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A Study to Measure the Value of Videotape Replays for Self-Evaluation by Teacher-Trainees Prior to Their Student Teaching Experience

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**A STUDY TO MEASURE THE VALUE OF VIDEOTAPE REPLAYS
FOR SELF-EVALUATION BY TEACHER-TRAINEES PRIOR
TO THEIR STUDENT TEACHING EXPERIENCE**

**A Thesis
Presented to
the Graduate Faculty
Central Washington State College**

**In Partial Fulfillment
of the Requirements for the Degree
Master of Education**

**by
John Edwin Bieber**

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CHAPTER I

THE PROBLEM, DEFINITION OF TERMS USED AND LIMITATIONS OF THE STUDY

Introduction

Students in teacher education must realize that they are about to deal with a very delicate instrument—the human mind. They must realize that it will become their responsibility to guide, assist and lead a child in such a manner as to make him want to learn. To do this, they must learn specific skills; they must be willing to take criticism and advice; they must be willing to change; and they must continue the process of self-evaluation. The questions which arise here are: By what criteria do they evaluate themselves; How do they know if they're doing an adequate job; Where or when do they practice these specific skills?

Prior to Fall Quarter, 1966-67, teacher-trainees at Central Washington State College received no formal opportunity to practice the specific teaching skills they had learned in the theory courses before their student teaching experience. The only association they had with teaching prior to entering that first classroom was theory and observation. Their evaluation came through their ability to recall a mental image of a given situation as they and a student-teacher-supervisor discussed their lessons, sometimes several hours later. This situation was by no means limited to the program of teacher education at Central. Colleges and universities throughout the nation were operating on a similar procedure. Critics of education were well aware of this problem and held no reservations about denouncing it and calling for change: "... magazines of general circulation carried more criticism of teacher education in 1958 than at any time in the past decade." (12:383-84)

Supporters of education were also aware of this problem. In 1959, the Ford Foundation made grants to various institutions to enable them to reorganize and improve their programs of teacher education. (8:154-57) An outgrowth of these grants in many of the institutions was an increased use of television in their instructional programs. Although the critics quickly defined television and its related technology as gadgetry, its use has

grown rapidly in education. Colleges and universities in growing numbers are adopting aspects of a study on microteaching designed by the School of Education, Stanford University, Stanford, California (1:75-79) into their programs of teacher preparation. The purpose of microteaching is to give teacher-trainees an opportunity to practice-teach prior to the time when they must assume responsibility of a real classroom with live students. In addition to microteaching, many institutions are implementing the use of the latest instructional tool, the videotape recorder, to aid the students in self-evaluation.

An important question which must be answered is does it work? Although numerous articles have been written enthusiastically reporting the outcomes of these first experiences by the various institutions, few of the articles are reports of research. One can further ask, is it worthwhile? Does the teacher-trainee benefit from this technological innovation or is it just an addition to the gadgetry being used in the field of education?

I. THE PROBLEM

Statement of the Problem

A study to determine if teacher-trainees who view a videotape replay of themselves practicing specific teaching skills prior to receiving an analysis of their lesson will score significantly higher on a specially designed rating instrument than trainees who practice the same skills but receive no videotape-replay and must rely on their ability to recall a mental image as they receive an analysis of their lesson.

Purpose of the Study

During Fall Quarter, 1966-67, a new program was implemented into the teacher-training procedure at Central Washington State College. A television-videotape-recorder-chain was set up in a classroom which was to serve as a laboratory for mirror- or microteaching. This facility was provided for the use of students who were soon to begin their student teaching experience. The purpose of this procedure was to allow students a chance to practice various teaching skills prior to their student teaching experience. An observer was present in the room to assist, guide and critique the

students' lessons if they or their classroom instructor so desired. The television videotape-recorder-chain was provided to aid the students in self-evaluation of their teaching performance.

Careful planning and much deliberation must precede any new program. Once a program is implemented, research must be enacted to determine if the objectives are being fulfilled. The purposes of this study were (1) to determine if teacher-trainees who view a videotape replay of themselves practicing specific teaching skills prior to receiving an analysis of their lesson will score significantly higher on a specially designed rating instrument than trainees who practice the same skills but receive no videotape replay and must rely on their ability to recall a mental image as they receive an analysis of their lesson; (2) determine if the use of the videotape equipment causes a significantly favorable change in the students' attitude toward the Laboratory-Teaching experience; (3) determine if the use of the videotape equipment causes a significantly favorable change in the students' confidence in their ability to use the specific teaching skills they have been practicing.

II. LIMITATIONS OF THE STUDY

This study was limited to fifty Central Washington State College students who were enrolled in two sections of an Education 314 course both taught by Dr. AH. Howard during Winter Quarter, 1967-68.

Specific overt teaching skills were identified, practiced and observed by the students. These specific overt teaching skills were limited to the following aspects of the delivery of a lesson: (1) Voice Quality, (2) Enunciation, (3) Over-All Eye Contact, (4) Gestures, (5) Interaction, (6) Pausing, (7) Oral-Visual Switching, (8) Stressing Key Points, (9) Teacher Distractions. A complete description of these skills is shown in Appendix B.

The data regarding teacher-behavior are items of observed teacher-behavior compiled by two observers who were using the same rating instrument.

III. DEFINITION OF TERMS

The following list of definitions is provided to acquaint the reader with unfamiliar terms which appear in the context of this Study:

Education 314

This is the last class in the sequence of teacher-preparation courses offered at Central Washington State College prior to the student teaching experience. The General Catalog of Education defines it as “. . . the basic principles of curriculum and instruction, fundamental teaching procedures, orientation to curriculum content, classroom activities, and instructional materials typical of primary, intermediate, junior high and senior high school levels.” “Laboratory experience will be scheduled regularly.” (3:99)

Teacher-Trainee Evaluation Instrument (TTEI)

This is the term used for the evaluation instrument designed and used to measure each teacher-trainee’s performance on the specific teaching skills being evaluated in this study.

Microteaching

This term is borrowed from a study at Stanford University. (1:75-79) It represents a scaled-down teaching experience in which the teacher-trainee teaches a short lesson, four to twenty-minutes, to a small group usually consisting of three to ten students..

Practice-Teaching

This term is used to denote those opportunities a student has to practice specific teaching skills prior to his formal student teaching experience.

Mirror Television

This is a term used at Central Washington State College to define a situation wherein a teacher-trainee teaches a short lesson to a group of class members during which time a videotape recording is made of his teaching performance. The trainee then views the video-playback for the purpose of self-evaluation.

Experimental Group

The group of students involved in this study who had the opportunity to view a videotape-replay of themselves practicing specific teaching skills.

Control Group

The group of students involved in this study who did not view a videotape-replay but had to recall a mental image of their teaching performance.

Television-Videotape-Recorder-Chain

The television-videotape-recorder-chain used in this study consisted of (1) a Cohu Model 3200 television camera with a zoom lens, (2) a Sony PV120 U videotape recorder with quick-stop-start capabilities and (3) a Motorola Classroom video monitor with a 21-inch screen.

IV. ORGANIZATION OF THE REMAINDER OF THE STUDY

In Chapter II a review of the related literature will acquaint the reader with the first uses of television in education, the growth of television in education and the use of television in teacher education.

In Chapter III the reader can find a detailed discussion of the procedures employed in this study.

A report of the findings of the study will be found in Chapter IV with an analysis of the data presented in table form.

A summary of the study, conclusions, discussion of its implications and suggestions for additional research will be provided in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

While talking with a counselor about becoming a teacher, a high school student remarked that he was aware that subject matter was taught in college but asked when or how one learned how to teach. The counselor's response suggested that every college of education offered different courses, but all of them oriented their students with the theory of teaching. The student then asked if theory was the only preparation one received prior to his first teaching assignment.

The answer to this question has been, almost! The student in teacher education has been supplied with an opportunity to practice specific teaching skills during his Student Teaching or Internship Teaching experience. In too many cases, however, the only association the trainee had with teaching prior to that first classroom was theory and observation. Few were provided with an opportunity to practice teaching in any formal situation prior to this first experience.

