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ABSTRACT

Designed to determine the feasibility of remote supervision of college students during their preservice teaching experience, this study focused on the use of three techniques of college supervision--face-to-face, audio-phone, video-phone--to ascertain their effects on student teacher improvement in specific teaching skills and in teaching confidence. Subjects for the study were 36 home economics student teachers who were engaged in their final preservice experience during winter quarter 1969 at Ohio University. Each student teacher and college supervisor was assigned to a supervisory technique, resulting in 12 student teachers involved in each technique. A pretest/posttest control-group designed provided the means for testing the hypothesesposed in the study. Results of the experiment indicated that alternative methods of college supervision are feasible in terms of student teacher improvement in specific teaching skills and teaching confidence. However, there was no significant difference in satisfaction with the three supervisory methods as expressed by the three college supervisors. (Authors)

RESEARCH AND DEVELOPMENT SERIES NO. 59

ASSESSMENT OF MICRO-TEACHING AND VIDEO RECORDING IN VOCATIONAL AND TECHNICAL TEACHER EDUCATION: PHASE VIII--

FEASIBILITY OF REMOTE SUPERVISION OF HOME ECONOMICS STUDENT TEACHERS

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National Center for
Educational Research
and Development

PREFACE

The Center has been engaged in a series of studies in the project, "Assessment of Micro-Teaching and Video Recording in Vocational and Technical Education," to find more effective and efficient ways of using these two techniques in programs of vocational teacher education. This report describes the eighth of the series, a field test of the feasibility and potential applicability of two remote supervision techniques used in conjunction with micro-teaching and video recording in a preservice teacher education program. It is hoped that vocational and technical teacher educators and researchers will find the results of the study useful and interesting.

The study was conducted by The Center through cooperation with the Division of Home Economics Education at The Ohio State University. We are indebted to Dr. Marie Dirks, chairman, and others in the division for their cooperation and assistance in providing the setting for the study.

We wish to acknowledge the following persons for their services in planning and completing the study: Dr. Calvin J. Cotrell, principal investigator, The Center; Dr. Julia I. Dalrymple, co-investigator, Professor, Home Economics Education, School of Home Economics, The Ohio State University; Dr. Charles R. Doty, associate investigator, The Center; and Patricia Smith Kelly, coordinator of the study and graduate research associate at The Center.

Appreciation for the assistance of the following reviewers is also acknowledged: Dr. Willard M. Bateson, professor and coordinator of industrial education, Wayne State University; Dr. Helen Nelson, professor, Department of Community Service Education, Cornell University; and Drs. Wesley E. Budke and Harold Starr, Research and Development Specialists, The Ohio State University.

Robert E. Taylor
Director
The Center for Vocational
and Technical Education

FOREWORD

This report is the eighth in a series conducted from September, 1967 to October, 1969 by The Center for Vocational and Technical Education. The series of studies in the project, "Assessment of Micro-Teaching and Video Recording in Vocational and Technical Teacher Education," were feasibility tests and demonstration and field tests conducted in collaboration with several vocational teacher education institutions. The investigators believe that those who are interested in developing and testing feedback techniques for teacher education will find these reports helpful.

The investigators wish to thank the 36 home economics student teachers, the 35 supervising teachers, and particularly the three college supervisors who participated in the study: Dr. Julia Boleratz, Mrs. Mary Andrian, and Mrs. Twyla Ridder.

The investigators are most appreciative of the encouragement and administrative support of this effort provided by the director of The Center, Dr. Robert E. Taylor; the coordinator of development, Dr. Donald C. Findlay; the coordinator of project utilization and training, Dr. Aaron J. Miller; and the coordinator of research, Dr. Edward J. Morrison. The assistance of a consultant, Dr. Dorothy C. Ferguson, in manuscript revision and synthesis of reviews, is gratefully acknowledged. We also appreciate the assistance of the many supporting personnel of The Center and particularly the editorial director, John Meyer, and his staff.

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SUMMARY

Designed to determine the feasibility of remote supervision of college students during their preservice teaching experience, the study focused on the use of three techniques of college supervision--face-to-face, audio-phone, video-phone--to ascertain their effects on student teacher improvement in specific teaching skills and in teaching confidence. There was also a concern for satisfaction with the method of supervision in which each was involved, as expressed by participants in the experience--college supervisors, student teachers, and supervising teachers.

Thirty-six home economics student teachers who were engaged in their final preservice experience during winter quarter 1969 at The Ohio State University participated in the study. They were supervised by three college supervisors. Each student teacher and college supervisor was assigned randomly to a supervisory technique, resulting in 12 student teachers involved in each technique.

Face-to-face supervision consisted of three contacts by the college supervisor in the school to observe and advise the student teacher. Each observation period was followed by a supervisory conference involving the student teacher, supervising teacher, and the college supervisor.

Audio-phone supervision involved taping five lessons which were mailed to the college supervisor for reviewing. This procedure included supervisory conferences conducted by telephone.

Video-phone supervision involved recording five lessons on videotapes and mailing these to the college supervisor for review prior to a follow-up supervisory conference by telephone.

A pretest/posttest control-group design provided the means for testing the hypotheses posed in the study. Several instruments were developed or adapted to collect the primary data--a Confidence Scale; three Critique Forms for evaluating the three teaching skills: introducing a lesson, demonstrating a manipulative skill, oral questioning; and a Satisfaction Scale.

Analyses of variance and covariance, "t" tests, item analyses, and rater reliability tests were computed to analyze the data statistically. A question concerned with time requirements was also answered, based on records kept by the college supervisors.

Results indicated that alternative methods of college supervision are feasible in terms of student teacher improvement in

specific teaching skills and teaching confidence. All participants were satisfied with the method of supervision in which they were involved, and student teachers agreed with their supervising teachers on satisfaction within the same supervisory treatment groups. There was no difference at a significant level in satisfaction with the three supervisory methods as expressed by the three college supervisors.

Evidence indicated that the use of alternative methods of college supervision was feasible for this group and offered implications for utilization in teacher education programs. Resources of educational media and time offer choice in determining what method of college supervision would be most beneficial for an individual student teacher in a particular student teaching situation in terms of improvement in teaching behavior and teaching confidence concomitant with satisfaction.

ASSESSMENT OF MICRO-TEACHING AND VIDEO RECORDING IN VOCATIONAL AND TECHNICAL TEACHER EDUCATION: PHASE VIII--

FEASIBILITY OF REMOTE SUPERVISION OF HOME ECONOMICS STUDENT TEACHERS

CHAPTER I

BACKGROUND OF THE STUDY

Supervision in teacher education is undergoing constant change, especially as applied to student teachers during that period of time when they are actively engaged in teaching in a real school setting. The clinical experience is regarded by many educators as an important phase in the professional program which often determines the kind of teacher the student will become. Under the direction of a college supervisor, the student teaching program focuses on the development of teachers who can function effectively and contentedly in a classroom situation. Traditionally, the college supervisor has had face-to-face contact with the student teacher and/or supervising teacher in the elementary or secondary schools in which the clinical experience occurs, except in cases where school systems accommodate many student teachers under the supervision of local supervisors.

Apparent limitations inherent in the exclusive use of face-to-face supervision have been recognized for some time:

- Supervision by university staff often necessitates one-half to a full day of supervisory time for each contact in the teaching center, including nonproductive time required for travel, with the uncertainties of bad weather.

- Student teaching centers tend to be located near the university or grouped in accessible areas to avoid waste in travel time, thus possibly preventing excellent supervising teachers from participating in the program.

- The frequency of observation and the availability of the college supervisor for guidance are generally restricted to a limited number of contacts, with telephone and/or written correspondence.

- Limited contacts sometimes place unnatural stress or strain on all members of the clinical experience triad: the college supervisor, the supervising teacher, and especially the student teacher.

The increasing numbers of students in many teacher education programs, necessitating great travel distances to student teaching centers, without a concomitant increase in teacher education

faculty, have resulted in a critical shortage of qualified personnel for supervision of student teachers. It is essential, therefore, to find ways of insuring the effectiveness of the student teaching program in spite of such conditions. As quantitative demands increase, qualitative supervisory effectiveness must not be jeopardized.

> There has been shown to be considerable agreement among college supervisors, supervising teachers and student teachers from the home economics education departments of institutions in four different states that the college supervisor performs a unique function and is perceived as a vital, necessary part of the student teaching situation (Dirks, Elliott, Lowe, and Nelson, 1967, p. 36).

Technological changes and development of new instructional media are helping to modify the role of the college supervisor. The use of audio and videotape recorders for observation and analysis by professional personnel, with the use of conference telephones for interpersonal contact, opens up new avenues for remote observation of the student in action and for conducting supervisory conferences. Use of video recorders enhances the feedback process in supervision, as illustrated by McDonald and Allen (1966) in their experiment on the training effects of feedback and modeling procedures on teaching performance. Their objective was to compare the effects of self-evaluation of teaching performance with feedback provided by a supervising instructor. Results supported the educational theory that increased knowledge about performance facilitates learning. Olivero commented that "availability of portable video recorders may enable educators to investigate previously unanswered questions related to supervision as part of the teacher training programs" (1964, p. 5).

If feasible and effective, the use of video and audio recording with telephone contact could allow the college supervisor better use of time, permit optimum interaction per man-hour involvement, and relieve the emotional pressures that sometimes hinder objective evaluation.

All present limitations would not necessarily be removed by the use of conference telephones and audio and video recorders. In fact, other equally serious limitations may be substituted. However, it may be that some combination of these alternative methods of supervision can be effective without loss of the benefits that accrue from personal contact among the members of the student teaching triad.

THE SERIES OF STUDIES

The Center for Vocational and Technical Education has been engaged in a series of studies to assess the use of micro-teaching and video recording in vocational and technical teacher education. Three initial studies were conducted to test, under simulated conditions, the feasibility of video recording as a feedback device in preservice and inservice teacher education and included variations on micro-teaching, learner populations, and evaluation instruments. Eighth in the series, the present study incorporated the results of the prior studies and was designed as a field test of these innovations in vocational teacher education.

