

# The Relationship of Self-Supervision to Change in Selected Attitudes and Behaviors of Secondary Student Teachers\*

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STUDENT teaching can be a learning experience for prospective teachers if it provides opportunities for the analysis of and consequent change in their teaching behavior. Traditionally the classroom behavior of student teachers has been evaluated and analyzed by school and college personnel in cooperation with the student teachers. There has been no formal practice in which student teachers have completely assumed a supervisory role with respect to their own teaching behavior, largely because it has only recently become practical to provide student teachers with conditions upon which complete self-supervision depends.

The method of self-supervision which was studied used video tape to combine the immediacy factor with faithful reproduction, and aspects of the Flanders system for categorical analysis of teaching behavior. The technique of self-supervision used in this study also involved the structural concept of micro-teaching (short lessons taught to small groups) developed in the Stanford Teacher Education Program and found there to be an

effective means of affecting teaching behavior. The Stanford materials focusing on aspects of teaching behavior, however, were not used. Self-supervising student teachers were videotaped during their 20-minute lessons. No supervisor was present. After the lesson, these student teachers analyzed their video tapes with the Flanders system.

Self-supervision provides a new dimension in educational supervision which may be useful to the student teacher not only during his student teaching but also when he later assumes full responsibility as an employed teacher with infrequent supervisory assistance. It is important for us to provide student teachers with the opportunity and means whereby they may supervise themselves and for us to examine such self-supervision to determine its effects. One of the first steps toward such a determination is to discover some of the things that take place during and after self-supervision.

Educators recognize that there is a gap between what teachers know and how they behave even in areas thought to be as critical to good teaching as is the "helping relationship."<sup>1</sup> Findings based on scores on the Minnesota Teacher Attitude Inventory<sup>2</sup> indi-

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<sup>1</sup> Arthur W. Combs and Daniel W. Soper. "The Helping Relationship as Described by 'Good' and 'Poor' Teachers." *Journal of Teacher Education* 14:67; March 1963.

<sup>2</sup> Walter W. Cook, Carroll H. Leeds, and Robert Callis. *Minnesota Teacher Attitude Inventory Form A*. New York: The Psychological Corporation, 1951. The authors of the MTAI report in the Manual a significant decrease in scores after six months of teaching experience, indicating that teachers tend to exhibit more attitudes less helpful to establishing good rapport with pupils after they have taught than before they have taught (see pp. 12-13 of Manual).

cate that the effect of the emphasis placed on the development of encouraging, accepting teacher behavior by teacher education programs and the more permissive, cooperative attitudes held by student teachers seem to slip somewhere between the cup of theory and the lip of practice,<sup>3</sup> notwithstanding the fact that the philosophy of education implied by the items of the MTAI is widely accepted, as is evidenced by the use of this instrument to select good teachers<sup>4</sup> and to predict success in teaching.<sup>5</sup>

Since the attitudes of the student teacher's membership group appear to differ from those of his reference group (experienced teachers), and since he will be influenced to change his attitudes toward those of the reference group,<sup>6</sup> a strong tie lessening the width of the interval between theory and practice is desirable. If the student teacher is to retain the kind of predisposition to behavior provided for him by professional education courses, this tie approaches necessity.<sup>7</sup> He could benefit<sup>8</sup> from examining his own

behavior for improvement,<sup>9</sup> defending his position through internal direction in order to resist external persuasion,<sup>10</sup> developing a set for pertinent data,<sup>11</sup> and utilizing a problem-solving approach which is so useful in producing behavioral change when necessary.<sup>12</sup>

In this study, self-supervision through use of video tape and interaction analysis provided opportunity for the student teacher to benefit from each of these desirable approaches as well as for eliminating the anxiety sometimes produced by the presence of a supervisor<sup>13</sup> and overcoming the difficult task of convincing the student teacher that what the supervisor reports has really happened.<sup>14</sup> The combined use of video tape and interaction analysis in self-supervision seems to produce a package extending the desirability

<sup>3</sup> Robert Callis. "Change in Teacher-Pupil Attitudes Related to Training and Experience." *Educational and Psychological Measurement* 10:718-27; 1950; Robert D. Price. "The Influence of Supervising Teachers." *Journal of Teacher Education* 12:472-73; December 1961. Contrary findings for student teachers are reported by: D. L. Sandgren and L. G. Schmidt. "Does Practice Teaching Change Attitude Toward Teaching?" *Journal of Educational Research* 49:673-80; 1956.

