td>F</td>
<td>3</td>
<td>6</td>
<td>All</td>
</tr>
<tr>
<td>B-4</td>
<td>F</td>
<td>14</td>
<td>8</td>
<td>L.A.</td>
</tr>
<tr>
<td>B-5</td>
<td>F</td>
<td>9</td>
<td>7</td>
<td>All</td>
</tr>
<tr>
<td>B-6</td>
<td>M</td>
<td>10</td>
<td>J.H.S.</td>
<td>S.S.</td>
</tr>
<tr>
<td>B-7</td>
<td>M</td>
<td>10</td>
<td>H.S.</td>
<td>Eng.</td>
</tr>
<tr>
<td>B-8</td>
<td>F</td>
<td>4</td>
<td>9</td>
<td>Eng.</td>
</tr>
<tr>
<td>B-10</td>
<td>F</td>
<td>8 1/2</td>
<td>4-6</td>
<td>All</td>
</tr>
<tr>
<td>B-11</td>
<td>F</td>
<td>4</td>
<td>H.S.</td>
<td>Eng. - Speech</td>
</tr>
<tr>
<td>B-12</td>
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<td>2 1/2</td>
<td>7-8</td>
<td>Eng.</td>
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<td>8</td>
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</tr>
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<td>All</td>
</tr>
<tr>
<td>B-16</td>
<td>F</td>
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</tr>
<tr>
<td>B-18</td>
<td>F</td>
<td>4 1/2</td>
<td>7-8</td>
<td>Eng. - Spell.</td>
</tr>
<tr>
<td>B-19</td>
<td>F</td>
<td>2 1/2</td>
<td>3</td>
<td>All</td>
</tr>
<tr>
<td>B-20</td>
<td>F</td>
<td>5</td>
<td>8</td>
<td>U.S. Hist.</td>
</tr>
<tr>
<td>B-22</td>
<td>F</td>
<td>3</td>
<td>5</td>
<td>All</td>
</tr>
</tbody>
</table>

Jean number of years experience = 6.9

*B represents the group using Amidon and Flanders *The Role of the Teacher in the Classroom.*

Thirteen of the participants were men and thirty-one were women. Their number of years classroom experience ranged from 1 year as a minimum to 20 years as a maximum. The mean number of years teaching experience for both A and B groups was 6.9 years. Seven of the total participating group were high school teachers, three were junior high school teachers, and one reading specialist divided his time between elementary and high school work. Two of the total group were
elementary school principals. The remaining thirty-one volunteers were elementary school teachers ranging in grade level from kindergarten through eighth grade. Twenty-three participants had five or less years experience in education while twenty-one participants had six or more years experience.

Both Groups A and B provided an excellent cross-section of educators in terms of sex, number of years classroom experience, grade level taught and subject area.

Each of the summer institute participants was involved in a four week study in the theory of teaching the gifted, background reading in content area, seminars, group involvement sessions, lectures and presentation from experts in the area of gifted education, and developing program to meet the needs of a specifically kind of gifted student. For instance, one participant might devote most of his time and interest to researching, learning about, and developing a program for a creatively gifted kind of student while another might concentrate on a program for academically talented high school mathematics students. It was felt by the institute directors that a process of analysis of teaching should not be too involved but was vitally necessary to promote the total growth of the participants. It was decided that the most advantageous way for participants to acquire this background in the process
of teaching analysis was for them to volunteer, if interested, for this study.

All participants in the four summer institutes were informed during their first day's session that they could participate in this study if desirous to do so. They were also informed that sometime during the first week a representative would visit the institute to begin the study.

II. Sampling Procedure

The forty-four named participants were assigned integers from one to forty-four. After the participants were listed, a table of random numbers was used to determine who in the group would receive the programmed instrument and who would receive The Role of the Teacher in the Classroom. Entering the table at row 24 columns 10 and 11 (because two digit integers were the largest in the study) and ascending the scale the first integer to appear between one and forty-four was assigned a programmed instrument, the second to appear was assigned a copy of The Role of the Teacher in the Classroom. This alternating pattern was used until all forty-four participants were accounted for. For instance, the fifth integer to appear

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in the scale in columns 10 and 11 ascending from row 24 that is between one and forty-four is 04. Therefore, the participant corresponding to the number four on the volunteer list was given a programmed instrument coded A-3. Later, when the materials were distributed the list of names was destroyed to maintain the guarantee of anonymity made to the volunteers. The letter-numeral coding replaced the participants' actual names.

III. Conduct of Study

As stated before, the participants in the study were from four summer institutes conducted in Evergreen Park, Arlington Heights, Chicago and Rockford, Illinois. The four-week Evergreen Park institute began on June 14, 1971 and ran through July 9, 1971. The pre-test was administered and materials were distributed to this group on June 18, 1971. The Post-test was administered on July 7, 1971.


The Chicago program ran from June 28, 1971 to July 23, 1971. Pre-test and materials distribution took place on July 1,

Each of the four groups had approximately three full weeks to study independently either the programmed instrument or The Role of the Teacher in the Classroom.

In no case was the study mentioned by the summer institute directors or support staff except for the announcement read to the participants offering them an opportunity to participate in a field study to gain input into the concept of self-assessment and the Flanders System of self-assessment.

The announcement read:

"Dear Director:

Please make available to any of your participants who wish, the opportunity to participate in an independent study project field test concerned with self-assessment and especially one particular method of self-assessment. This study will be conducted during the four weeks of your summer institute and will consist of a pre-test, distribution of materials, several weeks independent study time, post-test, and attitudinal questionnaire. The participants will remain anonymous.

Those who volunteer will receive more detail some time during the first week of your institute. I'll be calling you for the names of any volunteers.

Thank you for your cooperation."

Upon visiting each of the four summer institutes for the first time, the person administering the pre-test was introduced by each of the institute directors as, "Joe Walker, a doctoral student at Loyola University, who is conducting the
The doctoral student then took over the session following a script of prepared statements to be presented to each group. The script ran as follows:

Say: Thank you very much for inviting me to be here today and for volunteering to be a part of this study. As a subject for my dissertation, I am investigating the performance of two materials as independent study self-instructors for familiarization to the Flanders Verbal Interaction Analysis System. (pause)

Say: Some of you will be receiving the Amidon and Flanders book titled *The Role of the Teacher in the Classroom*, and others of you will receive a programmed instrument titled *A Programmed Instrument for Introducing Self-Assessment and the Flanders Interaction Analysis System*, to use as your self-instructional material.

Say: The procedure that will be followed is this:

**First:** All participants will take a pre-test to be administered today.

**Second:** After you have handed in your pre-test, you will receive one of the two aforementioned materials. The distribution of these materials has been pre-determined using the random sample method.
After all materials have been distributed to this group and your letter-code assigned to you, the name list will be destroyed to maintain anonymity.

Third: I will return in approximately three weeks, on (date), to administer a post-test and an attitudinal questionnaire to you participants.

Are there any questions?

(pause)

Say: You are about to take a pre-test on a self-assessment instrument called the Flanders Verbal Interaction Analysis System. This test is self-explanatory and if you do not know or are unsure of an answer, please guess. Be sure to fill in all of the answers.

Say: You will notice a letter-numeral at the top of your pre-test. When handing in your pre-test you will receive a material with a letter-numeral corresponding to this letter-numeral. This material will act as your self-instructor for the next several weeks. You may study it whenever and for as long as you deem necessary. Please do not exchange these materials with one another until after the post-test has been taken!

(pause)

Say: Please complete all of the background information requested on the tear sheet located at the upper left
hand corner of your pre-test and please remember your
letter-numeral for the remainder of this study!

Say: The pre-tests will now be distributed according to your
randomly selected letter-numeral. You have as much time
to complete the test as you feel necessary. When
finished hand the test in to me and you will receive your
material. There will be no questions answered during the
test.
(pause).

IV. Post-Test Procedure

Say: Begin.

The procedure script for the post-test is as follows:

Say: Approximately three weeks ago we met for a pre-test and
and the distribution of materials on self-assessment and
the Flanders Verbal Interaction Analysis System. From then
until now you have had the opportunity to study whichever
of the two materials you received.
(pause)

Say: You are now about to take a post-test on the Flanders
Verbal Interaction Analysis System. Upon completion of
the post-test you will receive an attitudinal question-
naire that you are asked to complete. All of you are
asked to complete questions one through nine on the
attitudinal questionnaire and to include any comments you desire on the comments page - the third sheet on the questionnaire.
(pause)

Say: Only those of you who had the programmed instrument (the blue covered booklet) for introducing self-assessment and the Flanders System are asked to complete questions ten, eleven and twelve on the attitudinal questionnaire.
(pause)

Say: You will receive the post-test and attitudinal questionnaire corresponding to your letter-numeral code. Please make sure that this letter-numeral is the same as that on your pre-test and study material. Upon handing in the post-test you will receive the attitudinal questionnaire.
(pause)

Say: You have as much time to complete the post-test as you feel necessary. The post-test is self-explanatory and no questions will be answered regarding it once it has begun. Thank you again for your cooperation. It is greatly appreciated.
(pause)

Say: Begin.
The person conducting the pre-test and post-test sessions was allowed as much time as the participants required to complete all of the necessary requirements of the study. The maximum time used for the pre-test session, including introduction and completion of the pre-tests and material distribution, was forty-eight minutes. The maximum time used for the post-test session, including completion of the attitudinal questionnaire, was seventy-two minutes.