PURPOSE OF THE STUDY

In view of the recent developments in educational media and their potential for use in remote supervision of student teachers, the study was designed to test the feasibility and applicability of micro-teaching with audio and video recording in a program of supervision of student teachers in home economics education. Specifically, the study was concerned with the following three variations of techniques: face-to-face supervision, audio recording with telephone contact (audio-phone) supervision, and video recording with telephone contact (video-phone) supervision.

RESEARCH QUESTIONS

The following questions were formulated for investigation:

Teaching Performance:

1. Are the effects of the three supervisory techniques different in terms of student teachers' performance on three specific teaching skills--introducing a lesson, demonstrating a manipulative skill, and oral questioning?

2. Do student teachers with a given initial confidence level perform better under a particular supervisory technique?

Confidence Level:

3. Are the effects of the three supervisory techniques different in terms of the student teachers' growth in teaching confidence?

4. Does any combination of supervisory technique and initial level of teaching confidence result in higher confidence scores?

Expressed Satisfaction:

5. Do the student teachers express differences in satisfaction with their particular supervisory experiences?

6. Do student teachers with a given initial confidence level express greater satisfaction under a particular supervisory technique?

7. Do the supervising teachers express differences in satisfaction with the particular supervisory technique each experienced?

8. Are there differences between the student teachers' and supervising teachers' expressed satisfaction with the supervisory technique each experienced?

9. Are there differences in the college supervisors' expressed satisfaction with the supervisory techniques?

Time Requirements:

10. Are there differences in the amount of college supervisory time required for each technique?

REVIEW OF RELATED LITERATURE

Teacher educators in all fields have expressed the concern that teachers be well equipped with the skills and behaviors needed to cope with classroom situations. Research has indicated that the development of these skills occurs during the student teaching experience (Allen and Ryan, 1969; Conant, 1963; Perlberg, 1968; Wehmeyer, 1966; and Young, 1969). The target of every teacher behavior is a responsive student behavior, and one of the goals of teacher education is to help the novice teacher widen his repertoire of classroom maneuvers (Joyce and Harootunian, 1967).

Media and development of teaching skills. Educational media can add a new dimension to the teacher education program by aiding the student in analyzing teaching skills, providing a means of objective feedback in a teaching-learning situation, and enhancing the effectiveness of the college supervisor in expediting the relationship.

> Ways, therefore, of considering the possible functional contributions of new media to teacher education have meaning only when they keep the realities of circumstances and urgency of need in mind, as well as functional characteristics of the new media (Schueler and Lesser, 1967, pp. 26-27).

Tintera (1960) studied three student teaching critique methods used by supervising teachers: conventional supervisor observations and conference, supervisor observation with three audio tape recordings used in the conference, and supervisor observation and conference supplemented with three kinescopes of student teacher performance. He concluded that there was no difference in performance on pedagogical skills, except that in a follow-up after six months of teaching the teachers in the experimental groups rated higher than the control group on the same measurement instruments.

Johnson (1966) used a programmed videotape to prepare beginning teachers to observe and report intended pupil performance in the classroom. The results revealed that the teachers who were provided "prompts," opportunity to practice, and knowledge of how they were doing performed better than others.

Olivero (1964) reported that observing teaching performance on recorded videotapes, though not significantly superior to live observation of teaching performances in the classroom, was satisfactory.

The use of educational media in the improvement of teaching skills seems to be well supported in the studies cited. Recordings lack the quality of immediacy, although this problem can be overcome with fast replay action on recorders and by immediate scheduling of conferences. The problem seems to be one of discovering what techniques of recording observations, used in what ways, will enhance the development of teaching skills as an essential functional characteristic in teacher education programs (Schueler and Lesser, 1967).

Acheson (1964) and Olivero (1964) reported that supervisory conferences using videotape recordings of teacher performance resulted in greater change in teacher behavior than verbal feedback alone. Subsequent studies in the Stanford Education Program revealed similar results (Allen and Young, 1966; McDonald and Allen, 1966; Orme, 1966). Allen and Young (1966) also reported the procedure of putting cues on a second sound track of a videotape for purposes of providing a type of remote supervision.

Media and their function in college supervision. The new media offer college supervisors alternative methods for observing student teachers as well as methods for providing immediate feedback about teaching performance. Though the use of audio and audiovisual media allows for an increasing emphasis on student teacher self-evaluation, studies also show that using a contingent focus is most effective in bringing about desired behavior change.

After extensive work with micro-teaching and the use of the videotape recorder in analysis of teaching behavior, Allen and

Ryan (1969) advanced a potentially effective procedure in which the supervisor concentrated on one or two suggestions during the supervisory session. The technique added the dimension of focus to conferences and provided the student with specific goals toward which to work prior to the next supervisory session. In their study of the effect of the use of tape recorders on prospective teacher's self-evaluation of teaching performance, Fuller and Veldman (1963) found that supervisor feedback incorporating a contingent focus was more useful for improvement in self-evaluation than self-ratings alone.

Cooper (1967) found that audio recordings increased the responsibility of the student to improve himself, aided the college supervisor in identifying weaknesses for the student teacher, and provided for the development of a tape library for use by other student teachers. Acheson (1964) reported that supervisors agreed that audiovisual playback contributes to a productive conference. In addition, pilot studies on "tele-supervision" completed at the University of Wiscorsin showed positive results in the use of the "hands free" telephone setup for supervisory conferences (Dalrymple and White, 1965; White, 1970).

The use of an integrated feedback system designed to enable student teachers to analyze their teaching, set goals for improvements, and monitor their own progress was examined by Joyce (1967). The feedback system consisted of behavioral analyses of teaching and the use of films and audio and videotapes. Joyce found that the feedback system seemed to compel attention to reality and that frequency of supervision did not affect growth made nor difficulties encountered by the student teacher.

In reviewing the role and function of media in relation to college supervision, several tentative conclusions may be drawn:

- Media are "here to stay" and have become useful as one means of analyzing teaching behavior.
- The use of media can enhance observation techniques and provide realistic feedback about performance.
- Student teachers, although aided in becoming more proficient by using media for self-evaluation, still need the guidance, direction, and understanding of supervisors during the student teaching experience.
- Media have been shown to increase the effectiveness of supervisory conferences by allowing the participants to start from a common understanding and by adding a specific focus to discussion.

- The use of a systems approach, such as micro-teaching (breaking a complex activity into elements, involvement, practice, and active participation), increases effective learning.

- An integrated feedback system allows for reduction of on-the-spot contacts by supervisors but, at the same time, creates the necessity for careful role definition and preparation.

CHAPTER II

PROCEDURES IN THE STUDY

In cooperation with the Division of Home Economics Education in the School of Home Economics at The Ohio State University, the study was conducted by The Center during the winter quarter of 1969 and involved the home economics education students enrolled in the clinical teaching experience.

PARTICIPANTS AND SELECTION PROCEDURES

The participants in the study included student teachers in home economics education, their supervising teachers, three college supervisors, and three teacher educators who served as the panel of judges. The selection procedures used were dictated to some extent by circumstances of the design of the study and the student teaching procedures of the University.

Student teachers. Of the home economics education students enrolled in the clinical experience winter quarter, the 36 who had completed a home economics methods course and had similar formal educational experiences prior to student teaching were selected to participate in the study. These student teachers had previously observed live and videotaped classroom instruction and had experience making and viewing videotapes of themselves. The final assignment of student teachers to cooperating schools resulted in the following conditions: 27 student teachers were assigned to separate schools, three to one school, and two to each of three schools. Therefore, the study involved 36 student teachers, 35 supervising teachers, and 31 cooperating schools.

College supervisors. Three college supervisors of student teaching in home economics education participated in the study and were randomly assigned to the three treatment groups and to the students in each group. The two full-time college supervisors were assigned to 15 students each (five in each treatment group), and the half-time supervisor was assigned to six students (two in each treatment group).

Panel of judges. A three-member panel of judges was selected to evaluate the pretest and posttest videotaped teaching sessions. Their professional backgrounds included teaching and supervisory experience with some previous contact with video techniques.

SUPERVISION TECHNIQUES

The three treatment groups in the study were determined by the techniques used in the supervision of the student teachers. The three groups were:

Face-to-face supervision--The college supervisor made the usual three contacts in the school to observe and advise the student teacher. During at least two of the supervisory contacts, the student teacher employed the three teaching skills emphasized in the study: demonstrating a manipulative skill, introducing a lesson, and oral questioning. Evaluations were recorded on the critique forms which were used later as the basis for the supervisory conference. The supervisor made no more than three suggestions for improvement to the student teacher.

Audio-phone supervision--During the quarter, five lessons at least 15 minutes long were audio tape-recorded and sent to the college supervisor. At least two of the lessons included the three teaching skills. After each lesson the supervising teacher and the student teacher replayed the tape independently and completed the critique forms. The audio tape was then mailed to the college supervisor on campus. Upon receiving the audio tape, the college supervisor listened to the recorded lesson, completed the critique forms, and noted a maximum of three suggestions for improvement for the student teacher, which were to be discussed during the supervisory telephone conference. The college supervisor called the student teacher and supervising teacher for a three-way supervisory telephone conference in which the critique forms as checked by the members of the triad were used as the basis for discussion. Additional conference calls were made by any member of the triad when desired.

Video-phone supervision--Five videotape recordings of lessons at least 15 minutes long were made by the student teacher-supervising teacher team and sent to the college supervisor. A minimum of two recordings contained lessons incorporating the three teaching skills emphasized. After each lesson, the student teacher and supervising teacher replayed the videotape and independently completed the critique forms. The videotape was then mailed to the college supervisor on campus. After receiving the tape, the college supervisor viewed the lesson, completed the critique forms, and noted a maximum of three suggestions for improvement. Arrangements were made for a supervisory telephone conference in which all members of the triad discussed the items on the critique forms and the suggestions for improving the student teacher's use of the teaching skills. Other conference calls were encouraged if desired by any member of the triad.

