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THE USEFULNESS OF THE PORTABLE VIDEO RECORDER IN SUPERVISING STUDENT TEACHERS OF SCIENCE

DISSERTATION

Presented in Partial Fulfillment of the Requirements of the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

George William Reynolds, Jr., B.S., M.S.

* * * * * * *

The Ohio State University 1966

Approved by

[Signature]
Adviser School of Education
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I am deeply grateful for the opportunity to study with Professor John S. Richardson and to profit by his skillful guidance. I am continuously challenged by the example of his scholarship and leadership in the field of science education.
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FIELDS OF STUDY

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Studies in Physics, Professor Wave H. Shaeffer
Studies in Teacher Education, Professor Earl N. Anderson and Professor Leonard O. Andrews
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Introduction

Occasionally in the supervision of student teachers there arises a crisis situation in which a breakdown in communications occurs between the student and the supervisor. In this situation the student teacher usually has an unrewarding experience. In the post-examination of the crisis and the events leading to the situation, the supervisor can usually establish that somewhere in the process there arose a problem in inter-personal relations which resulted in the loss of communication between him and the student. The reasons for the development of the problem are often indefinable or obscured by the environmental conditions related to the situation.

In examining a number of reports concerned with unsuccessful student teaching experiences, there is indication that not only the usual factors (academic preparation, professional preparation, emotional stability, personality, etc.)
which are reported in the literature but there are two additional factors which affect the success of the student in student teaching. These two factors appear to be the effectiveness of communication between student and supervisor and the perceptual image of teaching and the teacher held by the student.

Effectiveness of the student teaching experience for the prospective teacher is highly dependent upon the quality of the communications with the student involved. Both effective intrapersonal (as defined by Ruesch\(^3\)) and interpersonal communications are necessary in the attempt to prepare the effective teacher. It has been observed by Andrews, Wiggins, and others concerned with the supervision of student teachers that communication between persons involved poses a major problem in developing suitable learning experiences for the student.\(^4\), \(^5\), \(^6\), \(^7\) Stoller, in the Hunter College project report, indicated that both the student and he were often


handicapped when memories or a lack of sensitivity to certain events did not correspond with his anecdotal notes.

Now it ordinarily was not that my testimony was unacceptable, but words alone, used by a supervisor who is neither poet or novelist, are not enough to portray a complex of subtle interactions found in the classroom.8

Similarly, experiences of this investigator in the supervision of student teachers follow a similar pattern of frustration indicated in the references.

From the literature in perceptual psychology and the psychology of interpersonal relations, it may be demonstrated that there exists a positive relationship between an individual's perception of his environmental surroundings and the effectiveness of interpersonal communications with another person.9, 10, 11, 12 Individuals assume that the observer

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8 Schueler et al., op. cit., p. 106-107.


of an event and the participant in the event can communicate concerning the event from a commonality in their perceptions of the situation. It may be easily demonstrated that two individuals will form different perceptions of the same event when viewing the event from different vantage points. Even when the two individuals are in the same reference position, there is a reasonable probability that the perceptions of the event will be different. Therefore, it appears that interpersonal relations are dependent on communications which, in turn, are dependent on the perceptions of the individuals involved in the situation.

The supervisory process during student teaching is concerned with the motivation and the guidance of the student toward a higher degree of effectiveness as a teacher than he brought to the laboratory experience. In order to carry out the supervision of the student, the supervisor is largely dependent on the interpersonal relations and the interpersonal communications that he has with the student. In turn these are dependent on the perception of both parties with regard to the role of the teacher.

It is assumed that the supervisor has an acceptable perception of a teacher and teaching and, thereby, can analyze the performance of the student and can convey his analysis to the student teacher in initiating desirable changes in teaching behavior. If the supervisor has the
abilities indicated, then the perception of teaching held by the student either enhances or hinders the communication between them affecting the probability of a successful experience for the student teacher.

The new media offer an opportunity to compare the perceptions of the students with those of the supervisors by replicating actual teaching situations. They also offer the opportunity to examine the perceptual change in a student when confronted with the same reference frame as the supervisor. This common frame of reference provided by the video recorder should provide a means of improving communication between the student and the supervisor. The immediate playback feature inherent in the video recorder will permit the student to assess his own teaching behavior in relation to the changed perspective provided by the new frame of reference. This changed perspective ought to provide a basis on which to develop improved teaching behavior.

Statement of the problem

The purpose of this investigation is—

1. To relate the perception of the student in the form of the role concept of teaching to his relative success in the student teaching experience.

2. To determine the change in the role concept as a result of participating in the student teaching experience.

3. To develop a technique in which portable video
recording equipment may be used as an aid in the supervision of student teachers.

4. To compare the relative change in role concept between a group of science student teachers supervised in the usual manner with that of a group of science student teachers supervised with the aid of portable video recording equipment.

Since the knowledge relating the perceptual image of teaching to the success of a student in student teaching is of an empirical nature, it becomes necessary to examine this percept in an exploratory fashion in order to assess its importance in the preparation of a teacher. In the literature there is indication that there are definite, identifiable changes in the student during student teaching. These changes are usually attributed to improvement in skills of teaching and the maturation of the student. This change may also be due to the change in perception caused by the student's involvement in the teaching experience. The use of a validated instrument to measure role concept of teaching prior to and following the student teaching experience will provide data which can be compared with the teaching evaluation of the student. A comparison of the perception of the supervisor with that of the student will provide information from which inferences concerning communication

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13 Schueler et al., op. cit.
between parties may be drawn. The objectives as stated in this section and the subsequent reasoning leads to the following hypotheses which this investigator plans to answer in the framework of this study.

Hypotheses

1. Students who hold a broad concept of a professional teacher, as defined by the role conception test, perform significantly better in student teaching, as evaluated on the teacher evaluation form, than did the narrower employee oriented student.

2. The student teaching experience produces a significant change in the student's role conception of the teacher.

3. Student teachers of science who are supervised with the aid of the new media
   (a) show a larger change in role concept, and
   (b) perform significantly better as measured on the evaluation scale than their counterparts who are supervised in the usual manner.

Definitions

Technique. The term technique as used in this proposal has a broader implication than the mere mechanical process by which physical apparatus is manipulated during the observation. Technique is used here to represent the supervisory process during the student teaching experience of a prospec-
tive teacher. This includes the manipulation of physical apparatus, the supervisory conference, the observation, the anecdotal records, and the procedures by which desired behavior changes are initiated in the student teacher. In this study two techniques are compared with respect to their influence on the perceptual image of the teacher as perceived by the student.

The two techniques are referred to as the experimental and the normal or usual technique. The experimental technique is developed in some detail in the procedures section and it is sufficient to indicate here that the portable video recorder is used in the supervisory visits in conjunction with the anecdotal notes and the conference.

The normal supervisory technique must be developed in more detail as the usual process of supervision is varied slightly from one institution to another. This study was conducted at the State University of New York at Albany with the science student teachers. The reasons for selecting this institution and the particular teaching group are discussed in the section concerned with the sample. The

14The writer has been employed as a full time supervisor of student teaching in Science at this Institution during the Academic Years; 59-60, 60-61, 63-64 and 64-65. Academic Years 61-62 and 62-63 the writer was on leave for advanced studies.

15The writer's committee approved the site for the study and the selection of the group of student teachers involved. Further justification for this selection is found in CHAPTER III in the section on Description of Subjects.
following process which is described is the current policy
developed by the cooperative efforts of the staff in science
education. Many aspects of this policy were incorporated in
the past in an effort to enhance the communication between
the student and the supervisor.

**Conditions which affect the normal supervisory process.**
The following items are concerned with the basic policy of
the university with regard to the student teaching experi-
ence.

1. Students are admitted to student teaching with the
permission of the director of the School of Education.

2. All supervisors of student teaching are full time
personnel with the rank of assistant professor or higher.

3. The student teacher is supervised by a college
supervisor with secondary school experience in the same area
in which the student is teaching.

4. Student teaching is a full time experience for the
student involved during one half of the professional semester.

5. The student teaching experience carries a grade of
satisfactory or unsatisfactory and includes a weekly seminar
for the discussion of student teaching problems.

6. Insofar as possible, each student teacher is
matched with a cooperating teacher with whom the staff in
the teaching area feels that there is a high probability of
a successful teaching experience.
7. Student teachers are visited at least five times by the college supervisor at weekly intervals, as recommended by the department.

8. A full load for the supervisor is from ten to twelve students during any given quarter of student teaching plus the teaching seminar for these students.