V. Pre-post Test Overview

The pre-test, post-test approach was used as the procedure in collecting cognitive data. The test instrument consisted of seventy-five responses and the interval between pre and post tests was of adequate length with a provided interval of several weeks between testing.\(^3\) The participants were not informed that the same test would be administered as both the pre and post test.

When building the test items the following general principles of item construction were followed:

1.) Items were stated as clearly as possible. Specific and direct language was used in the items. Trick questions were avoided. Directions for taking the test were clear, complete and concise. All directions were included in the test so that once it started interruptions for further directions from the test administrator became unnecessary.

2.) Items were stated so that the student's achievement was measured rather than his ability to draw clues from the form or language used of each item.

3.) Items were stated so that scoring by experts would be in close agreement. The final score on the test depended as little as possible on interpretations peculiar to the scorer.  

Two experts in the area of self-assessment and the Flanders System collaborated with the author on the construction of the test and correcting key.

VI. Attitudinal Questionnaire Overview

The attitudinal questionnaire was devised to measure teacher attitudes regarding self-assessment, the Flanders System

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System, and programmed instruction. The questionnaire allowed for classification along a continuum of frequency of occurrence and intensity of reaction or behaviors. In attitude scales, the person doing the rating is the measuring instrument. The questionnaire had five equidistant rating points ranging from Yes! through probably, uncertain, unlikely and no!. Again, this questionnaire was carefully worked out, checked, tried out and revised in collaboration with two experts. It sought to answer the questions that the author wanted answered.
CHAPTER V
INTERPRETATION OF DATA

I. Interpretation of Pre-post Test Results

Two groups, each of twenty-two participants, were given a pre and post test on their knowledge of the Flanders Verbal Interaction Analysis System. Group A took the post-test approximately three weeks after the pre-test. Group A had used the programmed instrument, *A Programmed Instrument for Introducing Self-assessment and the Flanders Verbal Interaction Analysis System* as their familiarization tool. Group B used the Amidon and Flanders book *The Role of the Teacher in the Classroom* to familiarize them with the Flanders System. They also took the post-test approximately three weeks after taking the pre-test. The test-retest method was used.

The test consisted of seventy-five possible points. The results are summarized as follows:

<table>
<thead>
<tr>
<th></th>
<th>GROUP A</th>
<th>GROUP B</th>
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<tr>
<td>R</td>
<td>1-59</td>
<td>4-44</td>
</tr>
<tr>
<td>Md.</td>
<td>8.2</td>
<td>9.0</td>
</tr>
<tr>
<td>M</td>
<td>12.3</td>
<td>11.8</td>
</tr>
<tr>
<td>S.D.</td>
<td>8.5</td>
<td>11.8</td>
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II. Mean Comparisons

The mean and median scores are higher on Group A's post-test than on Group B's post-test. The mean score of Group A's post-test was 79% of the total possible score; the mean score of Group B's post-test was 59% of the total possible score. The means on both post-tests are considerably below both medians indicating that some very low scores pulled the mean down.

The highest score on Group A's post-test is slightly more than 1 S.D. above the mean while the lowest score is more than 4.5 S.D.'s below the mean indicating that most of the scores were relatively high and a few scores were very low. With Group B, the highest score was slightly more than 2 S.D.s above the mean and the lowest score more than 4.5 S.D.s below the mean; these facts, together with the smaller standard deviation, suggest that Group B's post-test scores tended to pile up closer to the median than was the case with Group A's post-test scores.

Because the performance being investigated is that of two groups taking the same test, a raw score of one group's
test is comparable to the same score with the other group.

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<tr>
<td>S.D.s</td>
<td>-4</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
<td>+4</td>
</tr>
</tbody>
</table>

GROUP A

GROUP B

III. Experimental and Control Group Design

The Pre Test-Post Test Control Group Design\(^1\) was used in this study. This design in which equivalent groups as achieved by randomization are employed takes this form:

\[ R_{01} X_{02} \]

\[ R_{03} X_{04} \]

\( R = \) random assignment to separate treatment groups.

\( O = \) some process of observation or measurement.

\( X = \) exposure of a group to an experimental variable or event.

In this study, the Rs are Groups A and B who were randomly selected for this study. The Os represent the pre-test and post-test. The X represents the exposure of the programmed instrument, the experimental variable, to Group A.

Eight different classes of extraneous variables are presented relevant to internal validity. If these variables are not controlled in the experimental design they might produce effects confounded with the effect of the experimental stimulus. These effects are:

1.) **History**, the specific events occurring between the first and second measurement in addition to the experimental variable.

2.) **Maturation**, processes within the respondents operating as function of time.

3.) **Testing**, the effects of taking a test upon the scores of a second testing.

4.) **Instrumentation**, in which changes in the instrument or observers produce measurement changes.

5.) **Statistical regression**, operating where groups have been selected on the basis of their extreme scores.

6.) Biases resulting in differential selection of respondents for the comparison groups.

7.) Experimental mortality, or differential loss of respondents from the comparison groups.

8.) Selection-maturation interaction, etc.²

²Ibid., p. 5.
These aforementioned factors are controlled in the Pre Test-Post Test Control Group Design. The History aspect is controlled in that the general historical events producing a difference in Group A would produce this same difference in Group B. Maturation and testing are controlled in that they should be manifested equally in both Group A and Group B. Instrumentation is easily controlled where the O, as in this study, is achieved by student responses to a fixed instrument such as a printed test. Regression is controlled as far as mean differences are concerned, no matter how extreme pre-test scores are, because both Groups A and B were randomly assigned prior to the pre-test from this same extreme pool. Selection is ruled out as an explanation of difference because randomization has assured group equality. Experimental mortality is not a feature of this study because the forty-four participants who began the study completed it. The interaction of these features is also controlled due to the internal control of each of the factors.  

IV. Test for Significance

The most widely used acceptable test for this type of study is to compute for each group, A and B, the pre test-post

3Ibid., pp. 13-17.
test gain scores and to compute a $t$ between experimental and control groups on these gain scores.\textsuperscript{4}

In all likelihood, whether there was a difference between the programmed instrument and \textit{The Role of the Teacher in the Classroom} or not the test scores for the two groups would have had different means. Thus, we wish to know if the difference in test values are attributable to a difference in materials or a chance fluctuation of sample means about some common mean. In order to determine if the means were significantly different from each other, we employ the strategy of testing the hypothesis, called the null hypothesis, that these means came from the same population. We test to see if the mean differences could be explained as chance fluctuation about a common mean by employing the $t$ test of the difference between sample means.\textsuperscript{5}

The null hypothesis as stated is, "Teachers using the programmed instrument for familiarization with the Flanders System will not perform better on a post proficiency test than those using \textit{The Role of the Teacher in the Classroom} for familiarization". If our $t$ test showed the probability that

\textsuperscript{4}Ibid., pp. 22-23.

sample means were fluctuating about a common mean to be quite low (below 5 chances in 100 or .05 where .00 means no possibility and 1.00 means absolute or 100% certainty), then the null hypothesis would be rejected.

The alternative hypothesis is, "the teachers using the programmed instrument for familiarization with the Flanders System will perform better on a post proficiency test than those using The Role of the Teacher in the Classroom for familiarization. If the null hypothesis is rejected, the alternative hypothesis will be accepted.

The pre-test mean for the group using the programmed instrument (Group A) was 12.2. The pre-test mean for the group using The Role of the Teacher in the Classroom was 12.0. The observed t of .07 indicates that there is no true difference between the pre-test means of groups A and B.

The post-test mean for Group A was 59.3. The post-test mean for Group B was 44.2. The t test result of 2.7 is significant at the .01 level. This means that in less than 1 out of every 100 times would these results occur by chance. Therefore there is a significant difference between Group A's post-test mean and Group B's post-test mean. The null hypothesis is rejected.
Group A using the programmed instrument had a mean average on the post-test of 59.3 which was 15.1 points higher than the mean average of 44.2 earned by Group B using The Role of the Teacher in the Classroom. Hence, a greater growth in familiarization with the Flanders System occurred for those using the programmed instrument (Group A) over those using the other device (Group B). Consequently, the study's alternative hypothesis that teachers using the programmed instrument for familiarization to the Flanders Verbal Interaction Analysis System will perform better on a post proficiency test than those using The Role of the Teacher in the Classroom for familiarization, is accepted.

V. Spearman Rank-Correlation Coefficient

The second null hypothesis under investigation was, "the programmed instrument is not as effective a training device for those teachers with less than five years classroom experience as those teachers with more than five years classroom experience".

Many variables or events in nature are related to each other. Such relationships are called correlations. If an increase in one variable coincides with an increase in another variable, the two variables have a positive correlation. When an increase in one variable coincides with a decrease in
another variable, the two variables have a negative correlation. There must be a common link between the sets of variables being correlated. In this study the same people are being studied insuring that common link.

The numerical measure of correlation used in this study was the Spearman rank-correlation coefficient between two sets of scores that formula for which is:

\[
s = 1 - \frac{6 \cdot \text{d}^2}{N^3 - N}
\]

The Spearman rank-correlation coefficient measures the degree to which the relationship between two variables can be represented. The Spearman rank-correlation coefficient takes on values from -1 to 1. A correlation of -1.00 is as high a correlation as 1.00. The algebraic sign (+ or -) of the correlation coefficient indicates a direction of the relationship (whether direct or inverse). Whether a correlation is considered high or not depends on what is being correlated. An over-all "rule of thumb" for judging correlation size is to consider .70 to 1.00 (either + or -) as a high correlation and .20 to .40 as a relatively low correlation.