<sup>4</sup> Lloyd S. Standles and W. James Popham. "Too Much Pedagogy in Teacher Education?" *Bulletin of the National Association of Secondary School Principals* 45:80-81; December 1961.

<sup>5</sup> William H. Edson. "Selecting Students for the College of Education at the University of Minnesota." *Journal of Teacher Education* 14:55; March 1963.

<sup>6</sup> A. E. Siegel and S. Siegel. "Reference Groups, Membership Groups, and Attitude Change." *Journal of Abnormal and Social Psychology* 55:360-64; 1967.

<sup>7</sup> John Walton. "The Study and Practice of Teaching." *The School Review* 69:136-50; Summer 1961; Ethel Wooley and Ralph L. Smith. "Studio Teaching Before Student Teaching." *Journal of Teacher Education* 13:333-39; September 1962.

<sup>8</sup> For evidence that attention to "indirect teaching" (which corresponds to the educational philosophy of the MTAI) in the Flanders system is desirable see: Martin Haberman. "The Teaching Behavior of Successful Interns." *Journal of Teacher Education* 16:215-20; June 1965. Instruments for

categorizing the behavior of teachers such as that developed by Flanders reflect concern with elements of teaching similar to those explored by the MTAI. Both the MTAI and Flanders' categories for interaction analysis were used in this study in order to determine the interrelationship among attitudes, interaction behavior, and self-supervision. See: N. A. Flanders. "Teacher Influence, Pupil Attitudes and Achievement." U.S. Office of Education Cooperative Research Project No. 397, 1960. Mimeographed.

<sup>9</sup> Eleanor S. Isard and Emily J. Sherwood. "Counselor Behavior and Counselor Expectations as Related to Satisfaction with Counseling Interview." *Personnel and Guidance Journal* 42: 920-21; May 1964.

<sup>10</sup> Fred N. Kerlinger. "Educational Attitudes and Perceptions of Teachers: Suggestions for Teacher Effectiveness Research." *The School Review* 71: 1-11; Spring 1963; Arthur W. Combs. *The Professional Education of Teachers*. Boston: Allyn and Bacon, Inc., 1965; W. J. McGuire. "Inducing Resistance to Persuasion." In: Leonard Berkowitz, editor. *Advances in Experimental Social Psychology*. New York: Academic Press, Inc., 1967. pp. 200-21.

<sup>11</sup> M. C. Wittrock. "Set Applied to Student Teaching." *Journal of Educational Psychology* 53: 175-80; August 1962; Association for Student Teaching. *The College Supervisor: Conflict and Challenge*. Forty-Third Yearbook. Dubuque, Iowa: Wm. C. Brown Co., 1964. p. 94.

<sup>12</sup> Henry Weitz. *Behavioral Change Through Guidance*. New York: John Wiley & Sons, Inc., 1964.

<sup>13</sup> Association for Student Teaching, *op. cit.*, p. 119.

<sup>14</sup> Association for Student Teaching, *op. cit.*, p. 120.

of video tape<sup>15</sup> and interaction analysis<sup>16</sup> as recognized by leading educators.

## Problem and Purposes

The attitudes of student teachers toward pupils and school work are thought by many to be elements central to effectiveness in classroom situations. These attitudes may affect teacher-pupil relations by influencing the ways in which student teachers interact with pupils. In the case of self-supervision, the attitudes of student teachers may also be involved when they consciously select those behaviors to be repeated and those to be eliminated or minimized. Systematic attention to their own patterns of interaction with pupils may also have an effect upon these attitudes as well as on the interaction behavior demonstrated after self-supervision.

This study examined the relationship between student teachers' attitudes and the incidence of direct and indirect control in their classroom interaction behavior. Some student teachers supervised themselves, while others were supervised in a more traditional manner. The study also examined the relationship of self-supervision to change in interaction behavior in lessons taught by student teachers and the relationship of self-supervision to their attitudes toward pupils and classwork.

Both portions of the study (Fall 1967 and Spring 1968) compared instances of self-supervision by student teachers, in which they applied aspects of the Flanders system of interaction analysis to their own teaching behavior recorded on video tape, with instances of supervision of student teachers in a more traditional manner. This was done in

<sup>15</sup> William W. Brickman. "Portable T.V. Recorder for Student Teachers." *School and Society* 92: 330; November 1964; Herbert Schueler and Milton J. Gold. "Video Recordings of Student Teachers—A Report of the Hunter College Research Project Evaluating the Use of Kinescopes in Preparing Student Teachers." *Journal of Teacher Education* 15: 358-64; December 1964.