Science education policy. In the area of science education the foundations for the supervision of student teaching are begun during the methods course and the related laboratory experience. In this program the basic lines of communication are developed between the staff and the prospective student teacher. Staff personnel conducting the related laboratory experiences will be the college supervisors for the student teaching experience. Thus the relationships and the interpersonal communications by the student in this course are carried over into the student teaching experience which follows the methods program.

The normal supervisory process consists of the following steps:

1. The pre-student teaching conference.

2. The initial supervisory visit (within three days after the student reports to assigned school, primarily to discuss details with the cooperating teacher).

3. The five supervisory visits (observation of the
student teacher, making anecdotal record, and a conference with the student and the cooperating teacher).

4. The final evaluation visit (special conference with the cooperating teacher in which the student is evaluated and the rough draft of the recommendation for employment is prepared).

5. The general post-teaching conference.

6. The individual post-teaching conferences with the student concerning the evaluation of the student's progress toward becoming a professional teacher.

7. The preparation of the final evaluation and recommendation for a teaching position.

Throughout the student teaching period the student and the cooperating teacher have instructions to get in touch with the supervisor whenever any abnormal difficulty arises during the laboratory experience. If such a condition arises, additional supervisory visits are immediately scheduled in an attempt to alleviate the situation.

During the student teaching experience a weekly seminar is conducted by the supervisor in which the students and the supervisors discuss the general problems that arise during student teaching. Some of the seminars are set aside to develop advanced techniques in science teaching, or to evaluate instructional facilities, etc. The sessions are generally informal to enhance intergroup communications.
Often some of the cooperating teachers are invited to take part in the program, particularly during the discussion of facilities and presentation of teaching ideas.

Scope and limitations

The scope of this study is limited to the comparison of two techniques for the supervision of student teachers in science at the State University of New York at Albany. The findings of this study would apply to a group of student teachers with similar academic and professional backgrounds. The details specifying the backgrounds of the subject group are presented in chapter three. The experimental technique was developed with a small group of student teachers to determine not only its value in the preparation of teachers but to determine its suitability for general usage in the supervision of students. This feasibility determination places the study in the status of a pilot study from which only implications may be drawn for the development of a wider program of evaluation of the technique. The study reflects the opinions of the supervisory group of the science education staff of the university relative to their experience as teachers, cooperating teachers, and supervisors in the area of science teacher preparation.

Organization of the dissertation

Chapter II reviews the literature and research studies pertaining to the use of video recording equipment in the
preparation of teachers. All projects that have been conducted or that are in progress known to the investigator have been reported and evaluated. Chapter III delineates the experimental procedures used throughout the investigation and describes the subjects participating in the study. Sections of the chapter include descriptions of the cooperating teachers and the supervisors as well as the student teachers. In chapter IV the findings, both qualitative and statistical relative to the subject groups, are reported with the tests of the hypotheses presented in the first chapter. Implications derived from the findings are presented in chapter V with suggestions for investigation relative to difficulties arising from this study.
A survey of the literature related to the use of television in teacher education reveals few reported studies wherein the video recording equipment has been used in the actual supervision of pre-service or in-service teachers. There is a large quantity of literature related to television in teacher education which depicts the manner in which this equipment has been used in presenting or supplementing the course materials of the professional sequence. There have also been studies related to the presentation of specific content courses in the various subject fields. This study has been concerned with the utilization of this equipment as an active tool in the supervision of the pre-service teacher during student teaching. Research has been carried out at four major centers relative to the use of video recording equipment in the preparation of the pre-service teacher. These studies include a project at Wayne State University, a study at Hunter College, and a study at Indiana University, all sponsored by the U. S. Office of Education. The fourth study was carried out at Stanford University under the auspices of the Ford Foundation. Each of these programs is
reported herein as an important part of the supporting literature.

The Stanford project

The Stanford project is described in large detail as it has only been reported twice at two conferences: the Santa Barbara conference of the Ford Foundation, April 1964, and the AREA conference in Chicago, spring 1965. The Stanford project parallels the concept of taking portable video recording equipment into the classroom which was used in this research problem.16, 17

The study at Stanford was brought to the attention of this investigator through a conversation with L. O. Andrews, Coordinator of Student Teaching, The Ohio State University, relative to the merits of the usage of video recordings in the preparation of the pre-service teacher in January 1963. At that time, Dr. Robert N. Bush, Stanford, was consulting with the Machtronics firm in the development of a portable video tape recorder. The utilization of the recorder in the active supervision of the pre-service teacher was conceived by him and became an important tool in the development of the "micro-teaching" concept.


The Stanford Secondary Education Project, a fifth year program developed under a grant from the Ford Foundation, is under the direction of professor James Olivera. Professors Dwight Allen, Jimmie N. Fortune, and Bush have actively pursued the "micro-teaching" concept and the utilization of the video recording equipment in the classrooms of the teaching interns. At the Santa Barbara conference, the "micro-teaching" concept was described and its utilization in the summer prior to the internship year was presented. At the AREA conference in Chicago, the results of analyzing the procedures used was reported.

The summer prior to the internship was divided into three phases: (1) the diagnostic phase, (2) the training phase, and (3) the evaluation phase. Since the prospective teacher has completed an undergraduate program in arts and sciences, he studies intensively during this summer the theory and methods associated with teaching and begins student teaching in the fall at a local school. The students who were assigned to the "micro-teaching" technique prepared a five minute lesson with little or no assistance from the professional staff and then taught the lesson which was recorded via the video tape recorder. This performance was then viewed by both the student and the supervisor and served as a base for the diagnosis which determined the pattern of the training phase of the
"micro-teaching" program. Following the initial recording the supervisor and student criticize the tape and immediately the student makes a second tape correcting some of the errors noted in the first tape. To make the situation more realistic the student is provided with five pupils who have been hired to react to his teaching. The five-minute recorded teaching lesson is the first of several which the student makes during the summer on various aspects of teaching behavior, hence the name "micro-teaching."

The training phase follows the diagnostic phase with emphasis on six segments of a usual class: (1) training on set induction, (2) training in closure, (3) training in the control of participation in the classroom, (4) training in the use of frames of reference, (5) training in student observation and control techniques in teach-reteach situations, and (6) training in statement analysis and questioning techniques. In each segment the student not only has the opportunity to see and evaluate his own performance in each area but also sees and evaluates the performances of his peers who are training in the same segment. Each one of the five minute sessions is evaluated and criticized by the supervisor and the student has the immediate opportunity to reteach the same segment with another group of pupils in an attempt to improve his teaching behavior.

Throughout the training phase, evaluations are conducted
as a means of encouraging the students' performance. The evaluation is made via the "Teacher Demonstration Rating" (TDR) form in which eight areas are rated from one to five: (1) the development of aims, (2) the understanding of aims, (3) the organization of content, (4) the meaningfulness of content, (5) the teachers method and communication, (6) review, (7) reinforcement, and (8) total reaction to the lesson. The evaluations with this form are made by the supervisor and also by peers training in the same areas. The same TDR form is also used in the evaluation of the intern phase of the fifth-year program.

Until the actual internship the student never teaches more than ten minutes at any time. During the internship the student carries the full responsibility for one-half a teaching load in a local school for a year. Throughout the intern year the use of the video recorder is continued with each intern being recorded four to six times. For supervising the interns the portable recorder and allied equipment, camera, monitor, microphone, amplifier and speaker are mounted on a laboratory cart with large wheels to facilitate moving up and down stairs. The total equipment weighs nearly two hundred pounds and can be handled by two men, the supervisor and the technician. The equipment is rolled into the classroom where the intern is teaching, and the technician plugs the equipment into the wall outlet and
then focuses the camera on the intern. The camera is fitted with a zoom lens which the operator may only focus on the intern or on a wider view including a portion of the class. While the supervisor observes, the technician makes a twenty minute tape of the class proceedings. The segments of the class period are scheduled prior to the visit and the operator alternately zooms in on the intern and back to include the class as set in the schedule. The technician operates the camera and the recorder during the session. Near the close of the period the intern asks whether the pupils would like to see a portion of the tape. The pupils can only see the backs of their own heads. The students are assured that the tapes will be erased and that only the supervisor and the intern will view the tape. The first tape that is made of an intern is saved so that he may compare and evaluate his progress as he proceeds through the internship.

The group at Stanford have indicated that a twenty minute tape is more than a sufficient amount of recording at any one time. In twenty minutes there is usually enough information acquired for the intern and the supervisor to assimilate and work with between recording sessions.

The analysis of the "micro-teaching" technique was based on the results of two summers, 1963 and 1964, of the experimental program. The group sizes were relatively small, one of ten and the other of twenty in both the experimental
and control groups. The data gathered with the Teacher Demonstration Rating form was processed and analyzed. Product moment correlation were made for each of the internal items of the TDR and the two groups compared.