EXPERIMENTAL DESIGN

The study was based on a pretest/posttest control-group design (Campbell and Stanley, 1963). Randomization assured unbiased assignment of subjects to treatment groups. Hopefully, the sample size of 36 gained some statistical precision by first assigning each student teacher to a high, medium, or low confidence level group based on scores received on the Confidence Scale pretest. Then the student teachers were randomly assigned to one of the three supervisory treatment groups so that each group (N = 12) was comprised of four student teachers from each of the three confidence-level groups.

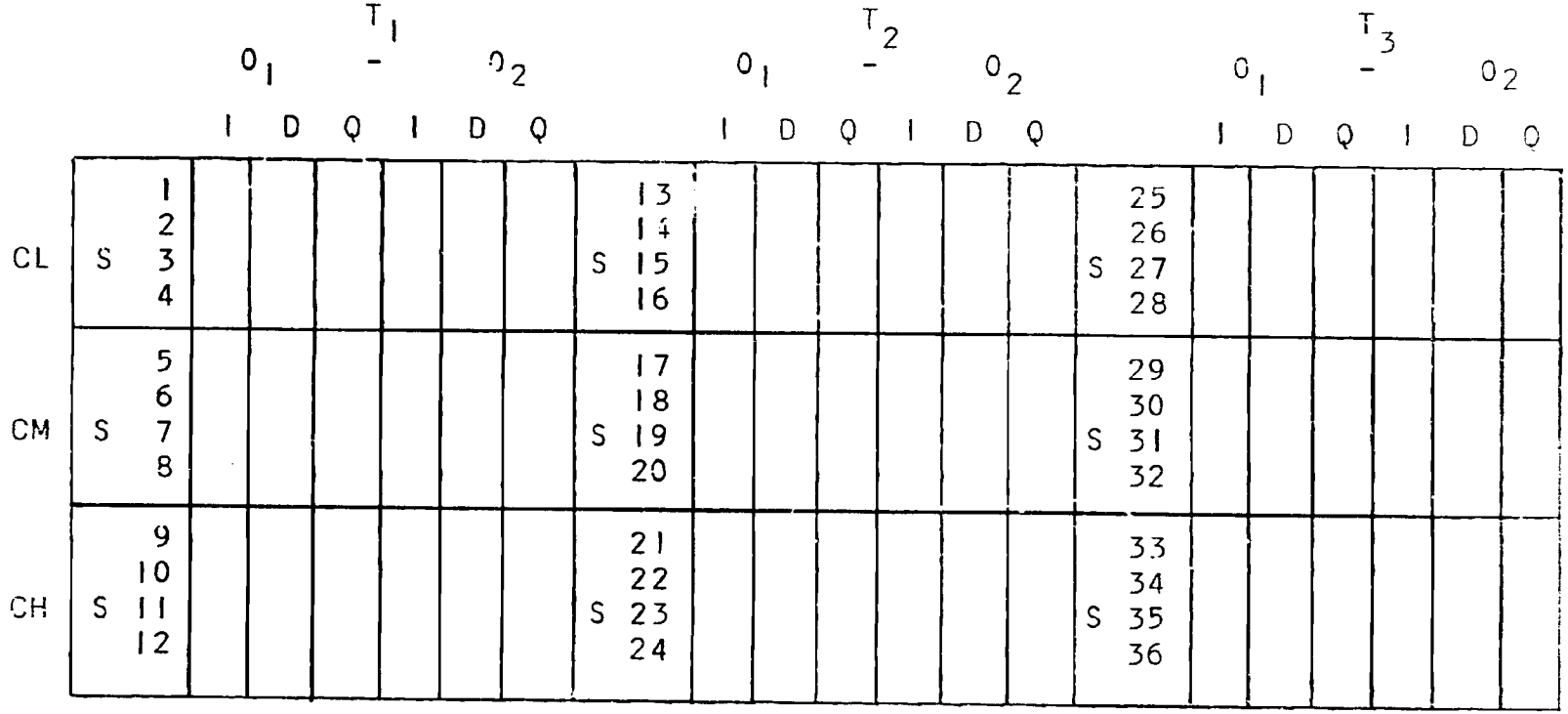
The design was set up to provide the framework for testing the relationships among the variables. The three independent variables were college supervisor, supervisory treatment group, and confidence level. The three dependent variables were the posttest scores on the Confidence Scale, the Satisfaction Scale scores, and the ratings on the three critique forms. Since the three independent variables each contained three levels, a 3 x 3 factorial design was appropriate (See Figure 1).

MEASUREMENT INSTRUMENTS

Three types of instruments were developed or adapted for data collection: a Confidence Scale; three Critique Forms on the teaching skills; and three forms of a Satisfaction Scale, which included a short questionnaire section.

Confidence Scale. The Confidence Scale (Vlcek, 1965), a 9-item instrument, was used for two purposes: 1) the scores on the Confidence Scale pretest were used as a blocking variable in setting up the experimental design and 2) the pretest and posttest scores were used to determine if the student teacher's level of confidence in ability to teach had changed during the period of student teaching in which she had been involved in a specific method of supervision (See Appendix A).

Critique Forms. The three critique forms (Cotrell and Doty, 1971) were used by the panel of judges while viewing the pretest and posttest videotapes of the teaching sessions to assess student teacher competence in introducing a lesson, demonstrating a manipulative skill, and oral questioning. The forms were comprised of two scales: a quantitative scale which measured whether a factor was (score of 1) or was not (score of 0) accomplished in the taped micro-teaching situation and a qualitative scale which allowed for rating how well each factor was accomplished. Each factor was rated: 0 = did not accomplish, 1 = very poor, 2 = poor, 3 = average, 4 = very good, or 5 = excellent. In addition to the factor or trait to be rated, a definition or example was given to increase



Criterion Measure: Teaching Skills

T = Treatment group (T_1 = face-to-face supervision, T_2 = audio-phone supervision, T_3 = video-phone supervision)

C = Confidence level (L = low; M = medium; H = high)

S = Subjects (36 home economics student teachers)

O = Repeated measure of teaching skill (pretest (O_1) to posttest (O_2))

I = Introducing a lesson
D = Demonstrating a manipulative skill
Q = Oral questioning

Figure 1. 3 x 3 Factorial Design

uniformity of rater interpretation. There were eight factors on the critique form on introducing a lesson, seven on the critique form for demonstrating a manipulative skill, and eight on the critique form for oral questioning. Thus, all student teachers were rated on a total of 23 factors for the three teaching skills on both the pretest and posttest videotaped teaching sessions. In addition, the critique forms were used by the college supervisors, the supervising teachers, and the student teachers to evaluate all observed teaching sessions (See Appendix B).

Satisfaction Scale. The Q-Sort for Perception of Satisfaction in Supervision (Dalrymple and White, 1965; White, 1970) was adapted and redesigned as a paper and pencil rating scale for the study. Three separate forms were used to collect information relative to satisfaction with the supervisory methods as expressed by the supervising teachers, the college supervisors, and the student teachers. All three groups of participants completed the forms at the end of the student teaching period (See Appendix C).

CONDUCT OF THE STUDY

Pretest procedures. Prior to the start of the student teaching period, the participants, including administrators of the cooperating schools, took part in orientation sessions to acquaint them with the objectives and procedures of the study.

The 36 student teachers completed the Confidence Scale forms and prepared for and made a videotape of a five- to 10-minute micro-teaching session in which they each taught a complete lesson demonstrating a manipulative skill. High school students from the Columbus area served as pupils in the micro-teaching sessions. Both sets of data, the ratings on level of confidence and the videotaped lessons, provided the pretest information in the study. After the pretest videotape sessions were completed, the student teachers were provided with additional information on and copies of the critique forms to use as an instructional resource for becoming aware of the factors considered important in the effective performance of the three teaching skills.

Telephone conferences and equipment. For the two remote supervisory treatment groups, the conferences were held by telephone. Each school involved in these two treatment groups received a Fanon telephone amplifier, which consisted of a cradle for the handset and a speaker. The incoming voice was amplified and, by having the receiver on the amplifier cradle, the participants in the "conference" had their hands free for referring to particular evaluation sheets or written materials and to take notes when needed. The telephone conferences allowed for three-way supervisory conferences as well as two-way conferences. No

more than 10 calls and five hours of telephone conversation took place to discuss the audio or videotaped teaching sessions.

Video recording equipment and training. Two-hour training sessions were held to acquaint the student teachers involved in the video-phone supervision group with the Shibaden Video Recording System. A technical assistant demonstrated the recorder, camera, and the electrical hookup system, as well as the process for recording and playback. In turn, each student teacher had an opportunity to set up the system, record, and playback. Later, the student teacher demonstrated the video recording system to the supervising teacher. A training session was also held for the college supervisors to learn to use the video recording system. A technician was on call throughout the research project to be of assistance to all participants.

Participants in schools in close proximity shared the videotape recording systems. Those in outlying districts who were farther than 35 miles to the nearest videotape recording system were provided systems of their own. The system included the following items: a Shibaden videotape recorder (SV-700), a tripod, a CCTV camera (Solid State: Model HV-15), a portable television receiver, a microphone, and three half-inch one-hour videotapes.

Posttest procedures. At the end of the nine-week student teaching period, the 36 student teachers returned to the campus where they completed the posttest forms (Confidence and Satisfaction Scales) and recorded another videotaped five- to 10-minute micro-teaching session. They again taught a complete lesson demonstrating a manipulative skill to high school students.

At this point, the supervising teachers and the college supervisors were asked to complete the Satisfaction Scale and return it to the project coordinator within two weeks.