Change was eminent as evidenced by the increasing criticism toward schools of education: "According to research reported in the Phi Delta Kappan in December, 1958, magazines of general circulation carried more criticism of teacher education in 1958 than at any time in the past decade." (12:383-4) In 1959, the Ford Foundation made breakthrough grants to various institutions to enable them to reorganize and improve their programs of teacher education. (8:154) One of the items of emphasis to be considered by the originators of these various programs was:

"... the development and application of new techniques in teaching as well as in the education of teachers, including internship-teaching teams, teaching aides, and the utilization of modern modes of communication such as television, films and tapes." (8:156)

Many changes have occurred and are continuing to occur in the field of education, specifically in the area of teacher preparation. Television and its related technology have played a large role in many of the programs which have developed.

It is not the purpose of this paper to defend or refute the use of television in education—either in public schools or colleges. Research indicates, however, that many persons doubt the usefulness of television in education even though the number of users continues to grow. A brief review of the first uses of television in education will aid the reader in formulating his own opinions and make him aware of its aspects as he reads how this medium is continuing to be used in a growing number of programs which are developing in institutions across the nation.

I. FIRST USES OF TELEVISION IN EDUCATION

In the early fifties the primary concern by educators regarding television was its effects on the school work of their students. An early study indicated that television viewing definitely did change students' lives: (4:10)

“It is evident from the replies to a question regarding the changes in living habits, that high school students' lives definitely have been changed by a medium which claims almost as much time weekly as they spend in school. In general, the advent of TV has been accompanied by a decline in movie-going, . . . hobbies, reading homework etc.”

By the mid-fifties the population explosion had begun to affect schools. Classrooms across the nation, both public school and college, were bulging at their seams. Television seemed a natural for alleviating the difficulty of communicating with these large masses. ETV (Educational Television), ITV (Instructional Television) and CCTV (Closed Circuit Television) were used extensively in both public schools and colleges, with varying results.

The use of television in education continued to grow and by the early sixties not enough could be said of the merits of television in education. The New York State legislature, in 1961, appropriated \$50,000 to the State education department for the development of a “comprehensive plan for the use of television in higher learning in all parts of the state.” (5:24) By 1963, well over half of the major universities in the United States were using television for instructional purposes of one kind or another. (7:172) Countless articles were appearing in many journals and periodicals, enthusiastically reporting the results of the use of television in public school classrooms.

II. TELEVISION IN TEACHER EDUCATION

The population explosion which stimulated the implementation of television into education was also the reason for its introduction into teacher education. In keeping with the philosophy of most colleges, that students in teacher education should have an opportunity to observe teaching techniques in actual classrooms, increased pressure was placed on the public schools. In many cases, student-observers outnumbered the class members in a given situation. The result of this was that it became more and more difficult for colleges and universities to find classroom teachers willing to act as master teachers and administrators of public schools willing to allow such a great number of student observers into their classrooms. (14:58) Again, television served as a solution to this problem. Closed circuit television systems were employed in colleges and universities in increasing numbers, many of whom were using the medium to answer a common need: Bring the classroom into the college, rather than send the students of the colleges or universities into the classrooms. Dr. Glen Starlin, consultant for the New York State Project reported on a previous page had this to say as a possible use for Closed Circuit Television: "Practice teachers could observe classroom procedures from a T.V. viewing room, enabling them to discuss problems without interfering with the class." (5:29)

One of the early users of Closed Circuit Television in teacher education was State University of New York College of Education at Fredonia. To answer questions arising about the effectiveness of this type of instruction, the director of the audiovisual department at State University devised a study to "test the effectiveness of observation of instruction via Closed Circuit Television." Results of that study showed "that guided televiewing was almost as effective as actual guided classroom observation." (5:27) Almost as effective wasn't sufficient reason for the use of television for many educators. Criticism of the medium became routine. There were those educators who maintained that the student-observers missed the full meaning of a classroom by watching it on television. On the other hand, there were those educators who asserted that the use of television was an advantage to the observer. It was their claim that through the use of television, extraneous and distracting activities apparent in the actual classroom could be "weeded out" by the

camera operator, thus allowing the observers to see only those aspects which were under study and would be meaningful to them. (14:59)

The disagreement persisted and no amount of studies or experiments could settle the dispute. For the many studies that indicated positive results in the use of television for classroom observation there were equally as many which indicated "no significant or negative" results: (2:300)

"One of the instructors at Hunter College, New York City, New York, found in an experiment in 1962 that although due recognition was accorded CCTV, the responses of all students showed that more had gained from observation in a classroom than via CCTV."

As the argument wore on, the thought occurred in the minds of some educators that perhaps it was not the fault of the medium for the negative results which continued to occur but perhaps it was the fault of the observers. Peterson was found to be a believer in this theory when he said:

"One of the most difficult tasks a teacher faces is to observe the classroom behavior of his students and draw accurate inferences from his observations. The beginning teacher is often unaware of many of the activities of his students and unable to interpret adequately those he does observe." (11:208)

This assertion was supported by the results of a study conducted at Oberlin College, Oberlin, Ohio, in 1963. In this study, videotape recordings were made of a variety of actual classroom activities, making it possible "to treat observation as a skill that can be taught and practiced," by allowing the instructor to edit the lessons, repeat small segments and interrupt to make comments as the students observe the tapes.(11:209) In that study at Oberlin College, it was found that:

"The students, after observing their first classroom tape were very enthusiastic about the subject matter of the tape (new to most of them), impressed by the alert students, and complimentary regarding the teaching. In a later tape, they were able to observe the same students with a different teacher and they easily recognized the inadequacy of their observations of the first and eagerly requested an opportunity to look again at the tape before drawing any conclusions about either."

Even while studies were being made to test the effectiveness of television for classroom-observation, a new area of teacher education, practice teaching, became the center of concern among educators in various institutions. Concern was felt by a growing number of educators that the student in teacher education was not receiving adequate

preparation in the skills of teaching before being subjected to the responsibilities of carrying out these skills in the presence and best interests of classroom students (1:75) Faculty members of the School of Education, Stanford University, Stanford, California were involved, in the early sixties, "with finding a new, more effective means for initial training of pre-intern teachers." (1:76) It was the opinion of these educators that:

"First, a real teaching situation was needed so neophytes, from the start, could be actively engaged in practicing and refining teaching skills and in experimenting with their own and their professors' ideas. Second, the teaching situation must hold low risk both for the teacher and the student. We could not afford to endanger either the prospective teacher with being run out prematurely by presenting more threats and hurdles than he can reasonable be expected to overcome at the start, or the student by bombarding him with sometimes miserable teaching and its consequent mislearning."

Microteaching was conceived and used by that university in the summer of 1963 to answer the needs discussed above. Microteaching, as defined by the School of Education at Stanford University, is:

". . . a teaching situation which is scaled down in terms of time and numbers of students. In typical practice this has meant a four to twenty-minute lesson taught to three to ten students. Usually a single microteaching episode for any given teacher includes teaching a lesson and getting immediate supervisory and pupil feedback on the effectiveness of the strategy and performance." (1:79)

Allen described the useage of television and videotaping in that study in the following manner:

"Videotaping, while not an essential part of the microteaching process, has been a valuable supplement in all phases because it provides a vivid and objective record for the teacher or the researcher who wants to analyze what has happened in a micro-lesson." (1:79)

Another program which offers teacher-trainees an opportunity to practice teaching prior to their student teaching experience is Mirror Television. James Miles, director of radio and television, Purdue University said:

"A number of institutions are now experimenting with what has been dubbed at Purdue mirror TV. This is the simple use of the television camera and the video recorder to allow a performer to see himself as others see him. At Purdue, it has been used successfully for ministers, speech students, physical education majors, drama majors, and teachers in training." (10:559)

The Education Department at Central Washington State College, working with the Audiovisual Library and specifically the Closed Circuit Television Department, has implemented a program of Mirror Television into its procedure of teacher education.

In the 1966-67 Annual Report, Dr. Charles Vlcek, Closed Circuit Television Coordinator for Central Washington State College defined Mirror Television in the following way:

“Mirror television is a playback in which college students are videotaped while teaching a concept to members of a college class and then replayed for self-critique with or without the professor.” (13:2)

II. SUMMARY

The field of education and specifically that area of teacher education has continually been under the close scrutiny of critics. Critics have continually called for change. In 1959, the Ford Foundation made grants to various institutions to enable them to re-organize and improve their programs of teacher education.