It was found that candidates trained through micro-teaching techniques over an eight week period and spending less than ten hours a week in training performed at a higher level of competence than did a similar group of candidates receiving separate instruction and theory with an associated teacher aid experience involving a time requirement of between twenty and twenty-five hours per week. Particular significance was noted in the areas of method and communication and reinforcement. Performance of the intern in the micro-teaching situation accurately predicted subsequent performance in the classroom. Those candidates who received feedback from the pupils in the micro-teaching sessions improved significantly more in their teaching performance than did candidates not having access to such feedback. It was found that the students accepted the micro-teaching technique very well and that they recognized its value for their preparation as teachers. It was also found that teaching skills can be identified and can be manipulated via the micro-teaching technique. Manipulation of these skills via the micro-teaching technique will produce significant changes
in the performance of the interns during the instruction and subsequent teaching.

The Stanford project offers to the field of teacher education a technique which may be valuable in identifying those students who will need intensive supervision prior to the student teaching experience. The technique will provide a method of developing certain skills that are necessary for success in the classroom.

The Hunter project

The Hunter college project was concerned with the improvement of student teaching through the use of kinescope recordings made during the student teaching experience. A comparison of three methods of supervision (kinescope plus observer, kinescope only, and observer only) was made by examining changes in the behavior of elementary student teachers during their laboratory experiences. The research group developed their own observation scale and record for recording behavior change. The entire experience was performed in the laboratory school at Hunter college and


subjects were volunteers for the project. They found no significant differences in the method of supervision used with the student as measured in their study. It was found that there were definite but moderate uniform changes for all student teachers during the student teaching experience. These changes were attributed to the classroom environment rather than due to the effects of the supervisory method.

In order to have some uniform effect related to the classroom and the cooperating teacher, the experimental design assigned three volunteer subjects simultaneously to the same teacher and classroom for their laboratory experience. Following assignment the three subjects were randomly assigned to one of the three methods of supervision. Whenever the students were to be observed and/or recorded, the entire class and the student teacher were moved to a specially equipped classroom. This was necessary because of the large expense involved in equipping the classrooms with the cameras and microphones necessary to record the students. With only a few classrooms so equipped there arose a scheduling problem in the attempt to observe all the subjects involved. Although all the students were observed under the same conditions, movement of the entire class to a special room would appear to introduce a large disturbance factor in both the class behavior and the student teacher
behavior. The observation time was limited to thirty minutes each session because of the limitation of the kinescope recorder. Therefore each student had to limit his presentation to conform with the time requirement which is not the normal thing to do in the self contained classroom.

The assignment of three student teachers to the same cooperating teacher simultaneously imposes a serious time handicap on the student teacher in attempting to improve his teaching techniques via any supervisory method. It should be noted that all the subjects in the study were volunteers. This fact would most attract students who have a highly professional perception of the teaching act and may have negated some of the influence of the supervisory method used on the student. The report does not include any information relative to the success of the students involved in the study so one must assume that all candidates were successful student teachers.

Kinescope recordings were used because that was the type of video recording equipment available at Hunter at the time of the study. This meant that there was a time lag of at least twenty-four hours between the time of the recording and the student's first opportunity to view his classroom behavior. With the purchase of a video tape machine Hunter has been able to remove this time lag and obtain immediate response to the classroom action. When the Hunter group were
queried concerning the future of the study, they indicated that they were primarily interested in the exploration of the various ways that this equipment might be used in the pre-service preparation of a teacher rather than organizing its utilization as a regular part of the curriculum.

The Wayne State project

The Wayne State project under the direction of Dr. James B. Timtera attempted to determine the effectiveness of three methods of supervising student teachers. The three methods were (1) the conventional supervisor observation and conference method, (2) the supervisor observation and conference supplemented by three voice tape recordings, and (3) the supervisor observation and conference supplemented by three kinescope recordings. A different critique method was used with each group of student teachers. There were twenty-two students in each group and they were randomly assigned to either experimental or control groups. The elementary student teachers were placed in the East Lansing public school system. Measurements were made of the group of students immediately prior to student teaching, at the close of the student teaching period, and at the end of six

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months teaching as a professional teacher. The instruments used to collect data were (1) the Minnesota Teacher Attitude Inventory, (2) the Ryan Observation Scale, (3) the Student Attitude Scale of Teaching Problems, (4) the Teacher Self-Describer, and (5) the Supervisory Rating.

The conventional method of supervision needs no explanation. The voice tape recordings were made as follows. An audio specialist from Michigan State University installed two microphones in the classroom where the student was teaching the day before the student was to be recorded. They were connected to the tape recorder in the next room or in the hall. The audio specialist was told the approximate times that the student teacher would be in charge of the class. The audio specialist then recorded the student at one of the designated times. The student and the pupils never knew when the recording was actually taking place, although they were aware of the microphones installed in the classroom. Three such recordings were made of each student teacher in this group, one at the beginning of the student teaching, one-half way through, and one at the close of the laboratory experience. After each recording was made the student and the supervisor listened to it and discussed what might be done to improve the teaching behavior. Following the discussion the recordings were kept by the supervising teacher until the completion of the student teaching period. At
that time, the student could have the tapes destroyed.

The kinescope recording group was handled in a similar manner. Three recordings were made for each student in the group, one at the beginning of student teaching, one-half way through, and one at the close of the laboratory experience. In order to make the kinescope recordings, rather elaborate equipment was necessary. A trailer was fitted with the equipment necessary to make the recordings by the Michigan State University television station staff. The trailer contained the television monitors and selectors as well as the allied sync generators for the three cameras used in the recording. The cameras and microphones were installed in the classroom on the day before the recording was made, and the cables were lead out a window to the trailer. The transfer of the signals to the studio where the actual recording was accomplished was facilitated by the telephone company via coaxial cables or micro-wave relay. On the day of the recording three technicians operating the cameras, the student teacher, the cooperating teacher, and the pupils were all together in the same elementary classroom. The recording was processed and then it was viewed by the supervisor and the student. The discussion of the recording was used as a basis for the student to improve his teaching behavior. The recordings were kept by the supervising teacher until the completion of the
teaching period. The student then had the opportunity to have the recordings destroyed or could permit them to be used with future classes of prospective teachers.

One of the main purposes of this study was to investigate and experiment with the new media in the ongoing program of teacher education. In this respect the design of the study was more experimental than research based. When exploratory studies are undertaken, interested persons are inclined to project results into areas which will not bear up under close or intensive scrutiny. This study falls into that classification and must be considered as a deviation from the traditional regular method of student teaching. Although the results of this study indicate that the general findings fall into the category of no significant differences found in the test instruments used to determine variations among the student teacher trainees involved, there were some differences found which would lead to suggestions for teacher education programs. There were no differences found in the three groups at the close of the student teaching period regardless of the method by which the group was supervised. After six months of teaching in a regular classroom position, those teachers that were trained with the aid of the kinescopes and the voice tapes were found to rate higher on the measuring instruments than the group that had been supervised in the conventional manner. The students themselves prefer
the opportunity of self-observation as an instructional technique, and they prefer visual elements over vocal elements only. If satisfaction is a goal of the student teaching experience as well as proficiency in basic classroom behavior, then more opportunities for this type of self-evaluation should be provided by those institutions preparing teachers.

**The Indiana project**

The Indiana project was concerned with the improvement of the quality of teacher performance by the use of the video tape recorder. Under the direction of H. A. Bern the project was developed in two phases, the first phase was the development of the technique, and the second phase to measure the effect of the recorder on teaching performance of a student as it was used to coach subsequent presentations of the student. The students used in the study were methods students from the various academic areas, who were required to present a five minute lesson on some assigned topic. All lessons in the study were presented in the television studio classroom of the university. Two students of each disciplinary area were assigned the same topic for presentation. One student was coached by the supervisor without the aid of the video tape feedback for his second and subsequent

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presentation of the same lesson. The second student of the pair was coached by the supervisor with the video tape as feedback to point out the strengths and weaknesses of the student. All presentations of the students in the television classroom were recorded and preserved for later evaluation in the study.

After all the recordings had been made methods teachers and supervisors were requested to rate each of the performances which were randomly presented using the rating scale. Results from this rating were then evaluated with respect to the objectives of the study. Final results of this study have not been released or reported by professor Bern. Professor Bern has indicated to this investigator that the final report of the study will be available sometime after March 1966. He also indicated that the results did not show a high degree of significance relative to the performance of the two groups during the evaluation of the tapes in the study.