<sup>16</sup> Edmund Amidon and Anita Simon. "Teacher-Pupil Interaction." *Review of Educational Research* 31: 130-36; April 1965; George Margosian. "Suggestions for the College Supervisor." *NEA Journal* 54: 39; April 1965.

order to determine the following relationships: (a) certain attitudes of student teachers to the kind of interaction behavior they demonstrate; (b) self-supervision to change in interaction behavior; (c) self-supervision to change in certain attitudes of student teachers; and (d) observed amounts of certain kinds of interaction behavior exhibited by student teachers to their estimates of such amounts.

An additional basis for comparison was incorporated into the study to determine changes in MTAI scores over time by administering the MTAI to the traditionally supervised group during the spring semester, thereby providing an initial score, a score after 12 weeks, and a score after 30 weeks for student teachers in that group.

## Population and Sample

The teacher-trainee sample who were the subjects of the study took a pretest MTAI prior to their random assignment to treatment groups. From this pretest the groups were categorized into three stratifications: (a) high MTAI group, which consisted of those students scoring one standard deviation or more above the MTAI mean; (b) average MTAI group, which consisted of those students scoring within one standard deviation of the mean; and (c) low MTAI group, which consisted of those students scoring below one standard deviation from the mean. Random assortment procedures then distributed equal representation of those groups into each of four treatment groups (two groups each semester), rendering better comparability of groups for change analysis.

The fall and spring student teaching populations were tested for comparability of groups and the second sample was assigned with regard to the prior stratification of the first sample. In all there were 84 subjects in the four treatment groups. Group I engaged in self-supervision, Group II was more traditionally supervised, Groups III and IV used both traditional and self-supervision in different sequence.

All subjects met the following criteria: undergraduate, secondary education, part-

day, full-semester student teachers in the fields of English, social studies, science, and mathematics. These criteria were chosen since they identified the largest single subgroup of secondary student teachers at Memphis State University and perhaps in many other university teacher education programs.

## Procedures

Each student teacher who was a subject in this study selected five different interested pupils at random from his classes for each of two 20-minute lessons which he taught on separate afternoons in one of the classrooms in the College of Education Building. All of these 20-minute lessons were taught after normal school hours. Reports from student teachers, pupils, principals, and cooperating teachers indicated that the afternoon lessons were enjoyable and profitable.

At the first seminar meeting all participants were asked to list any afternoon that would be inconvenient for them to teach a lesson at Memphis State University. It was felt that requiring a participant to miss a previously set appointment or an afternoon class would cause confusion for all parties involved. Transportation for the high school students involved in the study would be difficult if the lesson were scheduled for an afternoon when the student teacher had a class. Also, a student teacher who was to be supervised immediately before or after attending a class might feel tired or pushed for time. Therefore, it was decided that the schedule for afternoon lessons would be made for the convenience of the participants.

No attempt was made to randomly assign participating student teachers to the schedule. The afternoon lesson schedule was set up to avoid times that would be difficult for the individual student teachers. It was also decided that individual participants in the self-supervision group would be released from the regular Thursday afternoon seminars if they were to teach on that afternoon. This decision did not threaten validity because a certain number of absences would, in the normal course of events, be expected over the length of time involved in this study.

It was decided that the order in which the student teachers taught their second lesson should be the same as the order in which they taught their first lesson. Again, as in the first scheduling, the dates for teaching afternoon lessons were assigned with regard to the convenience of the individual student teachers. Scheduling in this manner gave all participants approximately the same amount of time between the two teaching experiences. This general procedure was adhered to as much as possible. School holidays and previous commitments by the principal investigator necessitated a few minor changes, none of which was seen as a threat to internal validity. It was decided that, generally, one representative from each of the two treatment groups involved during each semester should teach each afternoon. For this reason, on the days when the investigator had previous commitments, no taping of self-supervision student teachers was done. Schedules of teaching for the two treatment groups were kept as close together as possible.

On the afternoons when self-supervising teachers were to be videotaped, the video-tape recorder was set up prior to the arrival of the student teacher with his class of five for the micro-teaching session. A research assistant placed the camera, recorder, and television monitor in the back of the room, facing the blackboard, teacher's desk, and five chairs. When the student teacher arrived with the students, they were welcomed to the university and an attempt was made to make them feel at ease in the presence of the camera.