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6 Amos, et al., op. cit., pp. 59-60


The Spearman rank-correlation coefficient acted as an index of relationship between the two variables; the number of years teaching experience and the trainee's post-test score. The resulting inverse relationship of -.33 between the variables indicates that people with less than five years of classroom experience profit slightly more from the programmed instrument than do those teachers with five or more years of classroom experience. But the -.33 inverse relationship is a low correlation and one can only conclude that the programmed instrument seems to hold as much value for teachers with five or more classroom experience as it does for those with less than five years experience. In this case, the null hypothesis must be accepted.

VI. Interpretation of Attitudinal Questionnaire

The group differences indicated by the compiled results of the attitudinal questionnaire seemed to encourage further use of the programmed instrument. Though the degree of enthusiasm varied amongst those in favor of the programmed instrument, there was, generally, a rather strong approval of it. It would seem favorable to continue its usage in place of the Amidon and Flanders book The Role of the Teacher in the Classroom.
Four items are worthy of mention; They will be discussed in the order of their appearance on the questionnaire. First, ten of the 22 participants in Group A saw themselves as emphasizing the acceptance of student feeling while only six of the 22 in Group B felt that they did the same. Second, 20 of the 22 participants in Group A wanted to be characterized as accepting student feeling. The same number in the group also wanted to accept and use student ideas. In contrast, 17 of Group B wanted to be characterized as accepting student feeling while 15 wanted to accept or use student ideas. Third, 6 of Group A said they would suggest the use of the Flanders System to other educators in their district, yet only one in Group B felt that he would encourage others to explore the Flanders System. Finally, the members of Group A who felt that they would further pursue the matter of self-assessment in the classroom on their own numbered 19 as compared to 15 from Group B.

VII. Percentage and Number of Responses

Questionnaire results should be reported in number and percent of respondents. The third stated null hypothesis of this dissertation is, "The programmed instrument will not act

\[\text{Guide to Assessment and Evaluation Procedures, (the New England Educational Assessment Project, October, 1966), pg. 21.}\]
as a stimulus for teachers to explore in greater depth and
detail the potential contributions of self-assessment techniques
to their classroom procedures". Questions 4, 8 and 9 were
devised specifically to attain information relating to this hypothesis.

Question 4 asked, "Will you make a tape of your classroom interaction and analyze it according to the Flanders System?" Four of the 22 in Group A responded "yes"; six responded "probably"; six "not sure"; three "unlikely" and three "no". Percentage wise this can be stated: 18.8% "yes"; 27% "probably"; 27% "not sure"; 13.6% unlikely" and 13.6% "no".

To Question 8, "Will you suggest the use of the Flanders System to other educators in your school district?", Group A responded in this way: six "yes"; five "probably"; six "not sure"; five "unlikely"; and zero "no". A percentage breakdown of Group A's responses to Question 8 is as follows: 27% "yes"; 23% "probably"; 27% "not sure"; 23% "unlikely" and 0% "no".

Question 9, "Will you investigate other methods of self-assessment for use in the classroom?" received the following responses from Group A: eight "yes"; eleven "probably"; one "not sure"; two "unlikely" and zero "no". These responses written as percentages of the total Group A are: 36% "yes" 50% "probably"; 4.6% "not sure"; 9.4% "unlikely" and 0% "no".

Group A's response to Question 4 shows about 46% of the
people will attempt to analyze their classroom interaction according to the Flanders System. Twenty-seven percent of the group will not attempt to Flanderize their classroom interaction; another 27% are undecided. This indicates a plurality of participants who state they will use or probably will use the Flanders System in their own classroom analysis compared with those who will not use or are unlikely to use this system. The rather large undecided group plays an important role in the final analysis of this question. Consequently, we see that at least a plurality of participants, at present, are favorable toward using the Flanders System in their classroom compared with those who are not.

Group A's response to Question 8 shows half of the participants favorable toward recommending the use of the Flanders System to other educators compared with slightly less than one quarter of them who are unfavorable. Of the one quarter who are unfavorable toward recommending the use of the Flanders System to other educators in their district, none of them stated a definite no. Again, as in Question 4, a portion of Group A (27%) is undecided. So, the undecided population will again have a direct effect on the final analysis of favorable or unfavorable response to Question 8. We may, however, say that a present half of Group A is favorable toward recommending the use of the Flanders System to other
educators in their school district compared with less than one quarter of the group who is unfavorable.

A total of 86% of Group A favorably responded to Question 9. This shows a positive plan on their part to investigate other methods of self-assessment for use in their classroom. Of this group 9.4% were slightly negative toward investigating other self-assessment methods although none of this group was definitely against it. Of Group A, 4.6% were undecided. We may say that there exists a strongly favorable indication that Group A's participants will investigate other methods of self-assessment for use in the classroom.

Relating Questions 4, 8 and 9 to the third hypothesis, it can be concluded that there is a strong positive indication that Group A will explore other self-assessment techniques for use in their classroom procedures and a slightly positive indication they will implement the Flanders System in their Classroom and their school district. Therefore, there is a positive indication that the programmed instrument acts as a stimulus for teachers to explore in greater depth and detail the potential contributions of self-assessment techniques to their classroom procedures. The null hypothesis is rejected.

The fourth hypothesis, "The programmed instrument does not acquaint teachers with the emergence of emphasis on affective education", is covered in Questions 1, 2, 3, 5, 6 and 7.
Question 1 asked respondents to categorize according to the Flanders System their own classroom interaction as it occurred in the past (real). In the area of Indirect Teacher Influence, 10 of Group A felt they would have a high percentage of response in the Accepts Feeling category; 12 in the Praises or Encourages category; 10 in the Accepts or uses Student Ideas categories; and 19 in the Asks Questions category.

In the Direct Teacher Influence area, 12 of Group A felt that they would be high in the Lecture category; 10 in Gives Directions; and 3 in the Criticizes or Justifies Authority category. Twelve respondents felt they would earn a high percentage of responses in the Student-Talk-Response category while 6 felt high in the category of Student Talk-Initiation. Three of Group A felt that in a real past performance analysis they would receive a high percentage of response in the Silence or Confusion category.

Question 2 asked participants to circle the Flanders System categories in which they would like the greatest activity in their own classroom verbal interaction (ideal). The total number of selections that they could make within the ten categories, as in Question 1, was unlimited. Twenty of the 22 people in Group A said they would like to have classroom verbal interaction in the Accepts Feeling category; 19 in the Praises or Encourages category; 20 in the Accepts or Uses
Student Ideas category; 13 in the Asks Questions category; and 19 respondents in the Student Talk-Initiation category. This is compared with 2 participants in Group A who wished more classroom verbal interaction in the Gives Directions category; 7 in the Student Talk-Response category; 2 in the Silence and Confusion category; and 0 respondents in neither the Lecture nor Criticizes or Justifies Authority categories.

This indicates that over 50% in all instances and up to 91% in some instances, the members of Group A would like to have classroom verbal interaction in the major area of Indirect Teacher Influence (categories 1, 2, 3 and 4) in their own classroom situation. Eighty-six percent of this group also wanted the students to imitate more of the class discussion and to present their own ideas in class. Those in Group A wishing an increase in the major area of Direct Teacher Influence ranged from 31% in the Student Talk-Response category to 0% in both the Lecture and the Criticizes or Justifies Authority categories. Nine of Group A would like an increase in the Silence or Confusion category.

It is evident the response from Group A regarding what the ideal verbal interaction situation in their classroom would be is heavily favorable toward the Indirect Teacher Influence and Student Talk-Initiation areas. It also becomes evident that in an analysis of their past verbal interaction
performance in the classroom (the real situation) Group A felt they were concentrating heavily on the Direct Teacher Influence and Student Talk-Response areas which show little or no concern with students attitudes and "feelings".

Due to Group A's response to Question 2 (ideal) which was strongly in favor of the areas of Indirect Teacher Influence and Student Talk-Initiation, we conclude that when we ask about developing classroom objectives to increase interaction in the categories circled in Question 2, the participants response refers to increasing interaction in the Indirect Teacher Influence and Student Talk-Initiation areas which concern themselves with student-teacher attitudes and "feelings".

Question 3, "Will you seek to develop classroom objectives that will increase interaction in the categories you circled in Question 2?", refers then, due to the respondents reaction to Question 2, to an increase in interaction in the Indirect Teacher influence and Student Talk-Initiation categories. Seventeen members of Group A responded "yes" and 5 members responded "probably" for a 100% total favorable response, 77% strongly favorable, to developing objectives that will increase interaction in the Indirect Teacher Influence and Student Talk-Initiation categories.

Question 5 asked of participants, "Will you be more aware of the Indirect Influence areas (Flanders categories 1
through 4) of Teacher Talk in developing your classroom objectives?" This question was devised to act as counter-check to Question 3's interpretation. Again as in Question 3, the results were favorable, 64% strongly favorable and 27% slightly favorable toward developing classroom objectives with an awareness toward the Indirect Teacher Talk Influence area.

Two participants in Group A were undecided about Question 5 and none of the group gave a negative response.

Question 6, "Will your classroom objectives contain more concentration on students' attitudes and feelings than in the past?" received a 77% "yes" and 23% "probably" response. This 100% positive response shows an intended greater concentration than before in the affective domain by Group A in developing their education objectives.