Other literature

Several other projects were investigated relative to the use of television in teacher education. Follis designed a study to evaluate the use of closed circuit television as a means of improving teacher effectiveness through an in-
service program of observation. Master teachers were observed by both groups of teachers and administrators and were rated by the groups. The master teacher's techniques and approaches to the teaching situation were discussed by the group of teachers. Opinionaires were distributed to the participants and the responses were reported as the evaluation of the program. From the responses it was decided that the closed circuit television was a tool which would be valuable in improving teacher effectiveness.

Evans investigated the attitudes of the faculty at the University of Houston relative to the value of instructional television. He surveyed the attitudes through a questionnaire submitted to the faculty and then separated the two groups representing the extreme anti-ITV and pro-ITV personnel to determine the characteristic attitudes toward instructional television. Within the questionnaire the faculty were asked to judge the quality of their own teaching. In the results there was evidence that the professors had a tendency to over-rate their skills in teaching. All the


professors rated themselves average or better than average with eighty-five percent considering themselves better than average.

The members of two departments were selected to evaluate the use of the video tape recorder as a method for improving their classroom instruction. The professors were categorized either pro-ITV or anti-ITV from their initial response to the faculty questionnaire. Each professor had the opportunity to teach a class situation and be recorded via the video tape recorder. He viewed himself and evaluated his teaching immediately following the recording. If he wished, the professor could reteach the situation and reevaluate himself. Following this experience the professor was reexamined by a second questionnaire to ascertain if there had been any change in his attitude toward instructional television. Evans reported that there was a tendency favoring the utilization of television in university teaching.

Within this faculty the anti-ITV group was very much larger than the pro-ITV group. The anti-ITV group expressed two predominant attitudes relative to the use of television. They expressed a concern that the elimination of contact between the student and the professor would be detrimental to the university's purpose. The second attitude most expressed was that the utilization of television was a threat to their own job security. Although at the beginning of the
study most professors had not considered the use of television as an aid in the improvement of teaching skills, following the investigation more of the university faculty recognized the usefulness of the equipment in teaching.

Although this investigator found no studies directly related to the perception of the teaching image and the success of a student in student teaching, he did find a study relating the role expectations of a principal with the perceptions of the principal to his role. In this study Sweitzer found that principals and superintendents involved in the study held similar perceptions for the administration of the school. The instruments used in this study offer suggestions concerning how the role concept of teaching held by a student teacher might be determined.

Corwin at Ohio State developed an instrument for determining the role concept of teaching which was used in his study in examining staff conflicts in the public schools. The instrument was used to determine whether the teacher had a greater tendency toward a professional attitude of teaching.


or believed himself primarily an employee. A validation of the scale items was performed and product moment matrix of linear correlations was reported. The sample upon which the scale was developed were selected from teachers in the field. Criteria were established to identify the professional teacher as opposed to the employee oriented teacher within the sample. Corwin indicated that the evidence from the questionnaires and the scales validly selected those teachers which were professionally oriented. A discussion of the correlations which he obtained is discussed in the chapter of findings as this scale was utilized in this study as one of the instruments for collecting data.

Summary

In summarizing the projects which are in progress or have been completed relative to the use of video recording techniques in the supervision of student teachers, it is appropriate to note that with the exception of one study all have reported no significant gains or differences relative to the instrumentation used to gather data in determining the effectiveness of the video recording technique in the supervision of student teachers. It should also be noted that in all studies reported the use of video recordings was used to supplement the normal supervisory process. Although not specifically stated but implicit in the reports, the video recordings serve as an excellent reference frame leading into the super-
visory conference. In two of the studies kinescopes were made of the student's performance at different times during the student teaching assignment. In neither of these studies was any single individual's performances examined in detail to note specific behavioral changes during the laboratory experience. The Stanford study reported gains in the ratings of subsequent recordings of any single micro-teaching session after the first recording had been viewed and discussed with the appropriate supervisor. The variations in the rating form from one study to another was not large. In all cases the investigators were rating the same type of behavioral characteristics. In all cases except the Stanford study, the investigators evaluated the global aspect of the student rather than any small group of characteristics. In the Stanford study the investigators examined only seven aspects of teacher performance in the classroom and examined each of these seven in individual micro-teaching sessions.

In all cases the ratings are the result of the subjective judgment by supervisory personnel involved in each study. Their evaluations will be dependent upon their experiences as teachers, cooperating teachers, and supervisors of student teaching. The evaluations made in this manner reflect the biases and opinions of the individuals that are making the observations. There has been no attempt to develop an objective rating instrument which would eliminate supervisory judgments.
Objective measuring instruments apparently are not practical for measuring the global aspect of student teaching performance, but may be developed to measure an individual's perception relative to a particular aspect or phase of the teaching act. Corwin has developed such an instrument for use in his study of staff conflict. The items on this instrument seems to rate those characteristics which identify the image of the professional teacher. This particular instrument might be used to measure change in a student's perception while undergoing the student teaching experience.
CHAPTER III

THE DESIGN OF THE STUDY

The Description of the technique and Special Equipment

In this investigation the portable video tape recorder was used as a supplementary tool in the supervision of the student teacher. The technique followed for its use differed from the techniques followed in the literature cited in that truly portable recording equipment was used and that the recording took place in a "normal classroom rather than in an artificial studio classroom." The equipment used in this study is nearly identical to the equipment used by the Stanford group in their field visits to their interns.

The technique in utilizing the equipment was to set up the camera fitted with a wide angle lens in a fixed location in the rear of the classroom and to connect it to the recorder. The class session in its entirety, 45 minutes, was recorded by turning on the equipment and allowing it to run throughout the class period. The same class period was observed by the supervisor who made notes as usual during the student teacher performance. At the close of the class the recorder was stopped and the tape rewound in preparation for the conference.
that followed with the student teacher. Upon the completion of the class observed and recorded the student was first asked his opinion relative to the general success of the class that he had just completed teaching. The student's opinion was noted in the supervisor's notebook and was also noted by the student in his own notebook. The student teacher and supervisor then replayed the video tape with the student teacher particularly making notes relative to his own performance. Following the viewing of the recorded performance the student was reasked the question soliciting the opinion relative to the success of the class just completed and changes or verification of his opinion were duly noted in the supervisor's notebook. At this point the supervisor asked the student to identify sections of the class which were particularly good and to identify segments which needed improvement. These segments were verified and expanded upon by the supervisor. The recorded performance was used to illustrate and reinforce the supervisor's comments relative to the teaching performance of the student.

By recording the entire class period from slightly before the beginning bell through to slightly after the dismissal bell, all the events which took place during the class were on the video record of that particular period. This permitted the supervisor and the student teacher to analyze events leading to any situation arising during the class and
to analyze the events subsequent to the situation allowing both the student and the supervisor to suggest methods of attacking similar situations as they might arise during the laboratory experience. The video recording was then returned to the investigator for viewing in conjunction with the verification of the conference procedures. Following this, for a majority of the tapes made, the recording was erased as a subsequent recording was made of the same student or another student. This erasure was necessary due to the limited quantity of video tape available to the investigator. It would have been desirable to have had sufficient tape to allow a record of initial performance and final performance for comparison purposes for each student involved in the study. At present the recordings of a single student teacher have been preserved by the investigator.

During the entire conference notes were made by the supervisor, cooperating teacher, and the student. The conference was also recorded on a small transistorized tape recorder and the transcript of the conference was transmitted to the investigator with the duplicate copies of the notes made by both the supervisor and the student teacher for verification of the conference procedures.

The equipment utilized in this investigation consisted of a Dage vidicon camera fitted with a wide angle lens, a precision instrument (PI-3V) portable video tape recorder
which was connected to the camera via a length of coaxial cable, a television set which could be connected to the recorder via the transverter or a monitor and small audio system with which to view the video tape recording. The video tape recorder was placed upon a table which could be rolled into the classroom. The camera was placed on a stand in the back of the classroom. Both the camera and recorder were then connected to a convenient outlet. A portion of the recordings were made with the recorder external to the classroom connecting it by means of a longer cable. The microphone was suspended from the ceiling of the classroom and its associated cable led to the recorder. On the Dage camera that was used was a small three-inch monitor permitting easy adjustment in the classroom being recorded. The relative noiseless operation of the equipment which needed no attention during the recording produced a minimum of distraction in the classroom.

Selection and description of the subjects

The subjects in this study were the science student teaching population of the School of Education, State University of New York at Albany for the academic year 1963-64. This group consisted of thirty-nine students, of which twenty-five were male and fourteen female. The student teachers were seniors in the School of Education with the exception of one graduate student in the basic classroom teaching program.
All of the subjects, with the exception of the graduate student, were committed to science teaching at the time of their entry into the university. The range of age of the undergraduate students was from twenty-one to twenty-five. The single graduate student was a forty-one year old female. The distribution of academic majors was as follows: two general science majors, six physics majors, twelve chemistry majors, and nineteen biological science majors.