Television and its related technology have played a large role in many of the programs which have developed. Television was first used in education to alleviate the difficulty of communicating with the resultant large masses of the population explosion. Education Television, Instructional Television and Closed Circuit Television were used extensively in both public schools and colleges with varying results. By 1963, well over half of the major universities in the United States were using Television for instructional purposes of one kind or another. The population explosion made it more difficult for colleges to provide teacher-trainees with an opportunity for classroom-observation in public schools. In many cases the number of student-observers outnumbered the class members in a given situation. Classroom teachers became reluctant to act as master teachers and public school administrators became unwilling to allow such a great number of student-observers into their classrooms. Television was used to alleviate this problem by bringing the classroom to the college rather than sending the teacher-trainees to the classroom.

Criticism of this technique became routine. There were those educators who maintained that the student-observer missed the full meaning of the classroom by watching

it on television. Others claimed that television viewing was advantageous to the trainees. It was their claim that extraneous and distracting activities could be weeded out by the camera operator, leaving only the meaningful materials for the students to observe.

Although the argument of live versus television-classroom-observation may not have been settled, the use of television has continued to spread in the area of teacher education. Microteaching was devised at Stanford University to allow pre-intern students an opportunity to practice specific teaching skills prior to being exposed to a real classroom with live students. Microteaching has been defined by the School of Education at Stanford University as a teaching situation which is scaled down in terms of time and number of students. In typical fashion this has meant a four to twenty-minute lesson taught to three to ten students.

Mirror television is another method of supplying teacher-trainees with an opportunity to practice-teach prior to their student teaching experience. Similar to microteaching, mirror television provides teacher-trainees with a videotape replay of themselves practice-teaching to a group of class members rather than public school students. The videotape playback provides immediate feedback for the student for self-evaluation with or without the presence of their classroom instructor.

Television is a relatively new medium to be used in Education. It is being used extensively in public schools as well as colleges and universities. Research has proven its value in the very critical area of teacher education.

CHAPTER III

DESIGN OF THE STUDY

This study is an experimental study conducted in a controlled environment to measure the value of videotape recorders for self-evaluation of their teaching skills by teacher-trainees prior to their student teaching experience.

I. HYPOTHESIS

It was hypothesized in this study that teacher-trainees who viewed a videotape replay of themselves practicing specific teaching skills prior to receiving an analysis of their lesson would score significantly higher on a specially designed Teacher-Trainee Evaluation Instrument than teacher-trainees who practiced the same specific skills but were not videotaped, and had to rely on their ability to recall a mental image of a given situation as they received the analysis of their lesson.

It was further hypothesized that the trainees who were exposed to the videotape facility would have a significantly more favorable attitude towards the Laboratory-Teaching experience than those trainees who were not videotaped. Also, the trainees who were videotaped would feel significantly more confident in their ability to use the practiced specific teaching skills than the trainees who were not videotaped.

II. DESCRIPTION OF THE SAMPLE

The total number of students enrolled in the two Education 314 classes taught by Dr. A.H. Howard during Winter Quarter, 1967-68 was fifty (N=50). Through random selection, these students were divided into two groups--Experimental and Control. They were further divided randomly into sub-groups and placed with a respective observer.

The number of women in the total group was thirty-two and the number of men was eighteen. Observer A was assigned fifteen women and ten men. Observer B was assigned seventeen women and eight men.

All students had progressed through a sequence of Education courses at Central Washington State College or their equivalent if they had transferred from other colleges. It is assumed that the variable of intelligence quotient and experience were distributed equally between the Experimental and Control Group through the institution's registration procedures and through random assignment to the Experimental and Control Group.

III. EXPERIMENTAL DESIGN

The total number of participating students were divided randomly into two groups, Experimental and Control. They were further divided randomly into two sub-groups and placed with either Observer A or Observer B.

The final experimental design which was adhered to throughout the duration of the study was:

	Experimental Group	Control Group	
Observer A	12	13	
Observer B	12	13	
	$n_1=24$	$n_2=26$	$N=50$

IV. INSTRUMENTATION

Three instruments were specially designed for this study: 1) Teacher-Trainee Evaluation Instrument (TTEI); 2) Attitude Scale and 3) Confidence Scale.

Teacher-Trainee Evaluation Instrument (TTEI)

Borrowing heavily from a study by the School of Education, Stanford University regarding Micro-Teaching (1:75-79) a Teacher-Trainee Evaluation Instrument (TTEI) was devised for this study.

Similar to an evaluation instrument used in a phase of Stanford's Micro-Teaching (see Appendix A) but revised to suit the purposes of this study, the final TTEI (see Appendix B) was devised by this writer and another Graduate Assistant who was to act as co-observer (Observer A and Observer B, respectively). The evaluation Instrument dealt only with aspects apparent in the delivery of a lesson.

The categories of the Teacher-Trainee Evaluation Instrument were: (1) Voice Quality; (2) Enunciation; (3) Over-All Eye Contact; (4) Gestures; (5) Interaction; (6) Pausing; (7) Oral-Visual Switching; (8) Stressing Key Points; (9) Teacher Distractions (Note: See Appendix B for a complete description of the Instrument.)

Validation of the TTEI. Some concern was felt for the ability of two different observers to agree upon perceived teacher behavior and on the degree of evaluation subscribable for a given behavior. Twelve different "Micro-Lessons" of Education 314 students from the previous quarter were previewed during the revising of the TTEI. The playback of the tapes was stopped at various spots of importance and the implications were discussed by the two observers. When it was felt that they were both thinking of, talking about and perceiving nearly the same behavior in a given situation, four more micro-lessons were previewed and scored, using the Instrument they had just devised. Results were discussed and compared and then on the next day four more lessons were previewed and scored by the two observers. A correlation coefficient of .900 showed that they were in close enough agreement to be valid.

Attitude Scale

A questionnaire was presented to each student in the Experimental and Control Group to determine their reaction to the Laboratory-Teaching experience (see Appendix C). The students were allowed to respond anonymously if they preferred to do so.

Some of the questions were worded so one could hypothesize that the students who were videotaped would respond more favorably than the students who were not videotaped. An example of this type of question is:

“I believe the experience of teaching would have been just as meaningful without the comments of the observer.”

- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |

Other questions were worded to test the students’ attitude toward the videotape experience. It could be hypothesized that the videotape equipment did not appreciably bother the students nor cause them any increased nervousness over the students who were not videotaped. An example of this type of question is:

“I was more at ease during my second lesson than my first and even further at ease during my third lesson.”

- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |

Other questions were worded to test the general effectiveness of the videotape experience. A typical question inquired about the students’ attitude toward their effectiveness in using the specific teaching skills listed on the TTEI. An example is:

“The Lab-Experience provided insight into the effectiveness of my GESTURES.”

- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |

Confidence Scale

To test the students’ level of confidence in their ability to use the specific teaching skills which they had been practicing (those listed on the TTEI), a Confidence Scale was submitted to all of the participating students (see Appendix D).

The questions were worded in such a way that one could hypothesize that the students who were videotaped would respond more favorably than the students who were not videotaped. A typical example is:

“I am confident that the GESTURING which I choose to display will enhance my lesson.”

_____ very confident

_____ uncertain

_____ confident

_____ very uncertain

V. TREATMENT

The students were not advised that they were involved in a study. The experience was introduced as part of the requirements of the Education 314 course (see Appendix E). All of the participating students were to teach three five-minute lecture-demonstration lessons in a specially assigned Teaching Laboratory. The lessons were to deal with some aspect concurrent to the media materials being studied in the Education 314 course. Each lesson was to be taught during a different teaching session with no more than one teaching session per week.

All of the scheduling was done by this writer, working from times which the students indicated on the three memos distributed at the beginning of their classroom hour (see Appendices F, G, and H). The students were scheduled to meet in groups of three on a given hour in the Teaching-Laboratory. Each student was to have a turn at teaching. The other two were directed to act as observers unless responding to a direct question from the person who was teaching. This decision was made by the classroom instructor and agreed upon for the purpose of this study since the time factor would not allow sufficient time for effective interaction. For this reason, and as reported in Chapter IV, that portion of the TTEI regarding INTERACTION (see Appendix B) was deleted when data from the study was compiled.