Question 7, although similar to Question 6, relates to the participants personal behavior plan for implementing effective objectives into their classroom situation. Question 7 asks, "Will you be more accepting of the feelings and attitudes of your students in the classroom?" Of Group A, 64% answered "yes" and 27% answered "probably". Nine percent were "not sure" while no respondents were neither slightly more definitely negative. Because of a total of 91% of the group were positive with a majority of that number being strongly positive, we may state that most of Group A has positive
intentions to be more accepting of the feelings and attitudes of their students in the classroom.

It is effective domain in education that is concerned with the "feelings" and attitudes of students and teachers. Since the members of Group A wished the greatest increase in the areas of the Flanders System that were concerned with the affective domain (Teacher Talk—Indirect Influence and Student Talk—Initiation) and since they collectively gave positive responses to Questions 3, 5, 6 and 7, we accept a positive reaction to the fourth hypothesis. Thus, because the programmed instrument was Group A's only exposure to self—assessment and the affective domain during the period of this study, we conclude that the programmed instrument does acquaint teachers with the emergence of emphasis on affective education.

Information regarding the clarity and effectiveness of the programmed instrument was sought in question 10, which read: "Do you think the programmed instrument on Flanders Interaction Analysis System is clear and understandable and that the teacher will understand how Flanders' system is used in analyzing classroom interaction?" To this question, nineteen participants responded that "it was quite clear" and "it was clear and understandable" both of which indicate a positive attitude toward the programmed
instrument. One participant responded, "I really couldn't say", which is an undecided opinion. In total, there are 20 participants who positively responded to Question 10, one who negatively responded, and one undecided. With 91% of Group A responding favorably to Question 10 and 5% of the group responding unfavorably, we see that Group A did think the programmed instrument clear and understandable and that teachers using it will understand how to use Flanders System in the classroom.

VIII. Comment Responses

Question II asked, "Do you feel that the programmed technique is a good method for introducing new concepts to teachers? Why or why not?". Group A's answers are as follows:

"Yes, because it can give the teacher the opportunity to accept and praise more than judge and criticize. Also he will be more conscious of his actions."

"Yes - gives examples."

"Yes, the first time I met Flanders Analysis I received too big a dose and was very unsure of my ability to use it. This simpler approach increased my confidence."

"Yes, it is fast and gets to the point quickly."
"Yes, it saves dull reading."

"Yes - but only one of many ways."

"Yes."

"Yes."

"Yes, even tho I was tempted to 'peek' - I could have just read it if I'd wanted to."

"Yes - because answers are there for you to see."

"Yes - it's getting them involved."

"Yes - it seems less time-consuming and easier than 'digging'."

"Yes - lesson is obvious."

"Yes - makes material easy to understand."

"Yes. It's information in a fun way and rather fools the reader into learning."

"Yes."

"Yes - because of immediate feedback of answers."

"I think it is great. It is the best way for me to learn anything."

"O.K. But conciseness is preferable to repetition."

"Yes."

"Usually. Sometimes and for some people other methods might be more effective."

"Perhaps - not successful for me."
The results of this question indicate a considerably positive attitude on behalf of Group A toward programmed instruction as a good method for introducing new concepts to teachers. However, like any technique, it does not work for everyone.

Fifteen of the total 22 participants in Group A responded to Question 12, "How would you improve the programmed instrument on the Flanders Interaction Analysis System?". The responses were as follows:

"Shorter."

"Good the way it is. Especially liked the practice questions at end."

"A little more scholarly written. Not so simple examples or wording. After a while the cute comments became ridiculous."

"It became boring after awhile -- too much 'padding' and repetition -- the points were almost too clear.

"Possibly the first 50 or so questions seem like a run around and most of them are not necessary."

"Cut out a bit of the information at the beginning and get to the 'meat' and have more examples."

"I wouldn't."

"Perhaps less 'lead-up', though I enjoyed it."
"Couldn't say!"

I think it's pretty well done as it is - could probably use some improvement, but I don't know what."

"I thought it was great!"

"No improvement necessary."

"I wouldn't know."

"Make it shorter or administer it in several parts - shorter doses."

"I don't know."

Of the seven in Group A who did not respond to Question 12, five left the answer space blank and two inserted question marks.

The two general criticisms that predominated were three suggestions to make the programmed instrument shorter and three suggestions to cut the introduction leading into the Flanders System. One participant suggested that the programmed instrument be written in a "more scholarly" fashion.

Regarding the suggestion for a shorter programmed instrument, the instrument was developed to help even the "slowest" participant who might benefit from a large number of examples and much review. If a participant feels that he can benefit from the instrument by using only a part of it, he may do so. The amount of time spent and the amount studied depends on the needs of the individual.
The last page of the attitudinal questionnaire was left blank in order to allow the participants to make any comments or criticism they wished to make with regard to the test. The comments made by those who wished to respond are as follows:

"Thought provoking exercise! It causes one to organize his attitudes in a positive way and have a framework for class discussion."

"I found the instrument easy to use. It made interesting reading that I could easily concentrate on."

"I thoroughly enjoyed it and learned a great deal."

"It was fun."

"I found the booklet an enjoyable learning experience. The only drawback is whether I will use it effectively."

"Having peeked at the red book, all I can say is I certainly prefer your way."

"It was a good review."

"It was a painless way of becoming acquainted with Flanders method. It was interesting."

"At least I understood it."

"I like the idea of Flanders because it gives the teacher a better opportunity of hearing himself speak
in the classroom and also be judged by his peers as well as himself."

"It is summer and I go to the beach a lot. Bikinis make more attractive covers than the cover to the booklet."

The remaining participants did not furnish comments on the page provided for them.

From the participants' reactions to Questions 10, 11 and 12 and their freely given comments, it seems safe to say that the majority of Group A favored programmed instruction and, more specifically, A Programmed Instrument for Introducing Self-Assessment and the Flanders Verbal Interaction Analysis System. The responses indicate that, if developed properly, programmed instruction is an excellent method for training teachers in new educational concepts.

To be most effective, the instrument must be informative, enjoyable, and broad enough to instruct all participants. Of course, no program can be totally satisfactory to all and the programmed instrument of this study is no different. One must take into account the wide range of learners who will be exposed to the programmed instrument. Some will be considered fast learners, others slow. Although several of the participants in the study voiced a desire for a more scholarly or sophisticated instrument, it is questionable whether or not an
instrument of this sort would be of overall benefit to those using it. The manner in which the programmed instrument is employed depends upon its user. The instrument is adaptable to individual needs and one must adjust oneself accordingly.

The programmed instrument approach allows for a dissemination of information to teachers in a wide variety of topics. It is possible that, with carefully devised instruments, teachers will be able to acquaint themselves independently with new educational concepts in a manner that is more efficient and less difficult than the traditional approaches.

Programmed instruction should not be considered a panacea for all teacher training problems. It is merely one technique which, in the instance of this particular study, had a high degree of success in self-instructing teachers in the Flanders System. However, the possibilities it seems to hold are tremendous. It is recommended that innovative educational techniques be continued, particularly with regard to those areas that are adaptable to programming. It is further recommended that programmed instruments be interesting and enjoyable and not merely informative.
CHAPTER VI

SUMMARY AND RECOMMENDATIONS

There are many factors which may conspire to stunt teacher growth. Personal worries, poor working conditions, and teacher fears are but a few of the many handicaps that teachers must face. All of these, of course, can be overcome. There is one factor, however, which can prove to be insurmountable as a barrier to teacher development. That is a poor attitude toward the job of teaching.

In most cases, the superior teacher stands out above the mediocre one because of the fact that he is teachable. He is able to understand his role as a leader in the classroom. He is perceptive with regard to the effects that his classroom performance have on his students. He is able to set specific goals and direct his behavior toward the attainment of those goals. Above all, he is able to successfully evaluate himself with respect to the standards that he has accepted. He must recognize weaknesses when they are present and correct for them.¹

¹Alcorn, et al., Ibid., pg. 463.
This study investigated the success of a self-training instrument that was developed specifically for teachers to learn and become familiar with an objective self-evaluation tool - the Flanders Verbal Interaction Analysis System.

The principal purpose of this investigation was to determine the relative effectiveness of an untested means of acquainting teachers with the Flanders Interaction Analysis System. The "untested means" was the programmed instrument. It was tested, as a method of teaching self-assessment techniques, against the learning manual that had previously been accepted as the principal tool for acquaintance with the Flanders system. This was the manual *The Role of the Teacher in the Classroom*. The study also attempted to obtain evidence concerning the attitudes of teachers toward self-assessment and programmed instruction.

The subjects in the experiment were 44 teachers from northern Illinois. Those using the programmed instrument in this report were designated as Group A. Those using the book *The Role of the Teacher in the Classroom* were designated as Group B.

The participants were randomly placed into either of the two groups. The mean number of years teaching experience for both groups were 6.9 years.
The degree of success in learning the subject matter included in the two tools was measured by an objective test which was designed to measure the acquisition and retention of the material comprising the Flanders Verbal Interaction Analysis System. This test was used as both a pre-test and a post-test with an interval of approximately three weeks separating the first and second takings.

An attitudinal questionnaire was developed to determine the participants' reactions to the Flanders System and to programmed instruction as a teacher training device.