Panel of judges' training. The three teacher educators who served as the panel of judges in the study also attended a training session to acquaint them with the critique forms and to practice rating videotaped teaching sessions. Once rater reliability (Winer, 1962) was established at .82 correlation, the panel of judges rated the 72 videotapes of the 36 student teachers in the three supervisory treatment groups. Correlation coefficients were also computed to determine inter-rater reliability on the videotapes in the study (See Appendix D).

The tapes were evaluated at random in the total group, and panel members were not informed of whether they were viewing pretest or posttest sessions nor of the supervisory method with which a particular student teacher had been involved.

PROCEDURES FOR DATA ANALYSIS

The data for testing the null hypotheses posed by the research questions (p. 5-6) were collected from the panel of judges' ratings on the three critique forms for the teaching skills and from the participants' responses on the Confidence Scale and the Satisfaction Scale.

The biomedical computer program BMD02V was selected to compute the analysis of variance on the pretest and posttest scores on the Confidence Scale. Values assigned to the classifications on the scale to meet the assumptions of an interval scale were: very confident = 4, confident = 3, uncertain = 2, and very uncertain = 1.

The Satisfaction Rating Scale was based on an interval measurement, nine highly characteristic to one highly uncharacteristic factor. Analysis of variance (BMD07V) was used to determine the significant difference for expressed satisfaction by all participants among the three supervisory treatment groups. Agreement between student teachers and supervising teachers in the same supervisory treatment group on expressed satisfaction with the type of supervision received was also determined.

Item analysis was carried out for the three critique forms on both the quantitative and qualitative scales. The output from Simple Item Analysis (Goode, 1967) on both scales provided the measure of item reliability on the pretest and posttest critique form ratings by the panel of judges.

For the two-way analysis of covariance the Biomedical computer program BMD03V was selected. The test was computed on the posttest criterion test scores (the three teaching skills), adjusted for variations in pretest scores. Decisions to reject or fail to reject the null hypotheses were made at the .05 level of significance.

CHAPTER III

RESULTS OF THE STUDY

The results of the data collection and analysis are presented in this chapter. Included are the findings relative to the effects of the three supervisory techniques--face-to-face, audio-phone, and video-phone--on teaching performance and level of confidence, the expressed satisfaction of the participants, and college supervisory time requirements.

EFFECTS ON TEACHING PERFORMANCE

The first two research questions, which dealt with the effects of the three supervisory techniques on teaching performance, were stated as null hypotheses and tested by comparing mean performance scores as measured by the panel of judges' pretest and posttest ratings. An analysis of variance was computed on the pretest scores to determine if the use of analysis of covariance was appropriate; results showed no significant differences among the treatment groups, confidence levels, and interaction effect between treatment and confidence-level groups. Using treatment group and initial level of confidence as the independent variables, an analysis of covariance was computed on the posttest mean performance scores with pretest scores as the covariate (See Table 1). Results indicated that there were no differences at the .05 level of significance in the effects of the three supervisory treatment groups in terms of improvement in teaching performance (Research Question 1).

Comparisons were also made within the same confidence levels across treatment groups, as illustrated in Figure 2. Results indicated that there were differences among the confidence-level groups on the degree of accomplishment scale for the skill of oral questioning (Table 1). The grand mean score for the low confidence-level group of student teachers was 4.72; for the medium confidence-level group, 3.22; and for the high confidence-level group, 3.79. The greatest difference among the confidence-level groups occurred, therefore, between the student teachers in the low and medium confidence-level groups, on the degree of accomplishment scale for the skill of oral questioning.

TABLE I

Analysis of Covariance
Posttest Mean Performance Scores
on Three Critique Forms, Both Scales
(N = 36)

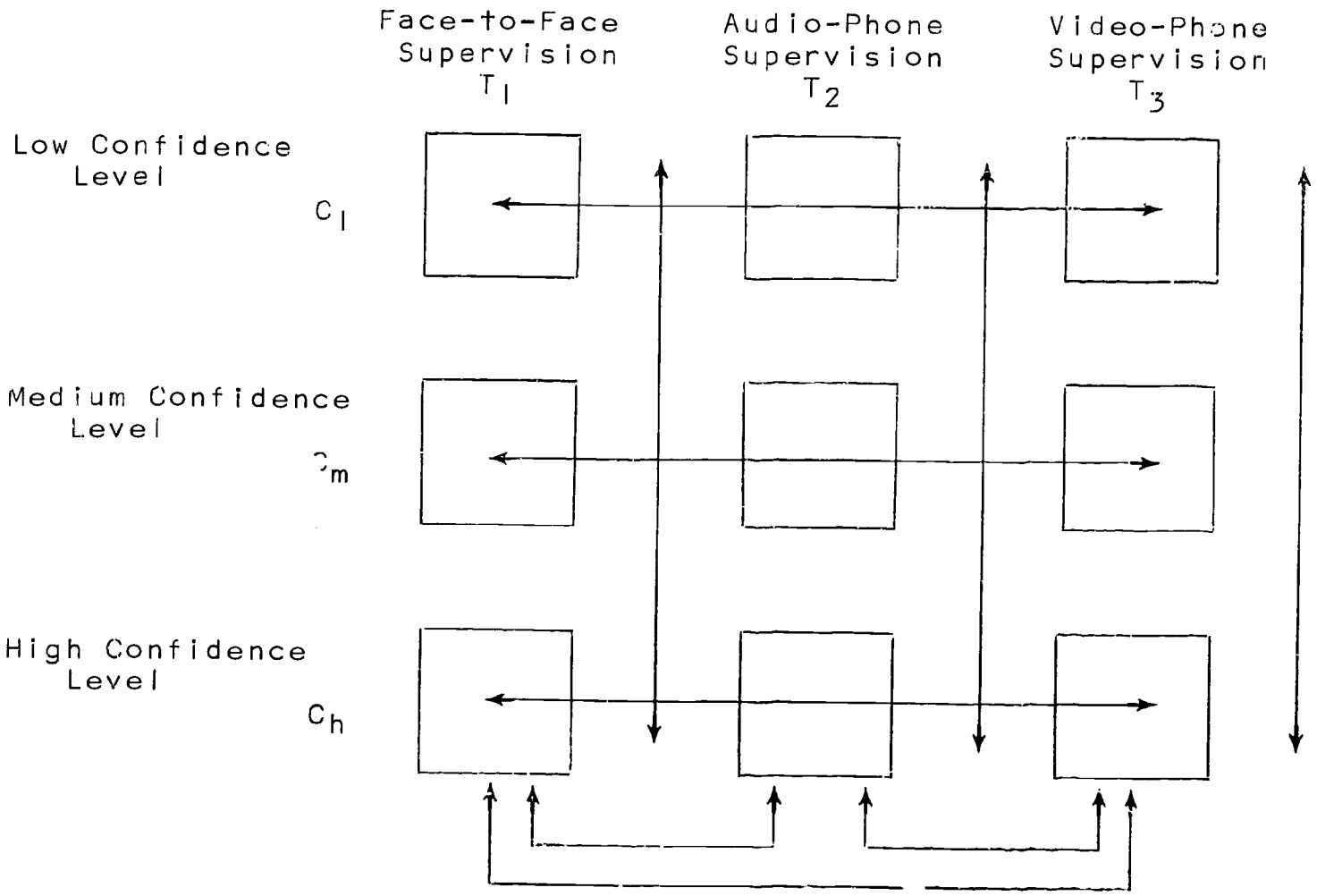
SKILL	SOURCE OF VARIANCE	ACCOMPLISHED SCALE S.S.	M.S.	d.f.	F	DEGREE OF ACCOMPLISHMENT SCALE S.S.	M.S.	d.f.	F
Introducing a Lesson	Treatment Groups	0.07	0.04	2	1.30	0.89	0.44	2	.52
	Confidence Level	0.12	0.06	2	2.07	4.04	2.02	2	2.39
	Interaction (Treatment x Confidence)	0.04	0.01	4	.31	2.28	0.57	4	.68
	Within Groups	0.72	0.03	26		21.97	0.84	26	
Demonstrating a Manipulative Skill	Treatment Groups	0.00	0.00	2	1.44	0.34	0.17	2	1.31
	Confidence Level	0.00	0.00	2	.31	0.22	0.11	2	.84
	Interaction (Treatment x Confidence)	0.00	0.00	4	1.04	1.22	0.31	4	2.33
	Within Groups	0.01	0.00	26		3.39	0.13	26	

Continued

TABLE I (Continued)

Oral Questioning	Treatment Groups	0.15	0.08	2	.71	3.16	1.58	2	.69
	Confidence Level	0.58	0.29	2	2.73	17.95	8.98	2	3.90*
	Interaction (Treatment x Confidence)	0.12	0.03	4	.29	4.74	1.18	4	.52
	Within Groups	2.77	0.11	26		59.77	2.30	26	

*Significant at .05 level if $\geq$ 3.27 (2, 26 d.f.); $\geq$ 2.74 (4, 26 d.f.)



Vertical arrows: 3 supervisory treatment groups
Horizontal arrows: 3 confidence-level groups
Bottom arrows: comparisons within confidence levels

Figure 2. Diagram of Comparisons Within Confidence Levels

Table 1 also indicates that there were no interactions of treatment group and confidence level at a significant level on the posttest performance scores. It is apparent that no combination of supervisory technique and confidence level changed their teaching performance (Research Question 2).

EFFECTS ON CONFIDENCE IN TEACHING ABILITY

Research questions 3 and 4, which dealt with the effects of the three supervisory techniques on confidence in teaching ability, were stated in null hypothesis form and tested by an analysis of variance of the mean scores achieved on the Confidence Scale. The analysis of variance computed on the pretest scores revealed that there were significant differences in initial confidence level, which indicated that the use of these scores as the blocking variable was successful (See Table 2). Also, it was found that no differences existed at a significant level among the treatment groups. Therefore, the conditions were met for the analysis of variance on posttest scores (See Table 3). The results of the test indicated that there were no differences among the three supervisory treatment groups at a significant level in terms of change in confidence (Research Question 3).