This student teaching population was selected because all of the students have a common undergraduate core in science and mathematics as well as the same professional education sequence. In addition to the common core each student majors in one of the four aforementioned academic areas meeting the AAAS recommendations for the preparation of the secondary school science teacher. All of these students were admitted to the university at the time when the institution prepared only secondary school teachers, and were selected for admission on the basis of becoming future teachers.

Another reason for the selection of this particular group of student teachers was determined by the availability

of very complete personnel records on each of the individual students. Each student has an individual personnel folder that was started upon his application to the School of Education for admission to the college. This record includes his initial request for application, his application, the transcripts of high school record, the recommendation from his school, the results of the selective admission examination, the notes relative to his personal interviews prior to admission (one with the director of admissions, one with a member of the professional sequence staff, one with a member of the speech department, and one with a faculty member from a department other than his prospective major), his letter of acceptance to the program, evaluations made by the residence counselor and his academic advisor during his tenure at the university, and a record of any disciplinary action or incidents in which the student was involved in during his days as a student both praiseworthy as well as detrimental. These records provided an excellent base for the case history of the student as he entered into student teaching. These records are available to the members of the faculty of the School of Education at any time during the student's tenure in the university. These records were made available to the investigator, as a member of the faculty, during his study.

The School of Education having acquired a portable video recorder just prior to the start of this investigation
was anxious to explore various ways this new equipment could supplement the teacher education program. When it was proposed to conduct the study at the School during 1963-64, the proposal was met with enthusiasm and offers of technical assistance from the television department. The study also had the approval of the administration of the university. The science education staff of the School of Education readily agreed to assist in the data collection through the operation of the equipment and the close adherence to the proposed data collection system in the attempt to maintain uniformity of procedures with the student teachers. The staff of the university in academic areas and the education department has been very stable over the years. This fact insures a uniformity in the presentation of the course materials which affect the general background of the student as he enters student teaching. The science education staff, charged with the presentation of the methods and techniques of teaching and the supervision of the student teacher, have similar backgrounds and teaching experience. These persons have also worked together in the administration of the science teaching program for several years insuring a common philosophy relative to the desired outcomes of the student teaching experience.

The assignment of students to one of the student teaching quarters was accomplished jointly by the chairman of the
major area and the chairman of the science education staff
to insure even distribution of the students over the academic
year. The assignment of a particular student to a particular
student teaching quarter depended on the courses that remained
to be completed by the student during his senior year.
Student teaching at Albany is a full time assignment for one-
half of one semester. During this time period the student
has no other commitment on his time. In many cases the student
will live in the community where he is assigned to student
teach. The remaining half of the semester in which he teaches
the student completes his professional sequence and a special-
ized course in the philosophy of science required of all
prospective science teachers.

The students were assigned to experimental and control
groups by this investigator such that each teaching quarter
had representatives in both groups, experimental and control.
For a matter of convenience for recording the experimental
population were assigned the campus school for their student
teaching. Not only was this a matter of convenience but
rather it permitted the recording of the student teachers and
pupils in the classes without any legal problems that might
have arisen in a public school. Negotiations have been com-
pleted with two of the cooperating public school systems
permitting the use of portable video recording equipment in
their classrooms. As this technique is perfected and the
program of supervision with the aid of the video tape re-
corder is expanded, these schools and others will be used to
evaluate the technique.

The cooperating teachers and the schools

At Albany the cooperating teachers and the schools in
which student teachers are placed, are selected by the staff
of the department concerned with the supervision of a partic-
cular group of student teachers. A list of cooperating
teachers and schools that have been recommended by the admin-
istrators and science department chairmen is provided to the
science education staff for the selection of a cooperating
teacher with whom a student is going to be placed for his
laboratory experience. The science education staff make the
final decision whether or not to use any particular teacher
or school in the region during any particular school year.
Each student is placed insofar as possible with a cooperat-
ing teacher who teaches in the same disciplinary area as the
student teacher's major or if placed in a junior high school
with a cooperating teacher with similar major interests.
Wherever possible the students are placed with teachers who
teach more than a single subject area in science or single
grade level so that the student's experience will be as broad
as possible.

Each cooperating teacher, prior to placement on the
list, must hold permanent certification for teaching science
in the State of New York, and must have taught the subject area in which the student teacher will participate for at least three years, preferably in the school system in which he is currently teaching. The backgrounds of the cooperating teachers are available to the supervisory staff in making their selections.

The students are placed within a forty mile radius of Albany, so that visitations may be made by a supervisor commuting from Albany. The cooperating schools are all accredited New York State public secondary schools and the majority are centralized school districts. There are, however, two or three city school systems utilized for student teaching experiences. The typical secondary school is either a senior high school (grades ten through twelve) or a junior high school (grades seven through nine). In a few cases the school is a nine through twelve or a composite junior-senior high school.

Since the schools are located within a forty mile radius, the science teachers, science department chairman, and administrators of the schools are known personally by the science education staff of the university. The university staff and the cooperating teachers participate together in regional science teachers' association meetings and in in-service meetings sponsored by the local section of the American Chemical Society. These factors facilitate the selection of a particular cooperating teacher to work with a
particular student teacher during the laboratory experience. These factors not only facilitate the selection process, but enhance the probability of successful and enjoyable experience by all parties concerned with the student teaching experience. Thus this system for the selection of the cooperating teacher permits the selection of highly qualified teachers to work with the student teacher. Nearly all of the cooperating teachers have also completed the off-campus workshop orienting the prospective cooperating teacher to the university policy and program in teacher education. Although the selection of the cooperating teacher is made upon the judgment of the science education staff, confirmation of their high professional orientation to teaching was demonstrated by their score attained on the Professional-Employee Orientation Role Concept Scale developed by Corwin of Ohio State University. Only one of the twenty-three cooperating teachers involved in this study returned the Corwin scale with scores that would place him in the high employee-low professional orientation group as measured by that scale.

The supervisors

The supervisors of the student teachers in science are the members of the science education staff. The staff is comprised of six men who have had experience as public school science teachers, and cooperating teachers prior to joining the university staff. As a general policy the
Science education staff members have a minimum of five years of public school experience and in at least one of these years was a cooperating teacher for one of the teacher education institutions in the state.

The science education staff has a multi-fold commitment in the teacher education program of the university. The staff operates the campus school science program as teachers in the classes for demonstration purposes in support of the professional sequence and as cooperating teachers of some student teachers assigned to the campus school for their laboratory experience. Cooperatively the staff presents the specialized methods course in the teaching of science and its related laboratory program for the science teaching majors prior to their assignment to student teaching. They are responsible for the supervision of the student teachers in science, both in the campus school and in the cooperating public schools. The staff is also concerned with the development of changing curricula in the sciences for the secondary school. Recently the department is becoming concerned with the development of graduate programs in science teaching as the university program expands.

Each member of the department has a broad base in the sciences and a depth area in a single science. Specialities represented among the six members of the department include zoology, botany, chemistry, physics, and earth science. All
members of the department have completed some graduate study in their own specialized field as well as completing some graduate study in science education and related education areas. Teaching experience for the group ranges from ten years to fifteen years of secondary and college teaching experience. The present members of the department have worked together in science teacher preparation for the past six years presenting a common philosophy relative to science teacher preparation.

Although this investigator found no studies directly related to the perception of the teaching image and the success of a student in student teaching, he did find a study relating the role expectations of a principal with the perceptions of the principal to his role. In this study Sweitzer found that principals and superintendents involved in the study held similar perceptions for the administration of the school. The instruments used in this study offer suggestions concerning how the role concept of teaching held by a student teacher might be determined.

The description of the measuring instruments

Two instruments were used to collect data relative to the growth or change in the student as he participated in and

completed the student teaching experience. One of the instruments used was the evaluation form which has been in use at the university for a number of years and the second instrument was the Professional-Employee Orientation Role Concept Scale developed by Corwin at the Ohio State University. The reasons for choosing two instruments were to verify the work done at Stanford in which the evaluations of performance was dependent on supervisory judgment, and to compare the results of these judgments with the changes noted in an objective scale that was marked by the student himself before and after the student teaching experience. Undoubtedly the personal biases of the evaluators will be reflected in the marking of the evaluation form.