It was decided in the planning of this study that a minimum of two of the students from any group would have to be in presence before a session would proceed. In the event of absenteeism, a minimum of two students, again from the same group, would be required in presence before a make-up session would proceed. There would be no session if the students present were mixed between the Experimental and Control Groups or between Observer A and Observer B.

The students were not formally instructed on aspects of the TTEI. It was decided by the classroom instructor and agreed upon for the purpose of this study that the aspects of the TTEI would be brought out in various manners through discussion of various topics within the context of the classroom activities. Therefore, the instructor only briefly announced to the students those aspects which would be under observation during their lab sessions. Each item was read to the students present in class with little or no formal discussion called for on any one item by the students.

At the time of their first session, the students were again reminded of the aspects of the instrument which would be under study by their respective observers.

Outline of the Procedures Followed

The following outline is the procedure which both observers adhered to as closely as individual circumstances would allow:

EXPERIMENTAL GROUP

- 1) Observer introduced himself and explained that he was only there to OBSERVE the DELIVERY of the students' lessons. Students were cautioned not to include the observer in the lesson in any way.
- 2) Since the observer was also the camera operator in this study he announced to the students that they were going to be televised. This was their first awareness of this fact.
- 3) Televised and videotaped teaching lessons of all three students. No formal analysis at that time.
- 4) Assembled students around the television monitor. Handed out copy of the TTEI to each student, explained that the categories listed were the aspects of the lessons which were being watched.

CONTROL GROUP

- 1) Same procedure as Experimental Group.
- 2) No Television. The observer sat at the rear of the room. Even though the television equipment was in the rear of the room, no mention was made of it, no reason was given to the students as to why they could not be videotaped.
- 3) Observed first teaching lesson, made analysis but offered no feedback to the student at that time. Observed second and third students' lessons with the same procedure as above.
- 4) Assembled students at the rear of the room. Continued with the same procedure as with Experimental Group at that stage.

EXPERIMENTAL GROUP

- 5) Read each segment of the rating instrument (TTEI), elaborated and gave brief examples of each (examples were decided upon during the devising of the TTEI). Advised students to watch for aspects of the instrument in the playback of their lessons.
- 6) Played back first student's lesson. Made an analysis during the playback. Gave immediate feedback to the student, asked for questions or discussion and announced the results of the analysis to the student.
- 7) Played back second student's lesson. Repeated the procedure of the first.
- 8) Played back last student's lesson. Repeated procedure used in previous two.
- 9) Called for general questions or discussion from the group.
- 10) Distributed to each student a copy of the TTEI containing the results of his lesson.

CONTROL GROUP

- 5) Same procedure except without video playback as they were not videotaped.
- 6) Discussed the first student's lesson with him, asked for questions or discussion. Announced the results of the analysis to the student.
- 7) Discussed second student's lesson with him. Repeated the procedure of the first.
- 8) Discussed last student's lesson. Repeated the procedure used in the previous two.
- 9) Same procedure!
- 10) Same procedure!

Analysis Phase of the Lesson

The analysis phase of each lesson was carefully considered to insure that the students of each group would receive equal benefit from it. It was recognized prior to the study that an observer who also operated the television would have the advantage of seeing a student's lesson twice, therefore being able to be more specific in his analysis. It was agreed for the purpose of this study that this was a probable strength of television and videotape and should therefore be included in the study.

The following outline portrays the procedures of analysis for both groups:

EXPERIMENTAL GROUP

1) No formal analysis of the lesson was made until the playback was observed (preliminary observations were undoubtedly made during the taping phase but the responsibility of operating the television camera distracted from any formal evaluation).

2) Feedback to student came immediately after the playback of each student's lesson. There was a time lag of two lessons preceding each student's feedback. For the last person in the group there was not only the factor of watching two lessons prior to his own but also he heard two analyses. (To discount this as a variable, stringent attempts were made to insure that a student who was last on one lesson was not last on another.)

CONTROL GROUP

1) Done during and immediately following each lesson. No feedback was offered to the student until all three had completed their lessons.

2) Feedback came after all students had taught their lessons. The first student to teach was then the first to receive his analysis. The last student got to watch two lessons prior to his and heard two analyses. (Same precautions were made here as with the Experimental Group.)

V. CONTROLS

Several variables had to be controlled to insure that only the videotape experience would be different between the two groups' total Laboratory-Teaching experience.

Observer Bias

The fact that there were two observers required to evaluate the students' lessons in this study introduced the variable, Observer Bias.

There was no way to completely negate this variable but several factors were inacted to minimize its effects:

1) The two observers worked together in devising the evaluation instrument (TTEI). They observed exemplary tapes, evaluated these tapes on the instrument they had just devised and compared the results. Necessary revisions or additions were made to the instrument and more tapes were previewed.

2) Observer A viewed the lessons of half the total students in the Experimental Group and half the students in the Control Group. Observer B observed the other half of the two groups. The same students remained with the same observers throughout the duration of the study. The total results were then pooled when the data were tested.

3) All of the students were evaluated on the same validated instrument (TTEI).

Instructor Bias

The classroom instructor—Dr. Howard—offered his students for the purpose of this study. He was not aware of any specific student's status in the study—whether they were in the Control or Experimental Group. There was no formal classroom follow-up on any specific portion of the students' Laboratory-Teaching experience. It could be hypothesized, therefore, that there would be no effects of Instructor Bias in the data of the study.

Inter-Group Variables

To avoid the possibility of intergroup variables entering into the treatment of the two groups, Experimental and Control, several factors were implemented:

1) The students were scheduled in groups of three for each session. A minimum of two students were required in attendance before a session would proceed. Within these sessions, there was no allowance for inter-group mixing. All participants in any given session were from either the Experimental or Control Group. The same procedure was followed for make-up sessions.

2) To avoid possible "group rapport" among members of any session, each student was scheduled to be with at least one different member in each session.

3) All of the students taught a lesson concurrent to the media being studied in their Education 314 course.

4) Each student in each group had an opportunity to teach and an opportunity to observe another member in his group as he taught. In their observer role, each student was asked to respond only if answering a question directed to him by the person who was teaching.

5) The last person to teach in any given session had the opportunity to observe two lessons prior to his and hear two analyses. To discount this as a variable, stringent attempts were made to insure that a student who was last during one session would not be last during another.

Hawthorne Effect. To avoid the possibility of the Hawthorne Effect, the students were not advised that they were involved in a Study. The experience was introduced as part of the requirements of the Education 314 Course.

VI. ANALYSIS OF THE DATA

To test the first hypothesis of this study, the pretest scores of each student in the Experimental Group were compared with the pretest scores of each student in the Control Group. The posttest scores were compared in the same way. The first teaching session of each student was treated as the pretest and their third teaching session was treated as the posttest. A two-tailed t-test was implemented to test for significant difference between the pre- and posttest scores of the Experimental and Control Groups.

To test hypotheses 2 and 3 the data were compiled in mean scores and range. A comparison was made between the results of the Experimental and Control Group using Lords' Estimated t-Test. (9:41-67)

VII. SUMMARY

This study is an experimental study conducted in a controlled environment to measure the value of videotape recorders for self-evaluation of their teaching skills by teacher-trainees prior to their student teaching experience.

It is hypothesized in this study that teacher-trainees who view a videotape replay of themselves practicing specific teaching skills prior to receiving an analysis of their session will score significantly higher on a specially designed Evaluation Instrument than those trainees who practice the same skills but are not videotaped and must rely on their ability to recall a mental image of their lesson as they receive an analysis of their lesson. It is further

hypothesized that the trainees who are videotaped will have significantly higher attitudes toward the Laboratory-Teaching experience than those trainees who were not videotaped. Also, the trainees who are videotaped will feel significantly more confident in their ability to use the practiced specific teaching skills than the trainees who were not videotaped.

Two observers were used for this study to evaluate the students' lessons. Each observer was assigned 12 students from the Experimental Group and 13 students from the Control Group. The students who participated in this study were taken from the two sections of Education 314 taught by Dr. A.H. Howard during Winter Quarter, 1967-68. There were thirty-two women in the study and eighteen men. Through random selection, Observer A was assigned fifteen women and ten men. Observer B was assigned seventeen women and eight men.