The improvement between pre-test and post-test scores was used as the basis for statistical analysis. The significance of the difference between means of the groups was tested using the t-test significant at the .01 level.
SUMMARY OF THE FINDINGS

The following is a summary based on the t-test results, the Spearman rank-correlation coefficient results, and the response to the attitudinal questionnaire.

**t-test Results**

There was no significant difference between the mean scores of the groups on the pre-test. The evidence seemed to indicate that both participating groups were equally matched with respect to the amount of initial subject matter knowledge of the Flanders Verbal Interaction Analysis System.

The post-test means, on the other hand, were significant at the .01 level with the group using the programmed instrument having a mean score more than 15 points higher than that of the group using *The Role of the Teacher in the Classroom*. It was concluded that, in this study, those using the programmed instrument had a greater knowledge of and familiarity with the Flanders System than those using the Amidon-Flanders book.

**Spearman rank-correlation coefficient Results**

The Spearman results showed only a slight relationship between the number of years teaching experience and the familiarity of participants with the Flanders System. This
seemed to indicate that all of the participants, regardless of the number of years teaching experience, found the programmed instrument equally valuable.

**Attitudinal Questionnaire**

The Attitudinal Questionnaire was given to the participants in the study in order to learn, directly from the participants, their reactions to self-assessment and the programmed instrument.

Most of the participants had highly favorable reactions to most phases of the study - as indicated by their responses to the questionnaire. Those participants in Group A who scored lowest on the post-test indicated a failure on their part to study the programmed instrument prudently.

From the results gathered from the questionnaire, it is evident that the programmed instrument may act as a stimulus to get teachers to explore the potential contributions of self-assessment techniques in greater depth and detail. Many of the participants who used the programmed instrument expressed a desire to gather more information on self-assessment techniques and to inform other teachers of the value of such techniques.

The members of Group A felt that the programmed instrument had positively acquainted them with the emergence of emphasis on affective education. This too had been a desirable goal prior to the development of the programmed instrument.
In short, the majority of the students using the programmed instrument thought very highly of this method of self-instruction. The immediate feedback, self-pacing, and high interest features were cited as particularly important to the success of the instrument.

This study was not intended to discover if the programmed instrument acted as a self-learner. That information was already known. It was, however, conducted to learn if the instrument taught the concept of self-assessment better than the most widely used method. It was also desired to know if the instrument served a particular teaching population better than any other and the attitudes of all of those using it toward the instrument and the concepts it contains.

Evidence indicates that it does teach the concepts of self-assessment better than *The Role of the Teacher in the Classroom* and works equally well for all populations of teachers. They also share enthusiastic attitudes toward the instrument and its continued use.

Future studies should be conducted that will augment the findings of this one. A scholarly attempt should be made to repeat the investigation on a greater scale over a longer period of time with built-in follow up provided for participants. In this study, the investigator might program the matrix portion of the Flanders System to draw some indications
not only of the participants knowledge of self-assessment, but also of their ability to lay out the verbal interaction occurring in a classroom into a pattern on the matrix for a visual representation of what took place verbally in the classroom setting.

A future study might include not only the collection of attitudes of those participants using the programmed instrument but also a collection of attitudes of those using The Role of the Teacher in the Classroom. These attitudes then can be analyzed and compared to see if the instrument is affectively more favorable than the book. This study indicates the participants have a very favorable attitude toward the instrument and the concept of self-assessment but the attitudes of those using the book were not collected because they were not important to this study. This area could, however, provide input for an entirely new study.

Another area of study would be the use of the instrument as a pre-service device to inform student teachers about self-assessment and to follow up in their classroom experience to see how much the concept is being used in their classes. Traditionally, student teachers are not exposed to self-assessment techniques, so a control and experimental group could be followed up with some interesting studies including the both groups use or lack of use of the Flanders System in the classroom.
A study could be conducted to use the instrument as the nucleus of a packaged in-service series introducing innovative educational techniques to teachers using the programmed approach and written at an enjoyable adult level. These materials could function in a capacity like the "Book of the Month Club" with follow-up provided to seek the amount of implementation provided the various innovative techniques and the problems experienced in their implementation.

The programmed instrument should be disseminated over as wide an area as possible. Its printing cost is relatively inexpensive and consequently it is the most practical method of teaching the Flanders System to others while insuring the highest degree of success (as indicated in this study).

A study could be conducted comparing mastery in a mini-teaching classroom situation between those having used the programmed instrument, those using The Role of the Teacher in the Classroom, and those without any pre-knowledge about the Flanders System. Time checks could be conducted to see which group masters the Flanders usage first and best in a classroom setting. Follow up could also be conducted for comparison of participant retention after elapsed period of time. Attitudes would also be an important consideration for comparison between the three groups.
These are some recommendations for future studies, perhaps as dissertation material, which are direct continuations of this original study.

This study has concentrated on existing professional performances of teachers through self-assessment. Student needs can only be met by changing professional behavior. All other efforts at improvement in education must be translated into changes in the classroom.

Evidence so far presented by research in this study has the point of view that teachers assume as part of their professional behavior the direct improvement of their teaching through exposure of it to their own study. This study has allowed for an even greater and more practical dissemination of the self-assessment process than was possible before. It has the possibility to have an enormous impact on education.
BOOKS


Carlson, Richard O., Change Process In The Public Schools, Eugene: Center for Advanced Study to Educational Administration, 1965.


Davis, Frederick B., *Educational Measurements and Their Interpretation*.


PERIODICALS


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S.D. = 7.24
The formula for the t test of the difference between sample means using ungrouped data is:

\[ \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sum X_1^2 - (\bar{X}_1)^2}{N_1} + \frac{\sum X_2^2 - (\bar{X}_2)^2}{N_2}}} \]

\[ \frac{N_1 - (N_1 - 1)}{N_2 - (N_2 - 1)} \]

## Group A

**UNGROUPED PRE-TEST DATA FOR USE IN**

**t TEST FORMULA FOR MEAN SIGNIFICANCE**

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<th>$X_1$</th>
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**Sum of $X_1$** = 270

**Sum of $X_1^2$** = 5406

$M = 12.2$
GROUP B

UNGROUPED PRE-TEST DATA FOR USE IN
\( t \) TEST FORMULA FOR MEAN
SIGNIFICANCE

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\[
\text{Sum of } x_2 = 265 \\
\text{Sum of } x_2^2 = 4755 \\
M = 12.0
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$\text{Sum of } X_1 = 1305$

$\text{Sum of } X_1^2 = 82,167$

$M = 59.3$
GROUP B

UNGROUPED POST TEST DATA FOR USE IN
\( t \) TEST FORMULA FOR MEAN
SIGNIFICANCE

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\[ \text{Sum of } x_2 = 974 \]
\[ \text{Sum of } x_2^2 = 52,912 \]
\[ M = 44.2 \]
### t TEST COMPARISON OF GROUP A AND GROUP B

**PRE-TEST MEANS**

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12.2 -- 12.0


\* \* TEST COMPARISON OF GROUP A AND GROUP B

**POST-TEST MEANS**

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\[
\frac{82167 - 77410}{(22)} = \frac{52912 - 43122}{(21)}
\]

\[
t = 2.69 \\
\text{SIGNIFICANCE} = .01
\]

2.7
### POST TEST PARTICIPANT SCORE RANK NUMBER OF YEARS EXPERIENCE D D²

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\[
1 - \frac{6\bar{d}^2}{(22)^3 - 22} = \frac{1 - \frac{14212.50}{10648 - 22}}{1} = \frac{1}{10625} = 1 - 1.33 = (-.33)
\]
SELF-ASSESSMENT AND THE FLANDERS

INTERACTION ANALYSIS

SYSTEM

JOSEPH J. WALKER.
This book was developed primarily with teachers in mind. Teachers who have little or no background in self-assessment techniques and the Flanders Interaction Analysis.

The book is programmed to give you an immediate answer to your response. In all cases the correct answer is listed first in the answer column. If, at times, you need to refer back to certain sections of the book, do so.
Hi, my name's Sam! I'm a teacher who's very concerned about making a smashing appearance. Every morning before I leave for work, I double check in the mirror (Good start!) to see how I look.

Because of my concern for maintaining a good personal appearance, I continually read articles on innovations in styles and fashion. A new approach to something is known as an innovation.

Next, I decide on the type of wardrobe that I feel will best suit me. It is very difficult, though, to
   (a) objectively
   (b) subjectively
assess the effect my new wardrobe will have on others.

It's then that I rely on the
   (a) destructive
   (b) constructive
criticisms of my friends in making a decision regarding the alteration of my appearance.

(a) objectively
(b) constructive
(a) destructive? Who needs it? There's too much of this in the world already.
When I've adjusted my wardrobe to where I feel it will be publicly most effective, I then wear it out in ___.

If there is still a need for change, I readjust until I'm satisfied that my personal appearance is widely (a) accepted (b) excepted as being tops.

By repeating this same process regularly, I've become known as quite a (a) dandy (b) dud and am regularly known as one of the best dressed teachers in the country.

Yes, I've found a way in which I can continuously assess the effectiveness of my appearance. So, I guess you could say I'm regularly involved in a kind of self-______.

You know, recently I've come across some ways in which I can assess my effectiveness in the classroom. In fact, it's generally referred to as self-______ and it's helping me to become a dandy teacher.

Self-assessment involves a study of what we, as teachers, actually do in the ______.
I've adapted my procedure for assessing my effectiveness as a "dandy" in the public eye to that of assessing my effectiveness as a teacher in the classroom.