Comparisons were made on the posttest scores within the same confidence levels across treatment groups and significant differences were found (Table 3). The grand mean scores for the low confidence-level group of student teachers was 2.87; for the medium confidence-level group, 3.12; and for the high confidence-level group, 3.50. The greatest difference among the confidence-level groups occurred, therefore, between the student teachers in the low and high confidence-level groups.

No interactions at a significant level were found, indicating that no combination of supervisory technique and initial level of confidence changed their teaching confidence (Research Question 4). Paired t-tests computed on the pretest to posttest confidence-level scores showed that all but the high confidence-level group with face-to-face supervision improved significantly in level of confidence. (Note that the paired t-test score acquired by this group, at 3.17, was close to being significant at the .05 level; see Table 4). The results of this analysis indicated that there was growth in the student teachers' level of confidence regardless of the supervisory technique involved.

SATISFACTION WITH SUPERVISORY TECHNIQUES

Research questions 5-9 were concerned with the participants' satisfaction with the supervisory techniques. At the end of the student teaching period, each participant completed the Satisfaction

TABLE 2

Analysis of Variance
Confidence Scale Pretest Scores
(N = 36)

SOURCE	S.S.	M.S.	d.f.	F
Treatment Group	0.01	0.00	2	.14
Confidence Level	2.47	1.24	2	37.00*
Interaction (Treatment x Confidence)	0.13	0.03	4	.99
Within Groups (Error Term)	0.90	0.03	27	

*Significant at .05 level if $\geq$ 3.35 (2, 27 d.f.); $\geq$ 2.73 (4, 27 d.f.)

TABLE 3

Analysis of Variance
Confidence Scale Posttest Scores
(N = 36)

SOURCE	S.S.	M.S.	d.f.	F
Treatment Group	0.05	0.02	2	.26
Confidence Level	2.42	1.21	2	12.80*
Interaction (Treatment x Confidence)	0.23	0.06	4	.61
Within Groups (Error Term)	2.55	0.09	27	

*Significant at .05 level if $\geq$ 3.35 (2, 27 d.f.); $\geq$ 2.73 (4, 27 d.f.)

TABLE 4

Paired "t" Test--Confidence Scale on Mean Scores by Confidence-Level Group for Each Treatment Group

Confidence Level	Face-to-Face Supervision (Treatment Group 1)	Audio-Phone Supervision (Treatment Group 2)	Video-Phone Supervision (Treatment Group 3)
Low	9.11*	5.38*	3.24*
Medium	7.43*	6.62*	8.64*
High	3.17	4.41*	6.64*

*Significant at the .05 level if $\geq$ 3.18 (3 degrees of freedom)

Scale to express feelings of satisfaction and/or dissatisfaction with the technique of supervision in which each was actively involved. Responses to a series of five questions yielded information from members of the triad in relation to the three supervisory techniques on degree of satisfaction, correlation of satisfaction with confidence level, advantages and disadvantages of the techniques, and suggestions for supervisory improvement. Analysis of the scores on the Satisfaction Scale provided the quantitative information required to answer the five research questions, which were stated in null hypothesis form and tested by means of analysis of variance.

Student teacher satisfaction. There was a difference among the three treatment groups at the .05 significance level in terms of the student teachers' expressed satisfaction with their supervision techniques (Research Question 5), as indicated by the results of the analysis of variance (See Table 5). As Table 5 also shows, there was no difference, though, in student teacher satisfaction among the confidence-level groups. Furthermore, there were no interactions of confidence-level group and supervisory technique at a significant level, which meant that no combination of the two changed their satisfaction scores (Research Question 6).

Some of the responses and comments made by the participants perhaps shed some light on the reasons for differences in satisfaction among the groups of student teachers. Replies concerned

TABLE 5

Analysis of Variance
Satisfaction Scale
Student Teachers

SOURCE	S.S.	M.S.	d.f.	F
Treatment Group	13375.06	6687.53	2	3.63*
Confidence Level	131.72	65.86	2	.04
Interaction (Treatment x Confidence)	6610.44	1652.61	4	.90
Within Groups	49695.00	1840.56	27	

*Significant at the .05 level if $\geq$ 3.35 (2, 27 d.f.); $\geq$ 2.73 (4, 27 d.f.)

with the advantages and disadvantages of a particular supervisory technique were related to satisfaction or dissatisfaction, and comments provided plausible reasons for satisfaction where visual contact was involved, although not a true cause and effect relationship.

The student teachers in the face-to-face and video-phone supervision groups both expressed several advantages to their supervision technique:

Face-to-Face Supervision Group | Video-Phone Supervision Group

Similar Comments

1. College supervisor could observe pupil reactions.

Dissimilar Comments

1. Immediate feedback
2. Not pressed for time
3. Face-to-face contact, non-verbal reaction

1. Fairer because of greater number of contacts
2. More freedom to show college supervisor strong points

4. Explanation of problems to college supervisor easier

3. Stimulated to do best work; self-evaluation

4. Relief of tension of college supervisor dropping in

The audio-phone group listed twice as many disadvantages as the video-phone group and three times as many as the face-to-face group. Typical comments had to do with equipment problems, isolated and mechanical samplings of lessons, and the college supervisor not having a true picture of the classroom nor an adequate basis for evaluation.

These comments revealed that the student teachers were concerned about "how much" and "what" the college supervisor observed or heard. The student teacher's concern that an "isolated sampling of my lesson" was the basis for "evaluation of my teaching" could very well account for a feeling of dissatisfaction.

Supervising teacher satisfaction. There was a difference among the three treatment groups at a significant level in terms of the supervising teachers' expressed satisfaction with the supervision techniques in which they were involved (Research Question 7), as indicated by the analysis of variance (See Table 6).

TABLE 6

Analysis of Variance
Satisfaction Scale
Supervising Teachers

	S.S.	M.S.	d.f.	F
Between Groups	16173.50	8086.75	2	4.78*
Within Groups	55855.25	1692.58	33	

*Significant at the .05 level if $\geq$ 3.29.

Comparison of student and supervising teachers' satisfaction. The results of the analysis of variance computed to determine differences between student teachers' and supervising teachers' expressed satisfactions indicated that there was a difference among the treatment groups which supported the results found for research

questions 5 and 7 (See Table 7). Table 7 also indicates that there were no differences in satisfaction among the student teachers and supervising teachers that could be attributed to the method of supervision (Research Question 8). Also, there were no significant interactions, indicating that no combination of supervisory technique and rater (student teacher and supervising teacher) resulted in differing scores on satisfaction. Within each treatment group, the student teachers and the supervising teachers ranked in the same order in terms of most to least satisfied: face-to-face, video-phone, audio-phone (See Table 8).

TABLE 7

Analysis of Variance
Satisfaction Scale
Student Teachers and Supervising Teachers Within
Same Treatment Groups

SOURCE	S.S.	M.S.	d.f.	F
Treatment Groups	29481.86	14740.93	2	6.27*
Raters	3107.35	3107.35	1	2.95
Interaction	66.69	33.35	2	.03

*Significant at .05 level if $\geq$ 3.29 (2, 33 d.f.); $\geq$ 4.14 (1, 33 d.f.)

TABLE 8

Means, Standard Deviations, and Rank Order
Satisfaction Scale
Student Teachers and Supervising Teachers*

Treatment Group	Mean	Standard Deviations	Rank Order
	Student Teachers		
Face-to-Face	198.00	48.48	Face-to-Face (Continued)

TABLE 8 (Continued)

Audio-Phone	155.58	28.25	Video-Phone
Video-Phone	194.75	44.52	Audio-Phone
	Supervising Teachers		
Face-to-Face	212.50	23.06	Face-to-Face
Audio-Phone	166.00	37.44	Video-Phone
Video-Phone	209.25	56.07	Audio-Phone

*Results obtained from multiple-range analysis of variance

Even though the supervising teachers in the face-to-face and video-phone supervision groups were more satisfied than the audio-phone group, analysis of their replies regarding the advantages of these two alternative techniques of supervision revealed they were satisfied for both similar and dissimilar reasons:

Face-to-Face Supervision

Video-Phone Supervision

Similar Comments

1. Critique forms helpful for evaluating objectively.
2. Can observe pupils' reactions and non-verbal cues.
3. Gives more complete picture of the lesson.

Dissimilar Comments

1. Allows for immediate feedback.
2. Can observe student teachers' use of teaching resources.
3. No abrupt changes needed for visit by college supervisor.

1. Feedback was more objective and student teacher less emotionally involved.
2. Student teacher self-evaluation improved, places problems in proper perspective.
3. Promotion of more careful planning for videotaped lesson carried over to other lessons.

The list of disadvantages noted by the supervising teachers in the audio-phone supervision group was twice as long as the list compiled by the student teachers and college supervisors. Selected comments made by the audio-phone supervising teachers in

terms of disadvantages presented possible reasons for dissatisfaction.

Comments revealed three general areas of concern that created dissatisfaction: 1) college supervisors' lack of observation of the physical appearance of the student teacher and her use of resources, 2) the technicalities of carrying out the supervisory conference via telephone as well as annoying equipment problems, and 3) the choice of the specific teaching techniques used for analysis of the student teacher's effectiveness.

College supervisor satisfaction. To answer research question 9, an analysis of variance was computed on the three college supervisors' responses on the Satisfaction Scale. The results indicated that there were no differences at a significant level among the college supervisors in expressed satisfaction with the three supervisory techniques (See Table 9).

TABLE 9

Analysis of Variance
Satisfaction Scale
College Supervisor

SOURCE	S.S.	M.S.	d.f.	F
Between Groups	7280	3640	2	2.35
Within Groups	2028	1551	6	

*Significant at .05 level if $\geq$ 5.14 (2, 6 d.f.)