Three Instruments were specially designed for the purpose of this study: (1) Teacher-Trainee Evaluation Instrument (TTEI); (2) Attitude Scale and (3) Confidence Scale. The TTEI was designed by the two observers. It was patterned after a phase of Stanford University's microteaching but revised to suit the purpose of this study. The evaluation instrument dealt only with the aspects apparent in the delivery of a lesson. The Attitude Scale was completed by each student in the Experimental and Control Group. The Attitude Scale was devised to determine the students' attitude toward the Laboratory-Teaching experience. The Confidence Scale was also completed by each student in the Experimental and Control Group. The Confidence Scale was devised to determine the students' level of confidence in their ability to use the specific teaching skills they had been practicing during the Laboratory-Teaching experience.

The students were to teach three five-minute lecture-demonstration lessons dealing with some aspect concurrent to the media being studied in the Education 314 course. The students were scheduled to meet in groups of three and alternate around the role of teacher/observer. They were not formally instructed on the aspects of the TTEI. The classroom instructor only briefly announced to the students those aspects which would be under observation during their lab session. At the time of their first session, the students were again reminded of the aspects of the instrument which would be under study by their respective observers.

Several variables were controlled to insure that only the videotape experience would be different between the two groups' total Laboratory-Teaching experience: (1) Observer Bias; (2) Inter-Group Variables and (3) Hawthorne Effect.

A two-tailed t-test was implemented to test the first hypothesis of this study. Lord's Estimated t-Test was used to test the second and third hypotheses. A complete report of the findings of the study is given in Chapter IV, listing the results in table form.

CHAPTER IV

FINDINGS OF THE STUDY

I. DELETIONS FROM THE STUDY

Several factors dictated changes and deletions during the treatment phase of this study.

It was suggested by the classroom instructor and agreed for the purpose of this study that there would be insufficient time in the five-minute teaching sessions for the students to accomplish effective interaction. For this reason, that portion of the Teacher-Trainee Evaluation Instrument (TTEI) dealing with INTERACTION was deleted from the study when the data were compiled.

The decision to have at least two students present in any one session and that these students would not be mixed between the Experimental and Control Group or Observer A or Observer B caused the data for six students to be deleted from the study. Two students from Observer B's Control Group and one student from his Experimental Group missed their last sessions. One student from each of Observer A's groups also missed their last sessions, leaving an over-balance of one student in the Control Group of Observer A. Attempts at scheduling a make-up session failed. For the purpose of this study, the data of one student in Observer A's Control Group was deleted from the study by random selection to balance the two sub-Control Groups. This adjusted the final N to 44 (N=44). There remained a total of 22 students in the Experimental and Control Groups ($n_1=22$, $n_2=22$).

II. HYPOTHESIS 1

The first hypothesis tested was that teacher-trainees who viewed a videotape replay of themselves practicing specific teaching skills prior to receiving an analysis of their lesson would score significantly higher on a specially designed rating instrument than trainees who practiced the same skills but received no videotape replay and had to rely on their ability to recall a mental image as they received an analysis of their lesson.

The specific skills were (1) Voice Quality, (2) Enunciation, (3) Over All Eye Contact, (4) Gestures, (5) Pausing, (6) Oral-Visual Switching, (7) Stressing Key Points, and (8) Teacher Distractions. Each skill was appointed four levels of achievement—Fair, Good, Very Good, and Superior. These levels were assigned a value of 1, 2, 3, and 4, respectively. Each student had a total-possible score of 32.

To test the first hypothesis of this study, the pretest scores of each student in the Experimental Group were compared with the pretest scores of each student in the Control Group. The posttest scores were compared in the same way. The first teaching session of each student was treated as the pretest and their third teaching session was treated as the posttest. A two-tailed t-test was implemented to test for significant difference between the pre- and posttest scores of the Experimental and Control Group. A value of 2.017 was required for significant difference at the .05 level of significance and a value of 2.696 was required for significant difference at the .01 level. (6:253) A t-score of .270 at forty-two degrees of freedom on the pretest indicated no significant difference at the .01 nor .05 levels of significance. A t-score of 2.661 at forty-two degrees of freedom on the posttest indicated significant difference in favor of the Experimental Group—the Group who viewed videotape replays of their lessons. The difference was significant at the .05 level but not the .01 level of significance. The results of the t-test on the pre- and posttest are summarized in Table I.

Since significant differences were found in the posttest, it was decided to do an item analysis of each category of the evaluation instrument (TTEI) to determine which category or categories produced the significant results.

With the theoretical hypothesis of significant difference accepted, a one-tailed t-test was used to measure the differences between the means of the scores of the Experimental and Control Group on each category of the TTEI. A value of 1.68 was required for significant difference at the .05 level and a value of 2.42 was required for significant difference at the .01 level of significance.

The item analysis of the posttest showed the scores of the Experimental Group to be significantly higher in five of the eight categories of specific teaching skills listed on the TTEI: Item 1 – VOICE QUALITY; Item 3 – OVER-ALL EYE CONTACT; Item 6 –

TABLE I
PRETEST AND POSTTEST SCORES OF THE
EXPERIMENTAL AND CONTROL GROUP

	Mean Score		Standard Deviation		t-Value
	Experimental	Control	Experimental	Control	
PRETEST	17.36	17.18	3.46	3.16	.270
POSTTEST	24.31	21.63	3.60	5.00	2.661*

*Significant at the .05 level of significance

ORAL-VISUAL SWITCHING; Item 7 – STRESSING KEY POINTS; and Item 8 – TEACHER DISTRACTIONS. Of these, items 1, 3, 6 and 8 were significant at the .05 level of significance and item 7 was significant at the .01 level of significance. The mean scores, standard deviation and t-value of the item analysis of the eight categories on the TTEI are shown in Table II.

III. HYPOTHESIS 2

The second hypothesis tested was that the use of the videotape equipment caused a significantly favorable change in the students attitude toward the Laboratory-Teaching experience. A numerical value ranging from six to one was assigned to the respective ranges of attitude. The scores of the Experimental Group were then compiled and tested against the scores of the Control Group with Lord's Estimated t-Test formula (9:41-67) The results of that test caused Hypothesis 2 to be rejected. There was no significant difference found between the scores of the two groups. The t-value was .36. At forty-two degrees of freedom t-values of 2.017 and 2.696 were required for significant difference at the .05 and .01 levels of significance, respectively.

To determine if there existed a possibility that at least one item was significantly different, an item analysis was made on each question on the Attitude Scale. Although the t-scores varied, there still occurred no significant difference. The scores ranged from a low \bar{t} of 0 to a high \bar{t} of .84. At forty-two degrees of freedom t-values of 2.017 and 2.696 were required for significance at the .05 and .01 levels of significance, respectively.

The mean scores, standard deviations and t-scores of the item analysis of the Attitude Scale are listed in Table III.

IV. HYPOTHESIS 3

The third hypothesis tested was that the use of the videotape equipment would cause the students to have significantly higher levels of confidence in their ability to use the specific teaching skills listed on the TTEI. A numerical value ranging from four to one was assigned the respective ranges of confidence. The scores of the Experimental Group were

TABLE II
ITEM ANALYSIS OF THE POSTTEST

	Mean Score		Standard Deviation	t-Value
	Experimental	Control		
VOICE QUALITY	2.91	2.69	.14	1.80*
ENUNCIATION	3.0	2.91	.01	0.60
OVER-ALL EYE CONTACT	3.0	2.73	.002	1.68*
GESTURES	2.78	2.45	.22	1.08
PAUSING	2.64	2.45	.20	0.96
ORAL-VISUAL SWITCHING	2.91	2.50	.20	2.04*
STRESSING KEY POINTS	3.05	2.59	.22	2.76**
TEACHER DISTRACTIONS	3.82	3.54	.14	1.68*

*Significant at the .05 level of significance

**Significant at the .01 level of significance

TABLE III
ITEM ANALYSIS OF THE ATTITUDE SCALE

Item	Mean Score		Standard Deviation	t-Value
	Experimental	Control		
2	4.92	5.25	1.75	.72
3	5.15	5.60	1.00	.84
4	2.33	1.60	1.58	.60
5	4.63	5.30	3.20	.12
6	5.21	5.33	1.33	.04
7	5.21	5.21	2.08	0
8	4.54	5.15	1.58	.12
9	4.80	5.15	1.33	.24
10	4.92	5.21	1.58	.12
11	5.0	4.92	1.58	.03
12	DELETED FROM THE STUDY			
13	4.83	4.63	3.08	.03

t = 2.017 required at .05 level of significance

then compiled and tested against the scores of the Control Group again with Lord's Estimated t-Test formula. The results of that test caused Hypothesis 3 to be rejected. There was no significant difference found between the scores of the two groups. The t-value found was .156, short of the 2.107 and 2.696 t-values required for significance at the .05 and .01 levels of significance, respectively.