Here's how I look at it. Self-assessment involves many steps. It asks teachers to:

1. Collect samples of their classroom behavior.
2. Analyze these samples with a group of colleagues.
3. Set goals for themselves.
4. Practice new behaviors toward these goals by teaching a class of students.
5. Study and discuss the lessons and select new methods for practice and possible adaptation.
6. Continually study and try to improve one's professional behavior.

At first, I was kind of afraid of this self-assessment approach. It requires a good deal of self-examination or, as we in the profession say, (a) extrospection (b) introspection. This "soul searching" or introspection into the realm of human behavior is one of the (a) most difficult (b) easiest things for a human being to do!

For years, as a teacher, I had stated certain objectives that I wished to accomplish in educating my students. Yet, I seldom stopped to ask myself if I was meeting my stated objectives (See Preparing Instructional Objectives by Robert F. Mager, PH. D.).
As a teacher I had to be made aware of the central fact that all efforts to improve instruction improve or fail by the criterion of better performance set by me, the teacher, in my classroom.

In other words, teaching is what I do and to change my teaching means that I, myself, must change in some respects. And only I can change myself.

Through participation in self-assessment, I've been more able to (a) objectively and (b) subjectively answer such questions as: "Are my students learning?", and "Am I being sensitive to my students?"

Hey! Let me give you a specific example of a self-assessment activity in which I use a tape recorder to listen to myself in my classroom interaction.

The tape recorder serves as a tool in discovering things not only about the teacher but also about the students in the classroom.
21. First, I familiarize myself with workings of the tape recorder (these "doggone" things can be confusing). How many of you know how to operate your school tape recorder? Let's take a poll! Please circle one: (a) I do (b) I do not

22. Next, I select a small group of _______ from my classroom to whom I can _______ a lesson. The other students in class can serve as observers or work independently and perhaps make a tape the next time.

23. I now choose a short lesson, not more than 20 minutes, that I want to teach with certain goals in mind that I would like to reach with this lesson. These goals may change daily.

24. After selecting the short lesson, I write down the specific _______ goals that I wish to accomplish in my lesson.

25. An example goal may be to get little Seymour and Zelda, the quiet students who never discuss, to actively participate in a group _______.

26. Other goals might be to keep my opinions out of a discussion and listen to the students' _______.

If (a) I do is your answer, carry on! If (b) I do not is your answer, grab the nearest administrator(?), supervisor(?), curriculum director(?), janitor(!), or kid(!) (that's what I did) to give you a lesson. As a very last resort, read the instructions.
115

27. Or, perhaps I want to reduce my lecturing in class and allow
(a) more
(b) less
time for discussion.

28. The setting of goals is up to you, the teacher. Your goals in the classroom might _____ from day to day depending on what you want to accomplish.

29. Next, because I've learned how to operate the tape recorder, I make the tape recording myself.

30. Now I listen to and analyze my recording with my colleagues and we can discuss whether or not I reached my desired _____.

31. With the help of my ________ good advice I'm encouraged to select new methods for practice and possible adaptation.

32. My colleagues are invaluable in supporting me and helping me to find ways of adjusting my behavior toward reaching my desired _____.

33. All of us in the group make tapes of our classroom behavior for scrutiny by our colleagues. This process may be _______ over and over again until the group has listened to everyone's tape.

34. By using the tape recorder we teachers can continually study our professional behavior in an (a) objective (b) subjective way.
Taping becomes a continuous cycle of teaching, listening, analyzing, discussing, studying my own behavior, and then (a) forgetting (b) repeating the entire process.

Although our behavior may never fully be understood, I think that by watching and observing we can come to know certain aspects of our behavior.

And through using the tape recorder and other techniques of self-assessment, we, as educators, can attempt to understand our professional behavior.

Using a tape recorder (or videotape) is just one example of a self-assessment activity. I'll give you a few others (you lucky people).

Students may fill out an item inventory on how they perceive my behavior. This helps me as the teacher to gain insight into what the students think of what I do.
40. The inventory includes questions such as:
   --- does my teacher embarrass some students?
   --- is my teacher short tempered?
   --- does my teacher admit when he does not know an answer?
These and other questions give me an idea on how my students perceive my behavior.

41. With my colleagues' assistance, I analyze examination questions that I ask to see if I'm encouraging thinking in my classroom. This helps me to know if I'm encouraging my students to question, be critical and formulate their own ideas or merely to memorize facts.

42. I've taken diagnostic tests to assess the knowledge I possess on education and innovation and then decided what books and other informational sources I can consult to increase my knowledge.

43. One of my favorite self-assessment techniques is brainstorming with my students or colleagues to see how we can improve behavior or ways in which we can make the classroom a more exciting place to learn. I get a variety of ideas on what I might do by using the brainstorming technique.

44. Here then is a summary of some different activities I've found helpful in participating in self-assessment:
Listening to tape recordings or viewing a videotape, then analyzing, discussing and criticizing.

Having students fill out item inventories.

Analyzing examination questions.

Using a diagnostic test.

Brainstorming.

Hope you find some of them helpful too!

45. As you know, there are many interaction tools available. I'd like to discuss with you an interaction tool that enables you to objectively classify the kind of responses a person makes in interacting with others, whether they be students or adults. It's called the Flanders' Interaction Analysis!

46. In the Flanders system of interaction analysis observation of all teacher statements are classified first as either indirect or direct.

47. This classification gives central attention to the amount of freedom you, the teacher, grant to your students in your classroom.
48. You can be either direct, that is, minimizing the freedom of your students to respond or you can be indirect, that is maximizing the freedom of your students to respond.

49. All statements that occur in the classroom, then, fit one of three major areas: (1) teacher talk, (2) student talk, and (3) silence or confusion.

50. Anything that is not teacher or student talk is handled in the area of silence or confusion.

51. All three of the above mentioned areas are mutually exclusive, yet totally inclusive of all verbal interaction occurring in your classroom.

52. Let's talk for a while about the four categories in Indirect Teacher Influence. Category I is Acceptance of Feeling. We teachers accept feelings when we say we understand how our students feel, that they have a right to have these feelings, and that we won't punish our students for their feelings.
53. Also included in the **Acceptance of Feeling** category are statements that recall past feeling, refer to **enjoyable** or **uncomfortable** feelings that are present, or predict **happy** or **sad** events that will occur in the **future**.

54. Is "I can understand why you'll cry if we lose" an example of Category I?  
   (a) yes  
   (b) no

   "Laurel and Hardy make me laugh." is an example of Category ___.

55. **Category 2 - Praise or Encouragement.** "Good", "fine", "right", "Uh huh", "I like what you're doing", "Continue what you're saying", "Go on", and head nodding are examples of Category ___.

56. Jokes to release tension so long as they  
   (a) are  
   (b) are not

   made at the expense of your students also fit Category 2.

57. "You are absolutely right in what you say, Herman. Please continue." is an example of Category ___.

58. "Groovy, man, right on target." belongs in Category (a) 1  
   (b) 2

59. **Category 3 - Accepting Ideas.** Paraphrasing, restating, or summarizing a student's suggestion falls under Category 3 or accepting _____.
60. Category 3 deals with acceptance of student ideas differing from Category I which deals with accepting student emotions or feelings.

61. "Jerry stated that the capital of Illinois is Springfield," is an example of
   (a) Category I
   (b) Category 3

62. "I get excited when I know an answer too!" is an example of
   (a) Category I
   (b) Category 3

63. Category 4 - Asking Questions. This category consists of those questions to which you expect an answer from your students.

64. All questions, however broad or narrow, which are not commands or criticisms fall under Category
   (a) 1
   (b) 2
   (c) 3
   (d) 4

65. Would "How much is 5x8?" be included in Category 4?
   (a) Yes
   (b) No

(a) Yes - it's very narrow and restricts the student in his answer but it fits the requirements of Category 4.
66. Is "What game shall we play at recess?" an example of Category 4? (a) yes (b) no
(a) Yes - it's broad and gives the student a great deal of freedom but it fits Category 4.
(b) No - it really isn't seeking a student response but is a command. We'll get to this Category later.

67. "Will you sit down now, John? is an example of Category 4. (a) yes (b) no

68. "Who was our greatest President and why?" is an example of Category 4? (a) yes (b) no
(a) Yes

69. "Annie means that all solids have shape." is an example of Category ___.
3 - clarifying a student's idea.

70. We'll all probably enjoy petting the animals." belongs in Category ___.
I - predicting feelings.

71. "I don't like doing dishes either." is an example of Category ___.
I - it accepts a student's feelings.

72. Under what category would "You're right, Charley!" be classified? (a) 1 (b) 2 (c) 3 (d) 4
(b) 2 - praises or encourages.

73. "Yeah, good!" is an example of Category (a) 1 (b) 2 (c) 3 (d) 4 (b) 2 - praises or encourages
"How did Columbus travel to the New World?" is an example of Category ___.

"Briefly, Tom is saying that he thinks that we will soon reach Mars." belongs in Category ___.

"As Alice said, Dwight Eisenhower was a general." "He also was a President, boys and girls" is covered in Category ___.

I've briefly discussed with you the four Categories of Indirect Teacher Influence. They were:

1. Accepts Feeling.
2. Praises or Encourages.
3. Accepts or Uses Ideas of Student.
4. Asks Questions.

Direct Teacher Influence includes Categories 5, 6 & 7.