A composite of selected comments made by college supervisors illustrated reasons why their satisfaction tended to be similar for the three supervisory groups:

Face-to-Face Supervisory Technique

1. Time to cover areas of concern (other than student teacher's problems)
2. More effective rapport established
3. Able to see realistic situation
4. Immediate discussion of results
5. Able to see visuals student teacher used

Audio-Phone Supervisory Technique

1. Increased contacts with the student teacher
2. Objective look at student teacher's performance
3. Forced to notice the interaction between pupils and student teacher
4. Eliminated travel time
5. Good for student teacher self-evaluation

Video-Phone Supervisory Technique

1. Concrete examples for making analysis, for questioning, and for guidance
2. Excellent for student teacher self-evaluation
3. Regular conferences between supervising teacher and student teacher
4. Lent directed focus to the supervisory conference
5. Eliminated travel time

The college supervisors revealed that in all methods there was concern about limited sampling of the student teacher performance with the concomitant responsibility for evaluating the student teacher based on this limited evidence. Need for immediate feedback in all supervisory methods was stressed. Other disadvantages cited were in relation to the audio-phone supervisory technique and dealt mainly with use of the equipment and the fact that this medium was unidimensional in character.

TIME REQUIREMENTS

Research question 10, which related to the time requirements of each of the supervisory techniques, could not be tested statistically. The answer to this question was based on records kept by the college supervisors to determine the clock-hour contacts made with each student teacher and supervising teacher during conferences. Thus, an accurate measure was made of supervisory conference time for the triad. In addition, the time utilized for observation was calculated. In the face-to-face supervisory technique, time was also recorded for travel. The college supervisors' time involvement indicated that mean total hours per student teacher were: 16 hours for face-to-face supervision, 9.8 hours for audio-phone supervision, and 9.9 hours for video-phone supervision (See Table 10). In all categories of time involvement, face-to-face supervision required more time than the other two techniques. Audio-phone and video-phone supervision were similar in terms of time involvement for the college supervisor.

Due to the many responsibilities that the college supervisors assumed with three methods of supervision and other departmental commitments, the time record must be considered an estimate.

TABLE 10

College Supervisor Time Involvement for
Three Supervisory Techniques
(Hours Per Student Teacher)

Treatment Group	With Supervising Teachers	With Student Teachers	3-Way Conference	Travel, Viewing, Listening to tapes, etc.	Total Time Involvement
Face-to-Face	1.2	3.0	1.5	10.4	16.1
Audio-Phone	0.6	1.7	1.3	6.2	9.8
Video-Phone	1.0	1.5	1.5	5.9	9.9

However, barring "human error," these records do provide an estimate of time involved in the use of the three supervisory methods.

There are two factors that should be noted regarding the college supervisors' time allocation. Precisely in what category observation time for the face-to-face supervisory group was recorded was not clear. It could have been included under conference time or miscellaneous time. Observation time for the other two groups was specifically identified as time for viewing tapes.

A second factor of concern was that the "maximum" time suggested in video and audio-phone supervision was not used for college supervisor-student teacher contacts. In the original instructions it was suggested that a maximum of 10 half-hour calls be made to each student teacher, or a total telephone conference time of five hours. This was designated because it had been estimated prior to the study that during face-to-face supervision, person-to-person contact time was approximately five hours. The term "maximum" was used in the instructions, which could have been misleading, thus causing the college supervisors to be cautious in the use of the telephone for conference purposes.

SUMMARY OF FINDINGS

The following is a summary of the major findings presented in this chapter:

1. There were no significant differences among the three supervisory treatment groups in terms of improvement in teaching performance on the three selected teaching skills. Significant differences were found within confidence levels on the skill of oral questioning (degree of accomplishment scale).

2. No combination of supervisory technique and initial confidence level resulted in significant effects on teaching performance.

3. Students gained in teaching confidence but there were no differences among the three supervisory treatment groups.

4. The student teachers gained in confidence in teaching regardless of their initial level and the supervisory technique involved.

5. There were differences among the three treatment groups in terms of the student teachers' expressed satisfaction with the supervision techniques. They favored face-to-face or video-phone to the audio-phone technique.

6. No combination of supervisory technique and initial confidence level appeared to influence the satisfaction scores.

7. There was a difference among the three treatment groups in terms of the supervising teachers' expressed satisfaction with the supervision techniques. They favored the face-to-face or video-phone to the audio-phone technique.

8. There were no differences between students and supervising teachers in expressed satisfaction with the supervisory techniques.

9. There were no differences among the college supervisors in expressed satisfaction with the three supervisory techniques.

10. In all categories of time involvement, face-to-face supervision required more of the college supervisors' time than the other two techniques.

CHAPTER IV

CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

As part of the series of studies conducted at The Center to assess micro-teaching and video recording in vocational and technical teacher education, the study reported here was designed as a field test, in cooperation with the Division of Home Economics Education at The Ohio State University, to determine the feasibility and potential applicability of remote supervision techniques in conjunction with micro-teaching and video recording in preservice teacher education programs for home economics education students.

Based on the conduct and results of the study, certain tentative conclusions can be stated in terms of the home economics education student teaching situation at The Ohio State University, with certain recommendations and implications projected as appropriate for other teacher education programs.

CONCLUSIONS

With regard for the limits of this study and considering a comparable program, the following conclusions have been developed:

1. Student teachers can improve equally well in teaching performance on the three selected teaching skills under any of the three supervisory techniques and/or with any initial level of confidence.

2. Student teachers can improve equally well in confidence in teaching under any of the three supervisory techniques and/or with any initial level of confidence.

3. Student teachers experiencing the same one of the three supervisory techniques can be expected to express similar satisfaction with the supervisory techniques regardless of their initial level of confidence.

4. Both student teachers and supervising teachers can be expected to express greater satisfaction with the face-to-face and video-phone techniques. That is, they would favor visually oriented rather than audio-oriented supervision.

5. College supervisors can be expected to express equal satisfaction with the three selected supervisory techniques.

6. Face-to-face supervision can be expected to require more of the college supervisor's time than the other two techniques.

RECOMMENDATIONS

It is recommended that:

1. One or both of the experimental supervisory techniques be incorporated in existing student teaching programs.

2. Choice of or the use of a combination of supervisory techniques for improving teaching performance and confidence in teaching should be dependent upon the needs of each member of the student teaching triad.

3. Critique forms for self-evaluation be used in all teaching acts to add a profitable aspect of directed focus to supervisory conferences.

IMPLICATIONS

1. With definite recognizable advantages and some disadvantages in the use of the three supervisory techniques, further exploration may reveal the best combination for optimum effectiveness.

2. Clarification of supervisory roles may be profitable, perhaps with supervising teachers assuming responsibility for continuous evaluation of the visual and physical aspects of the classroom situation as well as lesson content and teaching techniques, and the college supervisor, during limited contacts, assuming the role of resource person, coordinator of student teaching activities, and appraiser of overall achievement.

3. The development of self-confidence may be influenced by minimizing the sources of pressure on the student teacher through varying the supervisory methods for individuals, dependent on the specific situation.

4. It is probably possible for an innovative college supervisor to choose from several supervisory styles and techniques that can be most effective for a particular student teacher in a specific situation.

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GLOSSARY OF TERMS

Audio-phone supervision. Supervision by the college supervisor which involves listening to audio tapes of lessons and then conducting telephone conferences with the student teacher and the supervising teacher.

College supervisor. A person on a university staff who is responsible for the supervision of preservice student teachers and serves as a liaison between the university and the cooperating school.

Face-to-face supervision. The conventional method of supervision in which the college supervisor has the usual contacts with the student teacher at the public school.

Micro-teaching. A scaled-down teaching session, five to 10 minutes of teaching to four or five students, in which the teacher participates in the full sequence of the micro-teaching cycle: plan, teach, critique (feedback), replan, reteach, critique.

Student teacher. A college student involved in the preservice teaching experience under the supervision of a supervising teacher and a college supervisor.

Supervising teacher. A teacher in the cooperating school who supervises the student teacher during the student teaching experience.

Teaching triad. The student teacher, the supervising teacher, and the college supervisor who are involved in the student teaching experience.

Video-phone supervision. Supervision by the college supervisor which involves viewing videotapes of lessons and then conducting the phone conferences with the student teacher and the supervising teacher.

APPENDIX A
CONFIDENCE SCALE

CONFIDENCE SCALE

Directions: Place an X before the word or words that most nearly describe your feelings about each of the nine statements below.

1. I am confident that I have the skills necessary to work effectively with pupils in small groups.

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

2. I am confident that I have the skills necessary to work effectively with pupils in large groups (entire class).

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

3. I am confident that I have the skills necessary to maintain the interest of a class.

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

4. I am confident that I possess the necessary skills to cope with individual discipline problems.

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

5. I am confident that I possess the necessary skills required to cope with group discipline problems.

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

Adapted from Olcek, C. W., "Assessing the Effect on Transfer Value of a Classroom Simulator Technique." Unpublished doctoral dissertation, Michigan State University, 1968, pp. 184-186.

6. I am confident that I know how to study individual pupil and school records carefully as a basis for evaluating pupil behavior and progress.

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

7. I am confident that I understand the problems of the students I teach.

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

8. I am confident that I have the necessary skills to deal appropriately with unexpected situations as they develop.

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

9. I am confident that I will enjoy my first teaching position.

_____Very Confident
_____Confident
_____Uncertain
_____Very Uncertain

Name _____

Date _____

APPENDIX B
CRITIQUE FORMS

Teacher's Name _____ / _____ Number

Tape _____ / _____ Panel No.

CRITIQUE FORM
INTRODUCING A LESSON

The introduction phase of a lesson "sets the stage" for student participation in the activity which is to follow. The introduction should help inspire the student to want to accomplish the objectives of the lesson.