To determine if there existed a possibility that at least one item was significantly different, an item analysis was made on each question on the Confidence Scale. The t-scores varied but there still occurred no significant difference. The scores ranged from a low t of 0 to a high t of .12, both falling short of the required 2.107 and 2.696 t-values required on the .05 and .01 levels of significance, respectively. The mean scores, standard deviations and t-scores of the item analysis of the Confidence Scale are summarized in Table IV.

V. SUMMARY

The three hypotheses tested in this study were: (1) teacher-trainees who view a videotape replay of themselves practicing specific teaching skills prior to receiving an analysis of their lesson will score significantly higher on a specially designed evaluation instrument than those trainees who practice the same skills but are not videotaped and must rely on their ability to recall a mental image of their lesson as they receive an analysis of their lesson; (2) the teacher-trainees who are videotaped will have significantly higher attitudes toward the Laboratory-Teaching experience than those trainees who were not videotaped; (3) the teacher-trainees who are videotaped will feel significantly more confident in their ability to use the practiced specific teaching skills than the trainees who were not videotaped.

The null hypothesis that there would be no significant difference between the scores of the Experimental and Control Group on a specially designed evaluation instrument is rejected and the theoretical hypothesis that there would be significant difference is accepted for Hypothesis 1. The group of students who were videotaped (Experimental Group) scored significantly higher on the Teacher-Trainee Evaluation Instrument than did the group of students who were not videotaped (Control Group).

TABLE IV
ITEM ANALYSIS OF THE CONFIDENCE SCALE

Item	Mean Score		Standard Deviation	t-Value
	Experimental	Control		
1	3.66	3.63	0.83	0
2	3.04	3.13	1.25	.03
3	2.92	3.17	1.25	.12
4	3.04	3.46	1.25	.12
5	3.13	3.42	1.16	.12
6	DELETED FROM THE STUDY			
7	3.13	3.17	2.00	0
8	3.66	3.38	0.66	.12

t = 2.017 required at .05 level of significance

The null hypothesis of no significant difference between attitudes of the two groups is accepted for Hypothesis 2. There was no significant difference found between the responses of the Experimental and Control Group to questions on a specially designed Attitude Scale.

The null hypothesis of no significant difference between levels of confidence between the Experimental and Control Group is accepted for Hypothesis 3. There was no significant difference found between the responses of the Experimental and Control Group to questions on a specially designed Confidence Scale. The results of the findings of each hypothesis are summarized in Table V.

TABLE V
SUMMARY OF HYPOTHESES FINDINGS

Hypothesis	Division	Instrument	Test Used	t-Value	Required t	Decision
1	Teaching Strategies	TTEI	Two-Tailed t-Test	2.661	2.017 at the .05 level, 2.696 at the .01 level	Accept .05 < p < .01
2	Attitude toward the Laboratory-Teaching experience	Attitude Scale	Lord's Estimated t-Test	.36	Same as hypothesis number 1	Reject p < .05
3	Confidence in ability to use the practiced skills	Confidence Scale	Lord's Estimated t-Test	.16	Same as hypothesis number 1	Reject p < .05

CHAPTER V

SUMMARY AND CONCLUSIONS

I. SUMMARY

This study was an experimental study conducted in a controlled environment to (1) determine if teacher-trainees who view a videotape replay of themselves practicing specific teaching skills prior to receiving an analysis of their lesson will score significantly higher on a specially designed rating instrument than trainees who practice the same skills but receive no videotape replay and must rely on their ability to recall a mental image as they receive an analysis of their lesson; (2) determine if the use of the videotape equipment causes a significantly favorable change in the students' attitude toward the Laboratory-Teaching experience; and (3) determine if the use of the videotape equipment causes a significantly favorable change in the students' confidence in their ability to use the specific teaching skills they have been practicing.

The review of literature in Chapter II attests to the broad usage of television in various aspects of education. The growth of television in education has not been without criticism but its broad span of uses has grown to include that very critical area of teacher-education. By 1963 well over half the major universities in the United States were using television for instructional purposes of one kind or another. Many institutions used television to supply their teacher-trainees with an opportunity to observe classroom activities. Through the use of television the classroom was brought to the college viewing rooms rather than having the college students crowd into the classrooms. Television and its related technology were also implemented to supply teacher-trainees with an opportunity to practice specific teaching skills before their Student Teaching experience while allowing them to see themselves as others see them. Microteaching and mirror television were programs of this nature. Microteaching, as defined by the School of Education, Stanford University, is a teaching situation which is scaled down in terms of time and number of students. In typical practice this has meant a four to twenty-minute lesson taught to three to ten students. Mirror-television, the other program used to supply teacher-trainees with an

opportunity to see themselves practicing specific teaching skills prior to their student teaching experience was implemented at Central Washington State College during Fall Quarter, 1966-67. Mirror television provides the trainees with a videotape replay of themselves practice-teaching to a group of classmates. The videotape playback provides them with immediate feedback for self-evaluation with or without the presence of their classroom instructor.

Careful planning and much deliberation must precede any new program. Once a program is implemented, research must be enacted to determine if the objectives are being fulfilled.

To measure the value of videotape recorders for self-evaluation of their teaching skills by teacher-trainees prior to their student teaching experience, fifty students who were enrolled in two Education 314 courses during Winter Quarter, 1967-68 were randomly divided into two groups—Experimental and Control.

Three instruments were designed for this study: (1) a Teacher-Trainee Evaluation Instrument (TTEI); (2) an Attitude Scale to determine the students' reaction to the Laboratory-Teaching experience and (3) a Confidence Scale to determine the students' confidence in their ability to use the specific teaching skills they had been practicing. Each student taught three different five-minute lessons dealing with some aspect concurrent to the media being studied in their Education 314 course. The students were scheduled to meet in groups of three in a specially assigned Teaching-Laboratory. They were to rotate around the position of teacher/observer until all had a chance to teach. The students who were videotaped (Experimental Group) then viewed a replay of their performances and received an analysis of their lesson from their respective observer. The students who were not videotaped (Control Group) followed the same procedure except for the absence of the videotape replay.

Several variables had to be controlled to insure that only the videotape experience would be different between the two groups' total Laboratory-Teaching experience. Two observers were used for evaluation of the students' lessons. To minimize observer bias, the following factors were enacted: (1) the two observers worked together in devising the evaluation instrument (TTEI). (2) each observer viewed half of the students in the

Experimental and Control Group. The total results were then pooled when the data were tested; and (3) all of the students were evaluated on the same instrument (TTEI).

To control other variables entering into the treatment of the Experimental and Control Group, (1) the students were scheduled to meet in groups of three for each session with a minimum of two students in presence for a session to begin; (2) each student was scheduled to be with at least one different member in each session; (3) all students taught a lesson concurrent to the media being studied in their Education 314 course; (4) interaction during the sessions was limited to responding only to specific questions from the student who was teaching; and (5) the last person to teach in one session was carefully scheduled so as not to be last in another session. To control the Hawthorne effect the students were not advised that they were involved in a study.

A two-tailed t-test was implemented to test for significant difference between the mean scores of the group who were videotaped (Experimental) and the group who were not videotaped (Control). The results of the Attitude and Confidence Scales were tested with Lords' Estimated t-Test.

II. CONCLUSIONS

From the results of the data presented in Chapter IV the following conclusions can be made:

- 1) Being able to view a videotape replay of themselves practicing specific teaching skills does cause teacher-trainees to score significantly higher on a specially designed evaluation instrument than trainees who practice the same skills but are not videotaped.
- 2) Teacher-Trainees have a favorable attitude toward the opportunity to practice-teach prior to their Student Teaching experience. The opportunity to be videotaped during this practice session does not cause a significantly more favorable attitude.
- 3) Teacher-Trainees who practice specific teaching skills in a Laboratory-Teaching situation feel equally confident in their abilities to use the practiced skills. The use of the videotape equipment does not cause significantly lower or higher levels of confidence.