Category 5 - Lecture.
Lecture is the form of verbal interaction in which you (a) seek facts, opinions or ideas.
(b) - give, give and more give (Phew, I'm winded!).
Rhetorical questions are classified under lecture or category ____.

Do you think that Category 5 is one of the (a) least frequently (b) most used categories when we observe teachers in the classroom?

Category 6 - Giving Directions.
Directions, commands or orders to which the student is expected to comply.

"Please stand," is an example of Category ____.

Is "Let's take out our books and open them to page 36." an example of Category 6? (a) Yes (b) No

"John, will you pick up that paper?" is an example of Category 6. (a) Yes (b) No

"Jerry, what's the largest State in the United States?" is an example of Category ____.

Category 7 - Criticizing or Justifying Authority.
A statement of criticism is one that's designed to change your students behavior from nonacceptable to acceptable.
87. Bawling someone out, stating why you are doing what you're doing, and extreme self-reference also fit in Category ___.

7 - (even though you never bawl out any of your students, do you!).

88. Is "I'm the boss here and if you don't believe it ask the principal!" an example of Category 7? (a) Yes (b) No (a) yes

89. "Do six laps around the gym and then shower." is categorized under number ___.

6 - giving directions.

90. "You dummy! You complete clod! You are, without a doubt the biggest dolt that I have ever met!" is an example of Category ___.

7

91. Is "I think that with all of my training and my skills, I should know what's best for you silly kids!" an example of Category 5? (a) Yes (b) No (b) no - it sounds more like a 7 to me.
"As Bertha said, a proper noun names a particular person. Now remember Class, it may also name a particular place or thing. For instance, we live in a City, but our City has a particular . . . (blah, Blah, BLAH!)", belongs in Category
(a) 3
(b) 5

"I'm rearranging your seats so you won't have the chance to fool around so much." belongs in Category
(a) 5
(b) 6
(c) 7

"George, if you say one more word you'll have to leave this class and go to the office!" would belong in Category ___.

"Will you come here or must I drag you?" would be categorized with a number
(a) 4
(b) 6
(c) 7

"The praise of critics is sometimes misplaced, as is their condemnation - Styles come and go as well as individual works or authors, and Salinger the hero becomes Salinger the fool, yet Holden Caulfield continues to . . . "belongs in Category ___.

"Pass your papers to the front." is an example of Category ___.

(b) 5 - Lecture.
(a) 3 - true it begins by building on a student's ideas but it swings, almost immediately, into lecture.

(c) 7 - it's a justification of one of your actions.

(c) 7 - at least I'll score it as a criticism although a 6 might be acceptable.

5 - Lecture
The first seven categories are all categories of teacher talk. Whenever the teacher is talking the statements must be listed in one of the first seven categories.

There are three additional categories for use in classroom interaction. Categories 8 & 9 deal with student talk and Category 10 deals with silence or confusion.

Category 8 - Student Talk - Response. This category is used when you, the teacher, solicit student statements, when he answers a question asked by you, or when he responds to a direction you, the teacher, have given.

Anything that the student says that is clearly in response to initiation by you, the teacher, belongs in Category 8.

Category 9 - Student Talk - Initiation. A student statement or asking of a question (a) with teacher prompting (b) without fits Category 9. Remember, Category 8 is in response to a teacher initiated statement. Category 9 is initiated by the student.
103. If "calling on" students is used only to indicate who may talk next, the observer must decide whether the student wanted to talk. If he (a) did (a) did (b) did not use Category 9.

104. **Category 10 - Silence or Confusion.**
This category includes anything else not covered in the other nine categories.

105. Periods of confusion in communication, when it's difficult to determine who's talking are classified in Category (a) 8 (b) 9 (c) 10.

106. **Consider the following statements as being those of students:**

107. "The sum of 2+2 is 4." belongs in Category ___.

108. "I wonder why that structure won't collapse under such strain?" is an example of Category ___.

109. "I was just thinking that if we reach the moon first we'll have a good chance to be the first to reach Jupiter." is categorized in number ____.
110. "Billie the Kid is my favorite person in history because he rode horses and shot people." is Category (a) 8 (b) 9 (a) 8—at least it sounds like a student response to a teacher initiated question to me.

111. "..." is an example of category ____.

112. Accepts Student Ideas—is category number ____.

113. Lecture is categorized numerically as a _______.

114. Category 7 is (a) Asking Questions (b) Give Directions (c) Criticizes or Justifies Authority

115. Is Student Talk-Response categorized by a number 8, 9, or 10?_____.

116. Category 9 is Student Talk— (a) Response (b) Initiation

117. Category 2 is (a) Accepts Feeling (b) Praises or Encourages (c) Accepts Ideas

118. Accepts Feeling is listed by a number ____.

119. "Form a single line.", is a direction and categorized under number ____.
120. If you observed an hour of lecturing, your recording sheet would be filled with
(a) 5's
(b) 6's
(c) 7's

121. If a wasp suddenly entered a window in a classroom you'd probably observe a good deal of Category (a) 2
(b) 5
(c) 10

122. "Freddy, who is buried in Grant's tomb?" would receive a numerical rating of ___.

123. If several children began speaking at once it would be recorded under Category ___.

124. Please supply the numerical response for each of the following categories:

- Asks Questions. ___
- Criticizes or Justifies Authority. ___
- Silence or Confusion. ___
- Student Talk -Initiation. ___
- Accepts Feeling. ___
- Gives Directions. ___
- Student Talk -Response. ___
- Lectures. ___
- Accepts Student Ideas ___
- Praises or Encourages. ___

125. There are two methods of obtaining a sample:

(1) Classify each separate sentence or parts of a sentence, if it appears long and complex.
(2) Classify each statement being spoken at three-second intervals.
I suggest that you begin by using the separate sentence approach and change to the _______ _______ approach after you're familiar with the categories.

You can accomplish meaningful feedback either way. However, if you wish to relate the results of your analysis to that reported in the research literature*, the _______ _______ interval must be used.

*Amidon, Edmund J. & Flanders, Ned A. The Role of the Teacher in the Classroom; A Manual For Understanding and Improving Teacher's Classroom Behavior.

Here are some Do's and Don'ts for you to remember:

Rule I: If you aren't certain in which of two or more categories a statement belongs, Do choose the category that is numerically farthest from the Lecture Category which is number ___.

For instance, if you weren't certain if a statement should be categorized as a I or a 3, you would list it as a (a) 1 (b) 3

And if you were uncertain about classifying a statement as an 8 or
9, you would categorize it as a _____.

9 - again correct because 9 is numerically farther from 5 than is 8. (Got the idea now?)

31. Rule II: If a teacher's behavior has been consistently direct or consistently indirect, Don't shift into the opposite type of influence unless the teacher has definitely moved to the opposite type of influence.

Let's say that a teacher you're observing remains in the direct influence (Categories 5, 6 & 7) throughout his observed teaching performance. All of your recorded numbers should be in the (a) direct influence categories. (b) indirect

32. Rule III: When observing, Don't be overly concerned with your own biases. In other words, try to be as (a) objective as possible. (b) subjective

33. Rule IV: As you're conducting a three-second type of analysis, if more than one category occurs during the three-second interval, Do record each change in category. If no change occurs within the three-second interval, repeat that category number. As an example, let's follow this interaction. (T represents teacher and S represents student).

T-Morry, how much is 6x3?
S-18
T-Good!
These interactions occurred within three seconds. How would you numerically categorize them? ____ , ____ , ____ .

Want to try another?
S- I know the ostrich is a bird but ....
T- Yes, continue
S- Why can't it fly?
How would you categorize these interactions? ____ , ____ , ____ .

If you were using a three-second type of analysis and you observed a teacher lecturing for one minute, how many 5's would you have listed on your recording sheet? (a) 1 (b) 20 (c) 30

Rule V: If a silence is long enough to be discernible, and if it occurs at a three-second recording time, Do record it as a 10.
Following are some teacher and student statements. Try numerically categorizing them and then check your answers.

1. S. I hate English. ____ Why do I have to learn it? ____
   T. I agree that it can sometimes be discouraging. ____

2. S. Was Eleanor a reference to Poe's dead wife? ____
   T. Okay. ____ Bob wonders if Eleanor was Poe's wife. ____

3. T. All right. ____ Are you saying that if we add an apostrophe "s" it will become the possessive case? ____

4. T. I think that's a good idea. ____
   Continue. ____

5. T. How many people think we're here to see Frank make a fool of himself? ____

6. T. What does Pam mean when she says that if we add the subtrahend to the remainder, our answer should be the same as the minuend? ____

7. T. Does the rest of the class like Hubert's idea too? ____

8. T. Louie, will you please answer the door? ____

9. T. What's the next step after we subtract? ____
10. T. Everyone think about a solution tonight and we'll ask for answers tomorrow.

11. T. Don't do it again! Please go to your seat. I Said Go To Your Seat!

12. T. What is the animal on page seventeen called?
   S. It's called a bear. But it doesn't really look like a bear. Bears aren't green like that.

13. T. Who discovered America?
   S. Most people say Columbus. But I think Leif Ericson did.
   T. Okay. Why?

14. S. I love to go to movies.
   T. I enjoy movies too. What's your favorite movie?
   S. I think that I liked "Oliver" best. Musicals and comedies are my favorites.
   T. I like comedies and westerns.