The evaluation of student instrument (Figure 1, Page 50) has eighteen categories and an overall rating of the student's performance. The eighteen categories were selected in committee and approved following discussion of the entire faculty concerned with the supervision of student teachers. The categories selected for evaluation were based on their collective judgment taking into consideration the characteristics that an employing officer would be seeking in a new teacher. Each item on the scale is rated from zeroth percentile through one hundredth percentile on a linear scale reading from left to right. The fiftieth percentile representing the average student teacher. Beneath the line
STATE UNIVERSITY OF NEW YORK AT ALBANY
FINAL EVALUATION OF STUDENT TEACHERS

| NAME: | 
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**ABILITY TO MAKE ADJUSTMENTS**

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<tr>
<td>Unable and unwilling to modify procedure or opinions</td>
<td>Accepts changes with direction</td>
<td>Anticipates situations and adjusts to them</td>
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**APPEARANCE**

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<tr>
<td>Unruly, careless, poorly groomed</td>
<td>Usually neat and well-groomed</td>
<td>Unruly, well-groomed, tidy and attractive</td>
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**CLASSROOM MANAGEMENT**

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<tr>
<td>Student achieves personal control; well-mannered, class functions comfortably</td>
<td>Maintains suitable class atmosphere for learning</td>
<td>Classroom climate very conducive to learning</td>
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**CREATIVITY**

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<tr>
<td>Student exhibits originality in organization, execution in details</td>
<td>Tidy, non-original organization</td>
<td>Very creative, very excellent</td>
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**EMOTIONAL MATUREITY**

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<tr>
<td>Student exhibits absence of fear, anxiety, depression and tension</td>
<td>Normally adequate emotions</td>
<td>Mediates conflicts with firm, direct, unmanipulative control</td>
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**ENGLISH USAGE**

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<tr>
<td>Student exhibits use of correct levels of usage</td>
<td>Obscures proper usage with incorrect definitions</td>
<td>Understands and conveys complexity to appropriate levels</td>
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**INFLUENCE ON STUDENTS**

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<tr>
<td>Leadership lacking or not accepted</td>
<td>Leadership gains through response</td>
<td>Impelling, response enthusiastic</td>
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**METHODS**

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<tr>
<td>Dependa largely on one procedure</td>
<td>Grasps several different procedures well</td>
<td>Well-explained variety of appropriate procedures</td>
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**PRESENTATION**

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<tr>
<td>Monotonous, confused, colorless</td>
<td>Usually excellent in clarity and interest</td>
<td>Usually excellent in clairty and interest</td>
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**PROFESSIONAL BEHAVIOR**

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<tr>
<td>Actuates relationship to the profession in a conventional manner</td>
<td>Efficiency in judgement and action</td>
<td>Adapts a personal and dynamic attitude in new situations</td>
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**INDIVIDUAL DIFFERENCES**

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<tbody>
<tr>
<td>Teaches class as an entity only</td>
<td>Occasionally provides for individuals</td>
<td>Consistent attention to individual needs</td>
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**RELIABILITY**

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<tbody>
<tr>
<td>Reflects responsibilities</td>
<td>Generally carries out responsibilities</td>
<td>Carries out responsibilities efficiently and consistently</td>
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**SOCIAL SKILLS**

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<tr>
<td>Lacks tact or consideration for others</td>
<td>Usually kind, considerate and unobtrusive</td>
<td>Excellent social presence</td>
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**SUBJECT MATTER**

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<tr>
<td>Concepts and facts often confused, erroneous and distorted</td>
<td>Concepts clearly presented; facts and processes stated in class, lecture, outline, visual aids</td>
<td>Concepts clearly understood, broad and accurate factual information</td>
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**USE OF AVAILABLE RESOURCES**

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<tr>
<td>Supplements basic text</td>
<td>Uses basic elements of supplementary material</td>
<td>Finds and effectively uses such supplementary material</td>
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**VITALITY**

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<tbody>
<tr>
<td>Sympathetic and pleasant</td>
<td>Acceptable; generally pleasing</td>
<td>Pleasant voice, well-modulated</td>
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**VOICE**

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</tr>
</thead>
<tbody>
<tr>
<td>Questionable as to pitch, volume, stress and quality</td>
<td>Acceptable; generally pleasing</td>
<td>Pleasant voice, well-modulated</td>
<td></td>
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</table>

A brief personal statement of the kind that will help a prospective employer.

This candidate's overall student teaching performance is satisfactory satisfactory good outstanding

SCHOOL: 

D. Far: 

STATE UNIVERSITY OF NEW YORK AT ALBANY

COLLEGE SUPERVISOR

REV. 8/64-5M
on which each item is rated are amplifying phrases that apply to each characteristic being rated.

In this investigation an evaluation form was completed on each student teacher at the time of the initial visit by the supervisor. This evaluation was used to indicate areas in which the student teacher needed marked improvement during the laboratory experience. A copy of this initial evaluation became a part of the case history of each student teacher. Throughout the student teaching period, the evaluation form was used to indicate the progress of the student.

Since the subjects in this investigation were rated by six different individuals, a test for their consistency in their ratings was conducted by having each supervisor rate two video tape performances of a student teacher. The ratings were then compared for deviations in the individuals who were doing the rating of the student. The rating sessions were conducted at two different times to reduce the influence of the discussion which followed each of the sessions. It was found that the ratings made by the science education staff were consistent varying no more than plus or minus five percentile on the individual items. Several of the items cannot be adequately judged from a single performance. These items include professional behavior, emotional maturity, subject matter comprehension, and social skills as the
supervisors would not have sufficient personal contact with the student being rated.

The product moment linear correlations for the eighteen items that are on the scale were made in order to determine the interdependence of each item and their relation to the overall performance of the student. The matrix of linear correlations for the student teachers involved in this study is found in Table 1. For the number of students involved, a correlation of 0.32 is significant at the 0.05 level and a correlation of 0.42 is significant at the 0.01 level. Examining the matrix, it is readily observed that the correlations presented are all significant at the 0.05 level with the exception of those correlations related to the item concerned with appearance. Although this item does not show a significant correlation, it is probably significant in itself in that the individual student teachers are conforming to an acceptable pattern of dress which is related to the image perceived by society of "how a teacher should look."

The consistency demonstrated by the supervisors in rating the students and high significance of the intercorrelations of eighteen items with the overall rating indicate that this evaluation form used is suitable for measuring the changes in the student's performance during the student teaching experience.

The Professional-Employee Role Concept Scale (Appendix A)
Table I: A Matrix of Linear Correlations for the Items in the Student Teaching Evaluation

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<th>Item</th>
<th>1</th>
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<td>Ability to make adjustment</td>
<td></td>
<td>.81</td>
<td>.74</td>
<td>.80</td>
<td>.48</td>
<td>.81</td>
<td>.80</td>
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<td>Classroom Management</td>
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<td>.39</td>
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<td>Influence on Students</td>
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<td>.83</td>
<td>.48</td>
<td>.67</td>
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N=39. Values of r=0.32 are significant at P > 0.05; values of r=0.42 are significant at P > 0.01.
was developed by Corwin to be used as an instrument in examining staff conflicts in the public schools.\textsuperscript{29} The scale presents a list of situations regarding the role of a teacher to which the subject is requested to respond with the degree of agreement or disagreement he has relative to the statement. The subject is given five choices ranging from strongly disagreeing through undecided to strongly agreeing. The choices are then weighted from one to five and the resulting total is calculated for each section and sub-scale of the instrument.

The role concept scale is divided into two major sections, the employee orientation scale and the professional orientation scale. Each scale is then subdivided into sub-scales which are identified as characteristic of the two orientations. The subdivisions of the professional orientation scale are client orientation, orientation to colleagues and profession, monopoly of knowledge, and decision-making authority. The subscales of the employee orientation scale are administrative orientation, loyalty to organization, experience, interchangability, rules and procedures, and public orientation.

Corwin used the split-half method for determining the reliability of the items in each of the subscales and the two major sections as wholes.\textsuperscript{30} The reliability for the

\textsuperscript{29}Ronald G. Corwin, \textit{op. cit.}

\textsuperscript{30}Ronald G. Corwin, \textit{op. cit.}, page 175a.
employee orientation scale by means of this technique was 0.74 and when corrected was reported to be 0.99. The reliability for the professional scale by the same technique was 0.48 with corrected reliability reported 0.99.

Corwin also presented a matrix of the linear correlations in each of the two scales. From the number of the individuals involved in the construction of the instrument, correlation coefficients of 0.12 were significant at the 0.05 level and coefficients of 0.15 were significant at the 0.01 level. The matrix indicated that the subscales in each section of the test were highly correlated with the total score in each section. Thus the scale does present an image of the teacher relative to his professional and employee orientation.