III. DISCUSSION AND RECOMMENDATIONS FOR FURTHER RESEARCH

This study was conducted to measure the value of video-replays for teacher-trainee-self evaluation prior to their student teaching experience. Results of the study indicated that it is of value, that trainees can improve significantly over trainees who are not videotaped.

Because significant differences were found, it behoves every institution who offers teacher-preparatory courses to examine the potential of this medium and consider its adoption into their procedure of teacher education. Before this medium is adopted, however, the results of this study should be replicated through a like or similar study. In retrospect, there are several items for future researchers to consider.

The scheduling for this study was a monumental task. It was found in the scheduling of the first lab-session and reinforced in the second and third sessions that offering the participating students a choice of times for their lab-sessions adds much confusion and labor. On many occasions there were responses of only one hour-session preferred out of thirty-two possible hour-sessions. Further, the need to re-schedule just one student often required the re-scheduling of several students to insure one of the controls of the study.

The classroom instructor made the student-contacts during their classroom hour and advised them of their scheduled lab-session. This of course was an intrusion on his and the students' time. Careful planning must be afforded the scheduling of lab-sessions if a like or similar study is to be attempted.

Another item which deserves consideration is the student response to the Attitude and Confidence Scales. Due to time limitations in the study the students had been finished only a week with their lab-sessions when asked to respond to the questionnaires. Careful consideration should be given to the possibility of securing this portion of the data at a later date. It is felt that the students are still too engrossed in their experiences to respond accurately one week after completion of their sessions.

The questions on each of the scales should also be carefully reviewed. It is felt that some of the responses indicated more how well the students had achieved on the evaluation instrument than how they were affected by the presence or lack of the videotape equipment.

For the purpose of this study, all of the students were required to teach lessons concurrent to the media being studied in their classroom activities. Student remarks on the the questionnaire support the opinion that they should be allowed to teach lessons in their major-field: "I feel that we would have experienced more if we had been able to teach, from the beginning, a topic in which we would be interested in."

Several factors must be considered if this allowance is made: One, if students are to teach a lesson in their major-field, are the other students in the session to role-play or merely act as an audience to provide atmosphere? Experiences in other Laboratory-Teaching sessions indicate that role-playing, if not carefully and properly structured, can produce pitfalls. The students, lacking experience, might plan a lesson on their own level of maturity. Then, by practicing this lesson on a group of peers with equal maturity, they get their ideas reinforced. The danger lies in the time when they attempt the same type of lesson on children of much lower maturity. Second, if role-playing is over-done by a group of peers who are trying to simulate an elementary situation, this will be unfair to the student who is teaching. Surely teachers can expect to encounter student distractions but to have the role-players cram a full year of misfortune into one short lesson is hardly being realistic.

The self-evaluation portion of this study demands careful analysis also. In a controlled situation where everyone practices the same specific teaching skills and receives an analysis and discussion of their lessons from a trained observer, teacher-trainees can benefit from being able to view a video-replay of themselves practice-teaching. A question which arises is could the trainees benefit from a video-replay of themselves without the analysis and discussion of the trained observer?

The experiences gathered in this study would suggest that they could. First, however, they must have a common objective in mind when viewing a replay of themselves. Observations made during the teaching sessions support the assertion that most teacher-trainees do not know how to evaluate themselves. On many occasions students were

not aware of a certain distracting mannerism. They were not aware that doing something differently would be more advantageous to their students had they been teaching in a classroom. Only after being advised of a distraction or hearing a suggestion from the observer were the students able to recognize these facts as they looked again at the video-replay. Student response on the questionnaire supports this fact: "It was a valuable experience. The T.V. was not much help but the observer's comments were."

Future researchers might create a set of criteria for student-self-evaluation and then train the students in the usage of these criteria. It is asserted that if the teacher-trainees knew what to watch for and had an opportunity to participate in a large-group practice-evaluation session they could evaluate their lessons without the assistance of a trained observer. If research proved this to be true, the classroom instructors of the teacher-preparatory courses could then adopt a similar set of criteria for inclusion into their course content and train the students in their usage. This would free the instructor from the task of observing the practice-lessons of a large group of students and still provide the students with the much needed opportunity to practice-teach prior to their student teaching experience.

One of the controls in this study was Inter-Group Variables. This was a necessary feature of the study. Future researchers should consider the possibility of students learning from each other. A student response suggests: "Perhaps a student-observer evaluation would also be effective." This response leads to another which implies the need for considering having the students learn from each other: "I like having feed-back from a graduate student! The interaction is a little less pompous than with the student-prof interaction. He was an experienced teacher — could relate well to college students."

Finally, the lab-sessions should be considered. A consensus of opinion among both the videotaped students and the non-videotaped students was that the five-minute teaching sessions were "too short!" A student response suggests another area for consideration: "Immediate feedback is good. You should provide for immediate correction, however, not make us wait a week to improve." A limitation of television was also unveiled by a student response: "The T.V. has one fault — it can not pick up teacher distractions

such as grimaces, blinking etc. I think one observer should be running T.V. and another should be devoting his full attention to the lesson.” This response is recognized as coming from a student who challenged another student’s achievement on the Over-All Eye Contact portion of the Evaluation Instrument. The observer was totally unaware that the student was exhibiting distracting eye blinking and grimacing. These distractions were not detected on the video-replay.

Controlled research has proven that video-replays of themselves practice-teaching are valuable for self-evaluation by teacher-trainees prior to their Student Teaching experience. Comments from these trainees indicate limitations of this medium.

Colleges and universities who train teachers must be aware of the implications of television. They must also be aware of how highly appreciative the students were for the opportunity to practice-teach prior to their student teaching experience.

Whether television is used or not used is a decision which can be made by the college or university. The fact that teacher-trainees need and want this type of opportunity can not be ignored.

After all, these teacher-trainees will soon be dealing with students – human minds! How much naivete’ can be afforded a subject of so much importance?

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APPENDICES

APPENDIX A

STANFORD UNIVERSITY
SCHOOL OF EDUCATION
SECONDARY TEACHER EDUCATION PROGRAM

July 1966

VARIATION OF STIMULUS SITUATION

	POOR	FAIR	GOOD	VERY GOOD	SUPERIOR	OUTSTANDING	TRULY EXCEPTIONAL
TEACHER MOVEMENTS							
1. At various times during the lesson, the teacher was noted in the left, right, forward, and back of the teaching space.	1	2	3	4	5	6	7
TEACHER GESTURES							
2. The teacher used gestures (hand, body, and head) to help convey extra meaning in the presentation of the lesson.	1	2	3	4	5	6	7
FOCUSING							
3. When the teacher wanted to emphasize a point, it was clearly stressed through the use of gestures (e.g. pointing, banging on the board, etc.) or through the use of verbal expressions (e.g. "Listen closely," "Watch this," etc.) or by combining both gestural and verbal acts.	1	2	3	4	5	6	7
INTERACTIONS							
4. The teacher varied the kind of participation required of the students. That is, students could be directly called on, group questions were asked, student-student interchange could occur, students could role-play, go go the board, etc. The teacher is to mix these various techniques.	1	2	3	4	5	6	7
PAUSING							
5. The teacher gave the students time to think or get ready for new ideas by using silence. That is, all teacher activity ceases for short time periods.	1	2	3	4	5	6	7

TRULY EXCEPTIONAL	7
OUTSTANDING	6
SUPERIOR	5
VERY GOOD	4
GOOD	3
FAIR	2
POOR	1

ORAL-VISUAL SWITCHING

6. The teacher uses visual material (words on blackboard, objects, pictures, etc.) in such a way that the student must look to get the information. That is, the teacher doesn't say what the object or word is but refers to it in the lesson, making the student look, not listen to what is going on.

APPENDIX B

Ed. 314 Practice-Teaching Lab
Observable Aspects in the
DELIVERY
of the lesson.