15. T. Come here, Barbara!
   S. No!
   T. If you don't come up here I'll call your parents!
   S. I don't care!
   T. All right, you've asked for this!
You may argue about some of the numerical responses and probably have a good case. Your judgment must be used to decide into what categories the various interactions should be placed. Just remember **BE CONSISTENT!**

Now you're on your own! May I suggest that you divide into small groups and practice using the categories through classifying the statements from a written "tape-script". Help one another with questions and discussion.

Following this, tape a classroom session and you and your colleagues classify it according to the categories and Flander's Analysis (your colleagues should do this taping too!).

As you improve and gain familiarity with the categories, begin practicing the classification of classroom interaction at three-second intervals from the tapes.

Collect feedback on how your group reacts to the individual sessions and modify your activities accordingly.

**GOOD LUCK!**
ACCORDING TO THE FLANDERS' INTERACTION ANALYSIS, TEACHER-STUDENT STATEMENTS FALL INTO A VARIETY OF CATEGORIES. EACH OF THESE TEN CATEGORIES HAS A CORRESPONDING NUMERAL ALLOWING FOR FLUENCY IN THE RECORDING OF TEACHER-STUDENT VERBAL INTERACTION AS IT OCCURS IN THE CLASSROOM. TO THE EXTENT YOU ARE ABLE, PLEASE PLACE ON THE BLANK LINE THE NUMERAL REPRESENTING THE FLANDERS' ANALYSIS CATEGORY THAT BEST DESCRIBES EACH OF THE FOLLOWING TEACHER STATEMENTS. (BE SURE TO COMPLETE EACH ITEM.)

1. Are you saying that Chicago is not the capital of Illinois, Rick?

2. What is the next step after we add the sodium?

3. How do you feel about this, Teddi?

4. It was 1934 and I was glad to be sixteen. There was much debate that year about which might

5. If you do that again, I'll send you home to your parents!

6. Very good, Cindy, I like that idea.

7. Please open the window, Virgil.

8. How many of you know what Al means when he says that if we subtract instead of adding our answer will be correct?

9. I know you will enjoy this, class.

10. Open your books to page 12.

11. The audience may hear your words and understand them, but the message will be lost. There will be no emotion in your speech. None of the words ......

12. Sit up straight and listen to me, Donald!
13. Bob, you've done an outstanding job on your assignment.
14. Can you locate Las Vegas on the map, Terry?
15. I like Hershey bars, too.

THE FOLLOWING MULTIPLE CHOICE QUESTIONS RELATE TO THE TEN CATEGORIES OF THE FLANDERS INTERACTION ANALYSIS. IN EACH CASE THE CORRECT ANSWER IS LISTED AS ONE OF THE FOUR CHOICES. PLEASE ENTER ON EACH BLANK LINE THE LETTER CORRESPONDING WITH THE ANSWER YOU THINK TO BE CORRECT.

1. The numeral representing the category of Silence or Confusion on the Flanders Interaction Analysis is a:
   A.) 4
   B.) 6
   C.) 8
   D.) 10

2. The numeral 6 represents which category on the Flanders?
   A.) Asks Questions
   B.) Gives Directions.
   C.) Lectures.
   D.) Praises or Encourages.

3. The Accepts Feeling category of the Flanders is represented by the numeral:
   A.) 1
   B.) 3
   C.) 5
   D.) 7

4. Talk by students when the teacher initiates the contact or solicits a student statement is categorized on the Flanders as:
   A.) Lecture.
   B.) Gives Directions.
   C.) Student Talk - Response.
   D.) Student Talk - Initiation.
5. "Uh huh!", "go on", "continue", and "I like that", are all part of the Praises or Encourages category which is represented on the Flanders by the numeral:  
   A.) 2  
   B.) 4  
   C.) 6  
   D.) 8  

6. Teacher statements intended to change student behavior from nonacceptable to acceptable patterns are represented by the numeral:  
   A.) 4  
   B.) 5  
   C.) 6  
   D.) 7  

7. Student talk which they initiate is represented by the numeral:  
   A.) 7  
   B.) 8  
   C.) 9  
   D.) 10  

8. The Accepts or Uses Ideas of student category is included in the Indirect Influence section of  
   A.) Teacher Talk.  
   B.) Student Talk.  
   C.) Silence.  
   D.) Confusion.  

9. The numeral 5 on the Flanders represents which of the following categories?  
   A.) Criticizes or Justifies Authority.  
   B.) Asks Questions.  
   C.) Accepts Feeling.  
   D.) Lectures.  

10. The Asks Questions category of the Flanders is represented by the numeral:  
    A.) 3  
    B.) 4  
    C.) 5  
    D.) 6
FOLLOWING ARE SOME SAMPLE TEACHER-STUDENT STATEMENTS. CATEGORIZE EACH STATEMENT USING THE NUMERAL REPRESENTING ITS CORRESPONDING FLANDERS CATEGORY. PLEASE PUT YOUR ANSWER ON THE BLANK PROVIDED.

S - REPRESENTS A STUDENT STATEMENT.
T - REPRESENTS A TEACHER STATEMENT.

1. T - Sam, will you please answer the door? ___

2. T - Do problems 1 to 20 tonight and we'll correct them tomorrow. ___
   S - Class moans and groans) ___

3. T - What kind of fish is pictured on page 83? ___
   S - That's a dolphin. ___
   But a dolphin isn't a fish, it's an air breathing mammal. ___
   T - What's a mammal, Mary? ___

4. T - Excellent, Mario. That's a fine project. ___
   S - Thank you, Miss Brodil. ___

5. T - Pattie, how much is 8x4? ___
   S - 28.
   T - Try again. ___
   S - 32. ___

6. S - I love to listen to the Indianapolis race every year. ___
   T - So do I. ___

7. S - I hate these workbooks. Why do we have to use them? ___
   T - Because I said so! ___

8. T - Raise your hand if you think Esther's making a fool of herself. ___
   S - Class laughs) ___

9. T - As A.J. said, our answer may be found by studying Frankenstein. ___
   But remember class, movies don't always produce a story on the screen exactly as it was written in literary form. Most times they ... ___
10. S - I don't care for Hemmingway. I know he's supposed to be great and all that, but I think he stinks.  
    T - Who do you like, Sher?  
    S - Well, I like F. Scott Fitzgerald.  
    T - Why?  
    S - I dunno!  
    S - (Class laughs)  

11. T - Line up at the door, class.  
    I said line up at the door class.  
    Class, I Said Line Up At The Door!  
    S - (Class noisily lines up at door)  

12. T - What is the largest Continent, Fern?  
    S - Australia, but ... .  
    T - Yes, go on.  
    S - I read that some geologists say it's just a large island rather than a Continent.  
    T - That's very interesting, Fern.  

13. S - I saw this movie Saturday with Woody Allen.  
    T - He's funny.  
    S - Yeah! In this one scene he - - .  
    T - We have to start class now, Jim.  

14. T - Open your books to page forty-two class.  
    Cletus, please begin reading.  
    S - I don't want to.  
    T - What!  
    S - I don't want to read.  
    T - Go to the principal's office young man!  
    S - (Classroom is silent)  

15. S - I dig this stuff.  
    T - I'm hip man so do I.  
    T - The Count's been too much for eons. I remember back in '64 he ... .
1. If you were using Flanders' Analysis in categorizing a tape of your own classroom interaction, in what categories do you think you would have the highest percentage of responses? (Circle them)
   1.) Accepts Feeling
   2.) Praises or Encourages
   3.) Accepts or Uses
   4.) Asks Questions
   5.) Lectures
   6.) Gives Directions
   7.) Criticizes or Justifies
   8.) Student Talk-Response
   9.) Student Talk-Initiation
   10.) Silence

2. In what categories of the Flanders' Analysis would you like to have the most responses? (Circle them)
   1.) Accepts Feeling
   2.) Praises or Encourages
   3.) Accepts or Uses
   4.) Asks Questions
   5.) Lectures
   6.) Gives Directions
   7.) Criticizes or Justifies
   8.) Student Talk-Response
   9.) Student Talk-Initiation
   10.) Silence or Confusion

3. Will you seek to develop classroom objectives that will increase interaction in the categories you circled in Question 2?
   Yes! Probably Not sure Unlikely No!

4. Will you make a tape of your classroom interaction and analyze it according to Flanders' system? (Circle one)
   Yes! Probably Not sure Unlikely No!

5. Will you be more aware of the Indirect Influence area (Flanders' categories 1 through 4) of Teacher Talk in developing your classroom objectives? (Circle one)
   No! Unlikely Not sure Probably Yes!

6. Will your classroom objectives contain more concentration on students' attitudes and feelings than in the past? (Circle one)
   Yes! Probably Not sure Unlikely No!
7. Will you be more accepting of the feelings and attitudes of your students in the classroom?
   No! Unlikely Not sure Probably Yes!

8. Will you suggest the use of the Flanders' Analysis to other educators in your school district?
   Yes! Probably Not sure Unlikely No!

9. Will you investigate other methods of self-assessment for use in the classroom?
   No! Unlikely Not sure Probably Yes!

10. Do you think the programmed instrument on Flanders' Interaction Analysis is clear and understandable and that the teacher will understand how Flanders' system is used in analyzing classroom interaction? Why or Why not?

11. Do you feel that the programmed technique is a good method of introducing new concepts to teachers? Why or why not?

12. How would you improve the programmed instrument on the Flanders' Interaction Analysis?
APPROVAL SHEET

The dissertation submitted by Joseph James Walker has been read and approved by the members of the School of Education.

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Education.

April 29, 1972
Date

[Signature of Adviser]