In this study the role concept scale was administered to the subjects prior to the student teaching experience to ascertain the students' image prior to the laboratory experience. It was administered to the students a second time following student teaching to ascertain whether there was any change in the student's orientation which would be caused by involvement in this laboratory experience. The product moment linear correlations were calculated for both the pre-student teaching scores and the post-student teaching scores for comparison with the matrix reported by Corwin.

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31 Ronald G. Corwin, *op. cit.*, page 188.
In writing the hypotheses it was assumed that there were changes in the student teacher's behavior and abilities as a teacher as a result of participating in the laboratory experience. It was assumed that these changes would be identified by significant gain in the rating on the evaluation instrument and by an appropriate change in the objective scores measured by the role concept scale, since the student had only been exposed to a highly professional orientation of teaching in the university classroom. These two instruments were chosen to measure that change and to determine if there was a significant difference between the group supervised in the "normal" manner and the group that was supervised with the aid of the video tape recorder.

The data collection procedure

The procedure for collecting the data on each of the student teachers is centered around the development of a case history file. Since the total number of subjects involved was relatively small, the case history file provided an excellent method for storing the data available for each individual. Since no two individuals bring into student teaching identical background experiences, it is necessary for the supervisory personnel to have as much information concerning the student and his background as possible. This situation makes it necessary for a practical method of storing this information and the case history file makes this
possible. Throughout student teaching the supervisor can file all pertinent information into the file for ready retrieval as any situation presents itself. The case histories were held by the investigator throughout the study. At the close of the study the files were returned to the science education staff for storage.

In the case history file (sample Appendix B) was placed the following information. From the personnel records of the university, copies of the entrance examination scores, biographical information, scores on standardized tests, and notes on the anecdotal reports of the residence hall counselors and academic advisors were obtained for the file. From the registrar's office academic grade point averages; overall, professional education, and math-science, were added to the file. The scores from the comprehensive secondary school science subject matter test were added from the science education records. During the orientation to student teaching, the Watson-Glaser Critical Thinking Appraisal and the Professional-Employee Orientation Role Concept Scale scores were added to the file. The initial student teaching evaluation was added after the first supervisory visit. Throughout the student teaching experience, a copy of the notes for each supervisory visit were added after verification with the audio tapes of the conferences. At the close of student teaching the final evaluation and the post-student teaching administra-
tion of the Professional-Employee Orientation Role Concept Scale were placed in the file. Following the post-student teaching conference, the carbon copy of the student teacher's notes relative to the laboratory experience were added to the file. The role concept scores of the cooperating teacher and the supervisor along with the school and the subjects taught made the file complete for each student.

The notebooks that were used by both the supervisors and the students during the study were provided by the investigator. These notebooks were the laboratory type in which a carbon copy is made of the information at the time of making the original. The carbon copy pages are perforated for removal from the notebook and were removed and placed in the case history as noted in the preceding paragraph.

The treatment of the data

Following the close of the study the statistical data was retrieved from the case histories and assembled for analysis. A guide was constructed to facilitate the translation of the check marks on the evaluation to numerical percentiles to be placed on punch cards for computer calculations. All numerical data available on the subjects were placed into the punched cards for computation.

Conferences with the data processing service of the university revealed that the number of variables that were available could not be handled at this time by the university
equipment. The investigator then consulted commercial data processing services and following several conferences the Schenectady Information Processing Center of the General Electric Company devised a method of utilizing a library program with the G.E. 225 computer for the calculation of most of the quantities necessary to analyze the data. The computer performed the calculation of the mean, variance, standard deviation, covariances and the linear correlation matrix for all the variables available. This information was from the first half of the multiple linear regression program. The second half of the program which were the regression calculations was omitted except in the analysis of the student teaching evaluation form. From the computer output the data was charted so that the interdependence of the available information could be examined.

The difference in the means was computed for the pre-test and post-test scores of the Professional-Employee Orientation Role Concept Scale and the critical ratio computed to determine if there was any significance in the difference. The gains or losses as measured by the difference between the initial and final teaching evaluation were subjected to computation and the differences in the means were computed and the critical ratio calculated to determine if there was any significance in the change as measured by the student teaching rating form.
Critical ratios of 2.03 are significant at the $P > 0.05$ level, and critical ratios of 2.72 are significant at the $P > 0.01$ level.
CHAPTER IV

THE FINDINGS

The findings are set forth in this chapter starting with the general qualitative reactions of the supervisors and the subjects involved in the experimental technique. These are followed with the statistical analysis of the Professional-Employee Role Concept Scale and the student teaching evaluation form.

The supervisor's reaction

Each supervisor who was involved in the experimental technique was requested to examine the procedure and give his opinion relative to its value in the program of supervising the student teacher. Without qualification all six supervisors responded enthusiastically with regard to the promise that the video tape recordings offered in developing a frame of reference for the discussion of the student's performance during the conference following the observation. This common frame of reference provided a base for easy communication with the student with respect to the aspects of the class that went very well and made it possible for the supervisor to illustrate exactly what portion of the class period he was
concerned with for the student to work on to improve his ability as a teacher.

Through the use of the video tape recording, the supervisor and the student were able to identify events that occurred in the class that neither was aware of during the teaching and observation. The video tape was a concrete record from which the supervisor could analyze the events leading to any particular situation that might have arisen during the class period. On the basis of the record the student and supervisor could suggest methods of meeting a similar situation in future classes. The tape made it possible for more than a single supervisor to examine the same performance of a student teacher. The tape provided a basis for intradepartmental discussion relative to the manner in which student teachers were evaluated.

The availability of the video tape capability led to the development of many ideas as to where the recordings would be very useful in secondary school teaching and in teacher education. Some of these suggestions will appear in the final chapter as recommendations for future use and experimentation. The subjects' reaction

At the beginning of the study all the prospective subjects were gathered together in a classroom and briefed as to the type and purpose of the investigation. It was explained to the subjects that some of them would be assigned
to control group and some of them would be supervised by the experimental technique using the video tape recorder. All the subjects were issued the notebooks that were to be used in making their diaries of the student teaching experience and were informed as to the manner of usage. The roles of the various supervisors were explained.

At this initial conference, there was a wide variety of reactions by the students relative to the possibility of being recorded via the video tape recorder and being able to see themselves teach as others (the supervisors and their pupils) would see them. Many of them thought that this opportunity would be an interesting experience for them to be involved in. Some of the students were apprehensive relative to the prospect of being recorded. A few of the students remarked relative to the possible assistance that such a recording could be to their experience of learning to be a teacher. Some of the students questioned whether or not the recordings would be saved for future showing or would they be erased and not shown to anyone outside of the university. Some were interested in how their participation in this study would affect their student teaching recommendations. The subjects were all informed that no recording would be saved without their specific permission to retain the tape for future use. They were also assured that their participation would not adversely affect any recommendation that the
department might give to a future employer. The reactions, verbal and physical noted in this paragraph, indicated that possibly the "Hawthorne Effect" would be operating throughout the experiment. The possible influence of this effect on the total findings is discussed in Chapter Five.

At this initial conference the Professional-Employee Role Concept Scale and the Watson-Glaser Critical Thinking Appraisal were administered to the subjects. They were informed that, if they wished, their scores on the instruments would be available to them along with an interpretation of what the scores indicated. It was suggested that they request this information at the close of the student teaching period, and that their complete cooperation throughout the study was requested by the investigator.

As actual recordings of a student teacher were accomplished, some of the initial reactions reappeared as the student approached his first viewing of his own student teaching performance. Each student involved in the experimental technique was requested to express in his diary his initial reactions as he began to view the first recording as well as his own reactions relative to his performance. The carbon copy of the diary was not submitted until after the student had completed his student teaching and his recommendations had been completed and filed with the placement office. The materials when collected were filed in the case history file.
A comparison of the notes relative to supervisory conferences was made to see if the student had reacted to the suggestions for the improvement of his performance as a teacher.

The verbal response of the students relative to the value of being able to observe themselves teach was very favorable. With one exception the students outwardly demonstrated their interest in the situations that arose in their classes while they were teaching and they indicated concern as to how they might approach a similar situation if it arose in a subsequent class. Several of the supervisors made the observation that the students became very engrossed with the viewing of their performances and made comments throughout relative to the events as they took place in the classroom. An example of this behavior may be illustrated as follows. A student while viewing his class noticed one boy near the rear of the room trying to attract his attention by waving his hand. After observing that he did not recognize the student during the next five minutes of viewing asked the supervisor, "Do I ever call on him?" The next several minutes of viewing was anxiously watched to see if he, the student teacher, actually did call on the student.