The procedures to be used in the taping of the lesson were explained to everyone, a test was made to determine if the equipment was functioning properly, and then the final preparations for taping were begun. The student teacher was reminded that the lesson should be 20 minutes long. He was told that if, at the end of 20 minutes, when the machine is turned off, the lesson is not concluded, some attempt should be made to sum up so that the pupils would not be confused. Any questions concerning procedures were answered at this point. All answers given to these questions were given with the overall study in mind. All questions were answered

truthfully, and attempts were made to soothe any anxieties of the students or the student teachers. Yet at no time did the assistant allow the answers given to jeopardize the internal validity of the study.

At this point the video recorder was started and the assistant left the room. After 20 minutes the assistant returned to the room and turned the machine off immediately. At all times the lesson was drawn to an end within two or three minutes after the reentrance of the assistant. The pupils were thanked for their cooperation and given their stipend from project funds, for which they then signed a receipt. The students were reminded that they would be taken on a tour of the campus. At this time the assistant asked the student teacher for a percentage estimate of the amount of direct and indirect teaching he demonstrated in the lesson. The student teacher was shown how to operate the video-tape recorder and reminded that the tape was to be watched once and that the interaction behavior was to be analyzed by using the Flanders system. At this point the student teacher was left alone as the pupils began their tour of the campus with the assistant. After approximately 30 minutes the tour was concluded and the pupils were returned to the student teacher for transportation to their homes.

Throughout the year, it was made clear to self-supervising student teachers that video tapes of their lessons were for their use in self-improvement, and that no one in authority over them would view these video tapes. In order to adhere to this promise, the principal investigator did not view any tapes until after student teaching grades had already been recorded.

Traditionally supervised student teachers were observed by the principal investigator during each of their two 20-minute afternoon lessons; a supervisory conference lasting approximately 30 minutes was then held by the principal investigator with each student teacher. Pupil stipend, tour, physical arrangements, and other organizational procedures were identical to those reported above for the self-supervised lessons; however, there was no video-tape recorder in the room during

traditionally supervised lessons, and the principal investigator was present in the role of college supervisor.

Teacher-pupil interaction was recorded by the principal investigator using the Flanders categories for interaction analysis during the 20-minute afternoon lessons taught by traditionally supervised student teachers. Such interaction was also recorded at the end of each semester while the principal investigator viewed the video-taped lessons taught by self-supervising student teachers.

Throughout the year, every effort was made to approach the afternoon lesson activities and the student teaching seminars in such a way as to suggest that these experiences were simply an addition to the usual student teaching program. Procedures which might indicate an experimental group-control group delineation were carefully avoided.

## Data and Instrumentation

Units of content for all 20-minute afternoon lessons were developed by each student teacher from his own content area. Self-supervising student teachers became acquainted with the rationale for the use of the Flanders system as a tool for analysis of verbal teaching behavior and were given brief printed instructions for the use of the Flanders material. A one-hour lesson was prepared and taught by the principal investigator to train self-supervising student teachers in the use of the Flanders categories.

During this lesson (which was taught one week after subjects received the printed instructions) subjects were given the opportunity to practice using the Flanders system while observing a 10-minute lesson and to clarify their understanding of each category. No other training with the Flanders system occurred. Student teachers at Memphis State University typically are unfamiliar with the Flanders system of interaction analysis. Subjects knew and used only the numbered category system and were not familiar with the utilization of the matrix or other aspects of the Flanders system.

For consistent data in analysis of interaction behavior with the Flanders system, the

principal investigator in this study analyzed each lesson and supervised all lessons not to be taped. However, student teachers used their own analyses during self-supervision. No value judgments concerning the categories were expressed to student teachers by the principal investigator.

It is very difficult to estimate the number of interactions that may occur in a classroom. A more meaningful and less varying measure is the percent of any kind of interaction for individual teachers. From the Flanders scale, three measures were used by the principal investigator. The first dependent measure was a percent of indirect teaching. This measure consisted of 100 times the sum of interactions recorded for items 1, 2, 3, 4, and 9 divided by the sum total of all interactions. The second dependent measure was a percent of direct teaching formed by 100 times the sum of items 5, 6, 7, and 8 divided by the sum of all recorded interactions. The third measure was a measure of silence or confusion as designated by 100 times item 10 figures divided by the sum of all recorded interactions.

Percentages of "direct" and "indirect" teaching influence derived through use of the Flanders system tend to provide a more stable measure than the MTAI scores and consequently offered the prime criterion source.