The following items will be used to evaluate the teacher's teaching. If the teacher did not accomplish an item, put an X in the box below DID NOT ACCOMPLISH. If the teacher did accomplish the item, put an X in the box which best describes HOW WELL the teacher ACCOMPLISHED the item.

REPEAT THE FOLLOWING PHRASE BEFORE READING EACH ITEM

Did the teacher in the introduction:

	DID NOT ACCOMPLISH	HOW WELL ACCOMPLISHED: POOR		AVERAGE		EXCELLENT
1. Communicate the objective of the lesson? (e.g., make students aware of what the objective was in terms of their behavior--write, speak, solve, construct)	—	—	—	—	—	—
2. State in terms of student needs why the objective was important? (e.g., skill development, future job, personal development)	—	—	—	—	—	—
3. State how the student would proceed in accomplishing the objective? (e.g., use resource materials, practice skills, solve problems)	—	—	—	—	—	—
4. Relate the lesson to the student's prior knowledge, experience or background? (e.g., provide continuity from past lessons)	—	—	—	—	—	—

	HOW WELL ACCOMPLISHED					
	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
5. Explain to the student how to recognize when he had achieved the objective of the lesson? (e.g., able to perform skill, apply information)	—	—	—	—	—	—
6. Provide opportunity for student participation? (e.g., react favorably to student questions, comments, non-verbal cues)	—	—	—	—	—	—
7. Show enthusiasm for the lesson? (e.g., express enthusiasm by speech, facial expression or gestures)	—	—	—	—	—	—
8. Make lesson more interesting by use of instructional aids or other techniques? (e.g., use chalkboard, charts, illustrations)	—	—	—	—	—	—

Teacher's Name _____ / Number

Tape _____ / Panel No.

CRITIQUE FORM
DEMONSTRATING A MANIPULATIVE SKILL

In helping the student learn an occupation, the teacher will be presenting new manipulative skills through a method of teaching known as the demonstration. If the teacher has given a good demonstration and the student has been a good observer and listener, the student should be ready to attempt to perform the manipulative skill safely and step-by-step.

The following items will be used to evaluate the teacher's teaching. If the teacher did not accomplish the item, put an X in the box below DID NOT ACCOMPLISH. If the teacher did accomplish the item, put an X in the box which best describes HOW WELL the teacher ACCOMPLISHED the item.

REPEAT THE FOLLOWING PHRASE BEFORE READING EACH ITEM

Did the teacher in the demonstration:

	DID NOT ACCOMPLISH	HOW WELL ACCOMPLISHED: ACCOMPLISHED VERY POORLY	POORLY	AVERAGE	GOOD	EXCELLENT
1. Have all equipment, tools and materials ready for use?						
2. Talk to the students and not to the tools or materials? (e.g., even though keeping eyes on a machine, makes students feel teacher's attention is on them)						
3. Present each step of the procedure, task, skill or operation in the proper sequence?						
4. Briefly state what step is to be performed, how and why it is performed, then perform it?						
5. Position himself and the students so that each step was easily seen? (e.g., had students regroup themselves for better viewing; used visual aids when needed)						

	HOW WELL ACCOMPLISHED					
	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
6. Present one method of doing the operation or task stressing the key points so the task could be completed safely and efficiently? (e.g., did not give two or more methods; did not confuse students with unnecessary information)	—	—	—	—	—	—
7. Perform the manipulative skill with ease?	—	—	—	—	—	—

Teacher's Name _____ / Number

Tape _____ / Panel No.

CRITIQUE FORM
ORAL QUESTIONING

A question is an act or instance of asking. Questioning by the teacher promotes direct mental activity on the part of the learner providing opportunity for the learner to be actively involved in the lesson. The question may be stated in words or may be simply an inquisitive facial expression or gesture. It requires some type of response on the part of the learner: stating a fact; recalling a selected thought; making a comparison of two things; making a judgment; analyzing an attitude or appreciation; or, directing thought.

The effective use of questioning by the teacher increases the student's freedom of action, affords more opportunities to express ideas, and makes the student less dependent on the teacher.

The following items will be used to evaluate how the teacher uses questions in a lesson. If the teacher did not accomplish the item, you will put an X in the box below DID NOT ACCOMPLISH. If the teacher did accomplish the item, put an X in the box which best describes HOW WELL the teacher ACCOMPLISHED the item.

REPEAT THE FOLLOWING PHRASE BEFORE READING EACH ITEM

When using questions during the lesson did the teacher:

	HOW WELL ACCOMPLISHED				
DA IC DC O JM OP TL IS H	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
1. Use different types of questions? (e.g., requires responses based on recall, making a comparison or judgment, expressing an attitude; draw information from the students avoiding overuse of questions requiring "yes" and "no" answers)	___	___	___	___	___
2. Ask the question, pause to allow students to think about the question and then call on a specific student giving the student time to think before requiring a response?	___	___	___	___	___

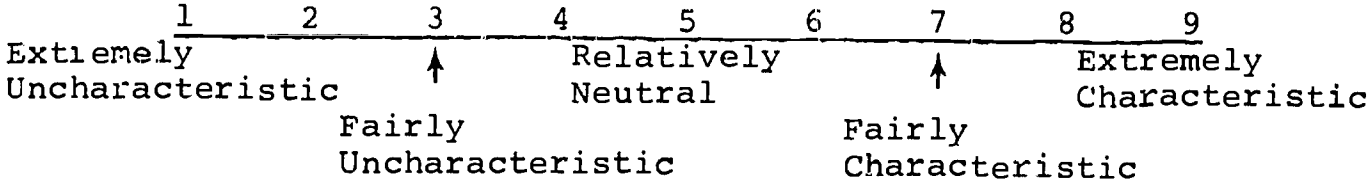
	HOW WELL ACCOMPLISHED					
	DID NOT ACCOMPLISH	VERY POOR	POOR	AVERAGE	GOOD	EXCELLENT
3. Present the questions in an orderly sequence? (e.g., questions were organized so students could follow the line of thought)	—	—	—	—	—	—
4. Ask questions which were clear and short enough to remember? (e.g., ask one question at a time)	—	—	—	—	—	—
5. Direct questions so that each student had an equal opportunity to respond?	—	—	—	—	—	—
6. React favorably toward student's answers? (e.g., acknowledge answers, avoid repeating student's answers unnecessarily)	—	—	—	—	—	—
7. Ask questions which could be answered from students' past experiences or knowledge?	—	—	—	—	—	—
8. Require students to go beyond their first answer? (e.g., encourage students to expand an idea, back up an idea with facts or illustrations)	—	—	—	—	—	—

APPENDIX C
SATISFACTION SCALES

SATISFACTION SCALE FOR EXPRESSION OF SATISFACTION WITH SUPERVISION

The purpose of the Satisfaction Scale is to allow you to indicate the statements which best describe your feelings of satisfaction and/or dissatisfaction with the method of supervision in which you were involved this quarter. (Three methods were used: 1) face-to-face supervision, 2) audio-phone supervision, and 3) video-phone supervision.) Even though we have asked for your name at the top of the form, the scale will be treated as confidential material by the research staff in that the names of persons and schools will not be identified with particular ratings at any time to anyone.

DIRECTIONS: When completing the Satisfaction Scale, think in terms of the method of supervision in which you were involved. You are to rate the statements on a 9-point scale, circling the number 9 for those statements you consider extremely characteristic with respect to the method of college supervision in which you were involved, and circle 1 for those statements you believe to be extremely uncharacteristic to this method of college supervision.



CAUTIONS: Always repeat the following phrase before reading each statement:

"The method of college supervision in which I was involved this quarter":

Then circle the number which best describes your rating for each statement in the column on the right as shown in the example below.

1.	helped me to look objectively at the student teacher's teaching.	1 2 3 4 5 6 7 8 9

The Q-Sort for Satisfaction with Supervision was developed by Dalrymple and White for a pilot study in remote supervision of student teachers at the University of Wisconsin (1965) and adapted for use by the Division of Home Economics Education at The Ohio State University.

SATISFACTION SCALE--SUPERVISING TEACHER FORM
EXPRESSION OF SATISFACTION WITH SUPERVISION

The method of college supervision in which I was involved this quarter:

1.	helped me to look objectively at the student teacher's teaching.	1	2	3	4	5	6	7	8	9
2.	caused me to be quite apprehensive during the first several weeks.	1	2	3	4	5	6	7	8	9
3.	allowed no opportunity for recognition from the college supervisor when the student teacher deserved it.	1	2	3	4	5	6	7	8	9
4.	stimulated me to do my best work.	1	2	3	4	5	6	7	8	9
5.	helped the student teacher to integrate educational theory with her classroom teaching.	1	2	3	4	5	6	7	8	9
6.	provided an adequate number of contacts between the college supervisor and myself.	1	2	3	4	5	6	7	8	9
7.	made it easy for me to contact the supervisor whenever necessary.	1	2	3	4	5	6	7	8	9
8.	was an unsatisfactory method of supervision for our particular student teacher situation.	1	2	3	4	5	6	7	8	9
9.	was oriented toward identifying the student teacher's failures.	1	2	3	4	5	6	7	8	9
10.	established a relaxed, open confidence between the college supervisor and myself.	1	2	3	4	5	6	7	8	9
11.	encouraged the student teacher and myself to feel like co-educators along with the college supervisor.	1	2	3	4	5	6	7	8	9
12.	left my student teacher and myself in doubt about what was expected of us.	1	2	3	4	5	6	7	8	9

The method of college supervision in which I was involved this quarter:

13.	allowed for private communication between myself and the college supervisor.	1	2	3	4	5	6	7	8	9
14.	caused me to be quite apprehensive during the last few weeks.	1	2	3	4	5	6	7	8	9
15.	considered mutual convenience of time of all participants in the arrangement of supervisory contacts.	1	2	3	4	5	6	7	8	9
16.	helped the student teacher to place her problems in their proper perspective.	1	2	3	4	5	6	7	8	9
17.	allowed the student teacher to feel successful.	1	2	3	4	5	6	7	8	9
18.	limited the college supervisor's opportunity to gain a representative picture of the student teacher's teaching experience.	1	2	3	4	5	6	7	8	9
19.	included factors which were somewhat disturbing to the pupils in the classes.	1	2	3	4	5	6	7	8	9
20.	required excessive preparation for supervisory contacts.	1	2	3	4	5	6	7	8	9
21.	required more of my time than seemed necessary.	1	2	3	4	5	6	7	8	9
22.	stimulated self-analysis of my own performance.	1	2	3	4	5	6	7	8	9
23.	needed more contacts between the college supervisor and myself.	1	2	3	4	5	6	7	8	9
24.	de-emphasized guidance and evaluation.	1	2	3	4	5	6	7	8	9
25.	was a frustrating procedure for me.	1	2	3	4	5	6	7	8	9
26.	improved relationships between the university and our school.	1	2	3	4	5	6	7	8	9

The method of college supervision in which I was involved this quarter:

27.	limited the student teacher's freedom to explore various approaches to teaching.	1	2	3	4	5	6	7	8	9
28.	helped the student teacher to strengthen specific teaching skills.	1	2	3	4	5	6	7	8	9
29.	resulted in a superficial evaluation of the student teacher's teaching.	1	2	3	4	5	6	7	8	9
30	was highly satisfying once working relations and procedure were established.	1	2	3	4	5	6	7	8	9
31.	created a tense atmosphere between the college supervisor and the student teacher.	1	2	3	4	5	6	7	8	9
32.	helped the student teacher to improve her teaching.	1	2	3	4	5	6	7	8	9

SATISFACTION SCALE--COLLEGE SUPERVISOR FORM
FOR EXPRESSION OF SATISFACTION WITH SUPERVISION

The method of college supervision in which I was involved this quarter:

1.	helped me to look objectively at the student teacher's teaching.	1	2	3	4	5	6	7	8	9
2.	caused me to be quite apprehensive during the first several weeks.	1	2	3	4	5	6	7	8	9
3.	allowed no opportunity for recognition from me when the student teacher deserved it.	1	2	3	4	5	6	7	8	9
4.	stimulated me to do my best work.	1	2	3	4	5	6	7	8	9
5.	helped the student teacher to integrate educational theory with her classroom teaching.	1	2	3	4	5	6	7	8	9
6.	provided an adequate number of contacts between the student teacher and supervising teacher and myself.	1	2	3	4	5	6	7	8	9
7.	made it easy for me to contact the student teaching center whenever necessary.	1	2	3	4	5	6	7	8	9
8.	was an unsatisfactory method of supervision for this particular student teaching situation.	1	2	3	4	5	6	7	8	9
9.	was oriented toward identifying the student teacher's failures.	1	2	3	4	5	6	7	8	9
10.	established a relaxed, open confidence between the student teacher and myself.	1	2	3	4	5	6	7	8	9
11.	encouraged the supervising teacher to feel like co-educators along with me.	1	2	3	4	5	6	7	8	9
12.	left the supervising teacher and student teacher in doubt about what was expected of them.	1	2	3	4	5	6	7	8	9

The method of college supervision in which I was involved this quarter:

13.	allowed for private communication between myself and the supervising teacher or student teacher.	1	2	3	4	5	6	7	8	9
14.	caused me to be quite apprehensive during the last few weeks.	1	2	3	4	5	6	7	8	9
15.	considered mutual convenience of time of all participants in the arrangement of supervisory contacts.	1	2	3	4	5	6	7	8	9
16.	helped the student teacher to place her problems in their proper perspective.	1	2	3	4	5	6	7	8	9
17.	allowed the student teacher to feel successful.	1	2	3	4	5	6	7	8	9
18.	limited my opportunity to gain a representative picture of the student teacher's experiences.	1	2	3	4	5	6	7	8	9
19.	included factors which were somewhat disturbing to the pupils in the classroom.	1	2	3	4	5	6	7	8	9
20.	required excessive preparation for supervisory contacts.	1	2	3	4	5	6	7	8	9
21.	required more of my time than seemed necessary.	1	2	3	4	5	6	7	8	9
22.	stimulated self-analysis of my own performance.	1	2	3	4	5	6	7	8	9
23.	needed more contacts between the supervising teacher and myself.	1	2	3	4	5	6	7	8	9
24.	de-emphasized guidance and evaluation.	1	2	3	4	5	6	7	8	9
25.	was a frustrating procedure for me.	1	2	3	4	5	6	7	8	9
26.	improved relationships between the university and the student teaching center.	1	2	3	4	5	6	7	8	9

The method of college supervision in which I was involved this quarter:

27.	limited the student teacher's use of various approaches to teaching.	1	2	3	4	5	6	7	8	9
28.	helped the student teacher to strengthen specific teacher skills.	1	2	3	4	5	6	7	8	9
29.	resulted in a superficial evaluation of the student teacher's teaching.	1	2	3	4	5	6	7	8	9
30.	was highly satisfying once working relations and procedure were established.	1	2	3	4	5	6	7	8	9
31.	created a tense atmosphere between the student teacher and myself.	1	2	3	4	5	6	7	8	9
32.	helped the student teacher to improve her teaching.	1	2	3	4	5	6	7	8	9

SATISFACTION SCALE--STUDENT TEACHER FORM
FOR EXPRESSION OF SATISFACTION WITH SUPERVISION

The method of college supervision in which I was involved this quarter:

1.	helped me to look objectively at my classroom teaching.	1	2	3	4	5	6	7	8	9
2.	caused me to be quite apprehensive during the first several weeks.	1	2	3	4	5	6	7	8	9
3.	allowed no opportunity for recognition from the college supervisor when I deserved it.	1	2	3	4	5	6	7	8	9
4.	stimulated me to do my best work.	1	2	3	4	5	6	7	8	9
5.	helped me to integrate educational theory with my classroom teaching.	1	2	3	4	5	6	7	8	9
6.	provided an adequate number of contacts between the college supervisor and myself.	1	2	3	4	5	6	7	8	9
7.	made it easy for me to contact the college supervisor whenever necessary.	1	2	3	4	5	6	7	8	9
8.	was an unsatisfactory method of supervision for my particular student teaching situation.	1	2	3	4	5	6	7	8	9
9.	was oriented toward identifying my failures.	1	2	3	4	5	6	7	8	9
10.	established a relaxed, open confidence between the supervising teacher and the college supervisor.	1	2	3	4	5	6	7	8	9
11.	encouraged the supervising teacher and myself to feel like co-educators along with the college supervisor.	1	2	3	4	5	6	7	8	9
12.	left my supervising teacher and myself in doubt about what was expected of us.	1	2	3	4	5	6	7	8	9

The method of college supervision in which I was involved this quarter:

13.	allowed for private communication between myself and my college supervisor.	1	2	3	4	5	6	7	8	9
14.	caused me to be quite apprehensive during the last few weeks.	1	2	3	4	5	6	7	8	9
15.	considered mutual convenience of time of all participants in the arrangement of college supervisory contacts.	1	2	3	4	5	6	7	8	9
16.	helped me to place my problems in their proper perspective.	1	2	3	4	5	6	7	8	9
17.	allowed me to feel successful.	1	2	3	4	5	6	7	8	9
18.	limited the college supervisor's opportunity to gain a representative picture of my teaching experiences.	1	2	3	4	5	6	7	8	9
19.	included factors which were somewhat disturbing to the pupils in my classes.	1	2	3	4	5	6	7	8	9
20.	required excessive preparation for supervisory contacts.	1	2	3	4	5	6	7	8	9
21.	required more of my time than seemed necessary.	1	2	3	4	5	6	7	8	9
22.	stimulated self-analysis of my own performance.	1	2	3	4	5	6	7	8	9
23.	needed more contacts between my supervising teacher and my college supervisor.	1	2	3	4	5	6	7	8	9
24.	de-emphasized guidance and evaluation.	1	2	3	4	5	6	7	8	9
25.	was a frustrating procedure for me.	1	2	3	4	5	6	7	8	9
26.	improved relationships between the university and our school.	1	2	3	4	5	6	7	8	9

The method of college supervision in which I was involved this quarter:

27. limited my use of the various approaches to teaching.	1	2	3	4	5	6	7	8	9
28. helped me to strengthen specific aspects of my teaching skills.	1	2	3	4	5	6	7	8	9
29. resulted in a superficial evaluation of my student teaching.	1	2	3	4	5	6	7	8	9
30. was highly satisfying once working relations and procedure were established.	1	2	3	4	5	6	7	8	9
31. created a tense atmosphere between the college supervisor and myself.	1	2	3	4	5	6	7	8	9
32. helped me to improve my teaching.	1	2	3	4	5	6	7	8	9

QUESTION SHEET

For your reaction:

1. What do you consider the main advantages and disadvantages of the method of supervision in which you were involved?

   Advantages

   Disadvantages

2. If you were involved in this type of supervision again, what would be your suggestions for improvement of the method of supervision in which you were involved?

3. Specify any additional criticisms.

APPENDIX D
INTER-RATER RELIABILITY, PANEL RATINGS

INTER-RATER RELIABILITY, PANEL RATINGS

Scale on Critique Forms	Teaching Skill	First Videotape Pretest (r_{ka}*)	Second Videotape Posttest (r_{ka})
Accomplished	Introducing a Lesson	.69	.71
	Demonstrating a Manipulative Skill	.47	.66
	Oral Questioning	.97	.96
Degree of Accomplishment	Introducing a Lesson	.81	.86
	Demonstrating a Manipulative Skill	.01	.52
	Oral Questioning	.97	.96

*Reliability of the use of the mean panel ratings with adjustment for possible differences in panel members' frame of reference.