	Not				
	Applicable	Fair	Good	Very Good	Superior
	0	1	2	3	4
VOICE QUALITY Volume, pitch, authority, inspiration, enthusiasm, controlled					
ENUNCIATION Word endings are clear, no slurred speech. Difficult or key words are sounded out precisely in a method suitable to the age level of the group					
OVER-ALL EYE CONTACT Teacher talks to students rather than floor, desk or chalkboard. Does not rely heavily on notes.					
GESTURES Gestures of hand, body and head help convey extra meaning to the lesson.					
INTERACTION Teacher allows variation of students' participation. Students are directly called upon, student to student interchange occurs. Techniques are varied and student response is controlled.					
PAUSING Teacher deliberately pauses in lesson to draw attention, motivate and inspire					
ORAL-VISUAL SWITCHING Teacher varies every student's participation between looking and listening.					

STRESSING KEY POINTS

Verbal expressions, changing of voice level and teacher aids were used to enhance the lesson.

TEACHER DISTRACTIONS

Tossing chalk, pacing, punctuating with "ah" etc. Repeats every student response or repeatedly states commending remarks (e.g. Very Good).

Not Applicable	Fair	Good	Very Good	Superior
0	1	2	3	4
Visible and Grossly Distracting	Visible and Slightly Distracting	Visible and not Distracting	Not Visible	
1	2	3	4	

- 6) Even though I was not in actual classroom, the experience provided insight into the effectiveness of my VOICE QUALITY.
- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |
- 7) The Lab-Experience provided insight into the effectiveness of my GESTURES.
- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |
- 8) The Lab-Experience provided insight into the effectiveness of my TEACHING TECHNIQUES.
- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |
- 9) The experience provided insight into the effectiveness of my OVER-ALL EYE CONTACT.
- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |
- 10) The experience provided insight into the effectiveness of the PAUSING in my lesson.
- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |
- 11) The experience provided insight into the effectiveness of my method for STRESSING KEY POINTS.
- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |
- 12) The experience provided insight into the effectiveness with which I used INTERACTION.
- | | |
|--|---|
| <input type="checkbox"/> agree very strongly | <input type="checkbox"/> disagree very strongly |
| <input type="checkbox"/> agree strongly | <input type="checkbox"/> disagree strongly |
| <input type="checkbox"/> agree | <input type="checkbox"/> disagree |

13) The experience made me aware of any TEACHER-DISTRACTIONS I might have had.

_____ agree very strongly

_____ agree strongly

_____ agree

_____ disagree very strongly

_____ disagree strongly

_____ disagree

APPENDIX D

CONFIDENCE SCALE

The following questions are to be answered by EACH student.

- 1) I am confident that my VOICE QUALITY will be adequate for a classroom.

<input type="checkbox"/> very confident	<input type="checkbox"/> uncertain
<input type="checkbox"/> confident	<input type="checkbox"/> very uncertain

- 2) I am confident that the GESTURING which I choose to display will enhance my lesson.

<input type="checkbox"/> very confident	<input type="checkbox"/> uncertain
<input type="checkbox"/> confident	<input type="checkbox"/> very uncertain

- 3) I am confident that I can use PAUSING effectively to motivate, inspire and direct my students.

<input type="checkbox"/> very confident	<input type="checkbox"/> uncertain
<input type="checkbox"/> confident	<input type="checkbox"/> very uncertain

- 4) I am confident that my OVER-ALL EYE CONTACT will make each student feel a part of the lesson.

<input type="checkbox"/> very confident	<input type="checkbox"/> uncertain
<input type="checkbox"/> confident	<input type="checkbox"/> very uncertain

- 5) I am confident that I can use verbal expressions, teacher aids and voice inflection to effectively STRESS KEY POINTS.

<input type="checkbox"/> very confident	<input type="checkbox"/> uncertain
<input type="checkbox"/> confident	<input type="checkbox"/> very uncertain

- 6) I am confident that I can use INTERACTION effectively and control the response of my students.

<input type="checkbox"/> very confident	<input type="checkbox"/> uncertain
<input type="checkbox"/> confident	<input type="checkbox"/> very uncertain

- 7) I am confident that TEACHER-DISTRACTIONS will not be a problem for me in my classroom.

<input type="checkbox"/> very confident	<input type="checkbox"/> uncertain
<input type="checkbox"/> confident	<input type="checkbox"/> very uncertain

8) The final question for your consideration is: Would you recommend this type of Lab-Experience to your friends in Teacher-Education?

_____ very strongly Yes!

_____ Yes!

_____ very strongly No!

_____ No!

What comments or suggestions would you like to make regarding your Lab-Experience? (briefly)

APPENDIX E

Ed. 314
 Winter Qtr. '68
 Dr. Howard

As part of the requirements of this class, you will be scheduled to teach three practice lessons in a lab situation. These will be lecture-demonstrations and each one should be no more than five (5) minutes long.

You will be scheduled to meet in the lab (Room 205, Hebler Elm.) in groups of three people and alternate from the role of teacher to student until all have had a chance to teach. THERE SHALL BE ONLY ONE LESSON PER LAB SESSION AND ONLY ONE LAB SESSION PER STUDENT IN ANY GIVEN DAY.

An observer will be present during this time to take notes and give you an analysis of your teaching.

You will be given further details about the practice lessons prior to the time you are scheduled to do them!

Since the class is large, scheduling will be tight! Therefore, it is imperative that you select lab times which you are certain you can meet and can be on time. Should an emergency arise, it will be your responsibility to make arrangements for make-up. Failure to meet for reasons other than an emergency is STRONGLY discouraged.

Using the times shown below, list three times during any week on which you would be available for your lesson. You will be notified well in advance of your schedule to insure adequate preparation time.

(Evening hours are recommended to help ease the strain of scheduling)

10:00 – 10:30 Daily	7:00 – 7:30 pm Daily
10:30 – 11:00 Daily	7:30 – 8:00 pm Daily
11:00 -- 11:30 Daily	8:00 – 8:30 pm Daily
11:30 – 12:00 noon Daily	8:30 – 8:30 pm Daily
1:00 – 1:30 M W F	9:00 – 9:00 pm Daily
1:30 – 2:00 M W F	9:30 – 10:00 pm Daily
2:00 – 2:30 M W F	
2:30 – 3:00 M W F	

NAME

CLASS PERIOD

APPENDIX F

Ed. 314
Winter Qtr. '68
Dr. Howard

The first session of your out-of-class practice lessons will begin Monday, Feb. 5th.

You have been placed into groups of three according to the times which you specified. Your second and third sessions may be at different times and with different people. The times will still be of your choosing.

It is imperative that you indicate now whether or not you will be present. If the time is convenient, write your initials next to your name. If the time is not convenient, please write your preference on a slip of paper and hand it to me today!

Please don't change your schedule in an attempt to be with a friend! Time limitations will not permit this for every student.

APPENDIX G

Ed. 314
 Dr. Howard
 Winter Qtr. '68

On the sheet below, indicate which sessions you would be available for your second Practice-Lesson. It is necessary that we make some changes in scheduling. If you have a preference, indicate this by placing a 1, 2, or 3 next to your name. List as many times as you are free.

Please be reminded that you are to teach the same lesson that you taught the first session. You may choose to change methods or materials for the lesson but the subject must be the same (e.g. if you taught bulletin boards the first time, you must teach bulletin boards again. You might, however, choose to use different aids or methods for teaching the lesson.).

Monday, Feb. 12	Tuesday, Feb. 13	Wednesday, Feb. 14	Thursday, Feb. 15
10:00 – 11:00	10:00 – 11:00	10:00 – 11:00	7:00 – 8:00 pm NONE
11:00 – 12:00	11:00 – 12:00	11:00 – 12:00	8:00 – 9:00 pm
2:00 – 3:00	2:00 – 3:00	2:00 – 3:00	2:00 – 3:00
3:00 – 4:00	3:00 – 4:00	3:00 – 4:00	3:00 – 4:00
4:00 – 5:00	4:00 – 5:00	4:00 – 5:00	4:00 – 5:00
7:00 – 8:00 pm	7:00 – 8:00 pm	7:00 – 8:00 pm	7:00 – 8:00 pm
8:00 – 9:00 pm	8:00 – 9:00 pm	8:00 – 9:00 pm	8:00 – 9:00 pm

APPENDIX H

Ed. 314
Winter Qtr. '68
Dr. Howard

This is a tentative schedule for your next lab-teaching session. Tentative in that it is hoped you will be able to comply. Scheduling of this nature is very difficult since other people must use the lab. Every attempt was made to schedule you in a time you chose. If you should not be, however, and you absolutely cannot meet the time allotted, please submit a list of other times for which you would be available.