The Minnesota Teacher Attitude Inventory (Form A) was administered to all subjects during the first week of the semester and again after 12 weeks of student teaching. It was made clear that scores on the inventory were not "good" or "bad" but simply points on a continuum and that these scores would have no bearing on student teaching grades.

Each student teacher estimated the amount of his indirect and direct influence behavior after each afternoon lesson (and before the supervisor's report in traditionally supervised lessons in Groups 2, 3, and 4) in terms of percentages, for example, "I think that I exhibited indirect influence about 70 percent of the time and direct influence about 30 percent of the time." Such estimates were compared with the principal investigator's ratings.

The Sony portable video-tape recorder

(model VC 2000) was used to tape the self-supervised afternoon lessons. Two Sony Dynamic microphones were used for sound reproduction. Although the Flanders system is a system of verbal interaction analysis which has been used by teachers with audio-tape recorders, there are often statements in the classroom which cannot be accurately interpreted unless the speakers can be seen. This fact is clearly exemplified by Flanders' instructions for the use of the system and especially by the descriptions for category number three. Consequently, video-tape recordings were used in this study.

## Analysis

For the study of relationships both pre-test and post-test MTAI scores provide the indices of attitudes. An interaction analysis, using Flanders' category system, was made for each of a student teacher's two lessons, providing two indices of indirect teaching for each student teacher. Two 2-way analysis of variance models were used on the indirect teaching scores collected during the first teaching encounter. The second analysis was made on the second set of indirect teaching scores. Both analysis of variance models were built around classification by supervisory treatment groups over four levels and classification by the three divisions of the MTAI scores.

The relationship of self-supervision to change in interaction behavior was ascertained through an analysis of covariance model made upon the second set of indirect teaching scores using the first set of indirect teaching scores as a covariant. This model was over the four levels of supervisory treatment. Another analysis of covariance model over four levels of supervisory treatments was made on the MTAI post-tests, using the MTAI pretests as covariants to study the attitude changes.

## Conclusions (Fall and Spring, 1967-68)

The conclusions given here are drawn with regard to the methods of traditional and self-supervision which were studied with sec-

ondary student teachers teaching academic subjects in a micro-teaching framework. Indirect teaching was determined through use of the Flanders categories for interaction analysis.

1. No significant relationship exists between attitudes and teaching behavior before supervisory treatment.

2. Supervisory treatment tends to promote a significant relationship between attitudes and teaching behavior.

3. Self-supervision tends to promote indirect teaching.

4. Self-supervision tends to promote higher scores on the MTAI.

5. Estimates by student teachers of the percentage of indirect teaching they exhibit in their lessons are very inaccurate under both traditional supervision and self-supervision.

6. No significant relationship exists between time and attitude change in student teachers supervised in a traditional manner.

The method of self-supervision studied would seem to provide a desirable alternative in the supervision of secondary student teachers where indirect teaching and pupil-accepting attitudes are sought. Self-supervision was received favorably by student teachers and their pupils as well as by college and school faculty members.

Further studies which could provide valuable information might include:

1. Studies comparing the effects of self-supervision and traditional supervision with elementary student teachers and with teachers in service;

2. Studies comparing the effects of self-supervision and traditional supervision when traditionally supervised student teachers and teachers in service are extensively trained in the use of the Flanders system; and

3. Studies examining the effect of time on the teaching behavior and attitudes of self-supervised student teachers and teachers in service. □

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## A Call for Papers

FREDERICK A. RODGERS \*

THIS RESEARCH SUPPLEMENT is *not* designed for publishing reviews of research issues, calls for needed research analysis, or analysis of widely quoted research studies. *It has been established for the reporting of data.* Criteria for selecting articles include:

1. The manuscript must report data. Included in the article must be some evidence to support the reliability of the measures used in the study.

2. The article should concern itself with the behavior of teachers (or their surrogates) and that of students as dependent variables. Behavior is taken to mean achievement scores, responses to questionnaires, etc.

3. The article should present a discussion of the results in such a manner that the meaning of the research is clear to readers. Some suggestions to meet this criterion include: a discussion of threats to the validity of the study's conclusion; an unambiguous definition of the independent variable; a distinction between the findings (data) of a study and the conclusion pertaining to the research hy-

potheses; a distinction between testing research hypotheses grounded in theoretical frameworks and answering research questions for which there exists no known theoretical base; and finally establishing a basis for qualified conclusions.

Authors are invited to submit manuscripts to Frederick A. Rodgers, Teacher Corps Office, 4 Washington Square Village, Room 1-0, New York, New York 10012.

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