During subsequent recordings and viewings of their teaching, the students generally became more astute in their observations and were able to analyze critically their performance and select aspects of the class that were well done
and also those areas in which they needed to improve. Many of the students were able to take the events that led to an adverse situation and indicate the cause for the particular event. Several were able not only to identify the causes of such situations but were also able to offer concrete suggestions for preventing a similar situation to arise in a class. An example of this type of behavior is illustrated from the following situation. A student teacher was being recorded while teaching the concept of pressure being a force per unit area. He asked a pupil to go to the blackboard to do a computation on a graph. The pupil went to the graph, began to work on it and the teacher turned around with his back to the remainder of the class to observe and comment on the pupil's progress with the problem. When he did this the other pupils began to whisper and make noise. As a result of his action, he momentarily lost the control of this class of junior high school pupils and had some difficulty regaining an orderly class procedure. When the teacher had the opportunity to view that same class he immediately detected the events leading to the situation and indicated to the supervisor a satisfactory method of preventing a similar situation by suggesting that as the pupil approached the blackboard that he, the student teacher, should have moved away from the blackboard to a position where he could observe both the progress of the student and the class at the same time.
The student teachers looked forward to subsequent recordings to observe whether or not they had made any improvement in their teaching ability. The supervisors observed that the students that were supervised with the aid of the video tape became more sensitive to the total classroom situation in recognizing pupils and being aware of their individual actions. The students were presenting lessons with smoother transitions from one aspect of the class to the next, and were able to control the class relatively early in their student teaching.

Although evaluations of the degree of enthusiasm relative to the value of the experimental procedure to the student do not yield to statistical treatment, the following quotations are offered as supportive evidence of a non-statistical nature in favor for the use of this technique in the supervision of student teachers. The quotations are excerpts from the student teaching diaries relative to the viewing of their own teaching via the video recording. The quotations are representative comments from both the more able and the less able student teachers as ranked by the ratings of their final evaluations.32

"I was a little apprehensive when I heard about this process at the beginning, but today when I saw it in practice I immediately saw its

32The rank of the student teachers in the experimental group determined by their over-all final evaluation is found in Table 4.
value as an aid to my teaching. As I watched
the playback of my class, I made notes on things
I want to improve. The supervisor offered some
very good suggestions as we looked at the tape.
I like the idea; as a matter of fact I think it
is going to give me added incentive to improve
because, I can actually see my improvement."33

"Today I observed myself over video tape again,
enjoying it as much as the last time. I became
aware of words that I use- and how they were
projected. Some words I used over and over
again like Right! I found I sometimes tend to
mumble some words so that they are not under­
standable. Word choice is something that is
hard to do. The searching for the correct word
or phrase that will communicate to the class
exactly what you mean provides a frustrating
situation."34

"1. You can be told but it's not the same as
seeing-or you can be told and will do but you
do not see why until you can view yourself
from the back of the room.
2. The supervisors advice was observed to be
sound.
3. Voice modulation was excessive—
4. Inadequately handled an adjustment to
make the class move faster--class bogged in
part.
5. Questioning good- but I did not handle
the responses well.
6. Called on one person six times - another
4 times.
7. In all 9 out of 24 participated--poor
8. Must be more clear about the board work.
Must not put too much on lower part of boards.
9. Focused most of my attention to one sec­
tion of the class too much--- slight problem
but nevertheless evident."35

"I saw myself teach today. It was quite shock­
ing and also very interesting experience. I

33 Excerpt from Student Teaching Diary of Student #10.
34 Excerpt from Student Teaching Diary of Student #10.
35 Excerpt from Student Teaching Diary of Student #14.
am forever saying "All right". I must be more moderate in the use of this expression. The seventh grade was rather noisy and restless today. I must be more stern with them. Use of the video tape machine seems to be an excellent way for a student teacher to evaluate his teaching; a supervisor could never say as effectively what a teacher can see with his own eyes."

"My reaction to seeing myself teach via television.
1. Prior to this experience, I felt that TV might be a very good idea to aid self evaluation. I felt that I would probably be nervous, however.
2. Since I didn't know I was on camera, I wasn't nervous and my class went pretty much as usual. This is a big advantage over having the supervisor sitting in class. The entire situation, students & myself alike, is more typical.
3. Some faults I was easily able to detect as I watched myself. These would include; failure to call on people, failure to recognize raised hands, not enough voice modulation, and an occasional slurring of words.
4. Other faults aren't as obvious to me but can be easily pointed out by my supervisor as I make them via TV. This is good since I forget some things which occurred during class.
5. All in all, I was pleased with myself even though there is much room for improvement.

The class, in general, went quite smoothly. By use of the TV I can spot where improvement is needed most and then go ahead and do something about it.

Note: This television idea is a good one. I don't know why it hasn't been used before. Watching oneself teach a class is as good an educational program as commercial TV has to offer."

"By seeing the video tape, I was made visually

36 Excerpt from Student Teaching Diary of Student #15.
37 Excerpt from Student Teaching Diary of Student #20.
aware of my faults in the classroom. The supervisor was then able to point out the things I had done (some of which I had already noticed) and tell me how to correct them. I was much more enthusiastic about using the new techniques than I believe I would have been if I had not seen how my teaching had been affected. For example, I held a rather stationary position in front of the room, and when I used the blackboard, I would tend to face one side of the room, thus cutting off my vision of the other side of the room. I was shown that if I changed the direction in which I was facing as I crossed the middle of the room, I would have a better view of the classroom as a whole. I noticed some faults in my audio expression. I could see various actions going on in the class of which I was unaware while I was teaching.  

These quotations are samples which are representative of the reaction of the students that were supervised via the video tape recorder. In these statements one can recognize the value that the students placed on being able to see themselves teach. In the statements there is also some of the general enthusiasm for the technique and the loss of any fear or threat to their instruction during the student teaching experience.

Table 2: The Rank of the Student Teachers in the Experimental Group

<table>
<thead>
<tr>
<th>Rank</th>
<th>Student Number</th>
<th>Rank</th>
<th>Student Number</th>
<th>Rank</th>
<th>Student Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14</td>
<td>8</td>
<td>7</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>9</td>
<td>11</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>10</td>
<td>12</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>31</td>
<td>11</td>
<td>20</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>34</td>
<td>12</td>
<td>32</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>13</td>
<td>30</td>
<td>20</td>
<td>36</td>
</tr>
<tr>
<td>7</td>
<td>39</td>
<td>14</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

38 Excerpt from Student Teaching Diary of Student #32.
Students ranked 9, 10, 11, 12 were rated the same on their overall evaluation. Student number 23 withdrew from student teaching; student number 36 was evaluated unsatisfactory and not recommended for teaching. All other students were evaluated satisfactory and recommended for teaching.

The Professional-Employee Role Concept Scale

The scores that the subjects made on the role concept scale were punched into data processing cards and operated on by the computer. The range of scores, means, and standard deviations were tabulated and are presented in Table 3.

Table 3: The range of scores, means, and standard deviations for the subjects on the Professional-Employee Role Concept Scale

<table>
<thead>
<tr>
<th>Group</th>
<th>Range</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prof.</td>
<td>Emp.</td>
<td>Prof.</td>
</tr>
<tr>
<td>Total Pre-Test</td>
<td>53-70</td>
<td>68-117</td>
<td>60.2</td>
</tr>
<tr>
<td>Control Pre-Test</td>
<td>54-70</td>
<td>68-98</td>
<td>59.9</td>
</tr>
<tr>
<td>Experimental Pre-Test</td>
<td>53-67</td>
<td>71-117</td>
<td>62.4</td>
</tr>
<tr>
<td>Total Post-Test</td>
<td>51-72</td>
<td>73-111</td>
<td>59.0</td>
</tr>
<tr>
<td>Control Post Test</td>
<td>51-72</td>
<td>74-111</td>
<td>56.9</td>
</tr>
<tr>
<td>Experimental Post-Test</td>
<td>56-66</td>
<td>73-107</td>
<td>62.7</td>
</tr>
</tbody>
</table>

From Table 3, it is readily observed that all cases the variation within the total group is small, and that the variation within the two groups, experimental and control is also small. The change in score between the pre-test and the post-test is
small in both experimental and control group. When the difference between the means of the control and experimental group is submitted to test of significance, the critical ratio calculated from the data is below the value necessary for significance at the $P > 0.05$ level and is also below the value for significance at the $P > 0.10$ level. These calculations indicate that any difference in the means between the samples is only due to the expected variation due to the sample size.

The scores of the subjects all fall within the range designated as high professional orientation by Corwin in his development of the instrument.\textsuperscript{39} Since all the subjects fall into the single classification, the first hypothesis, "Students who hold a broad concept of a professional teacher as defined by the Professional-Employee Role Concept Scale performed significantly better in student teaching as evaluated on the teacher evaluation form than the narrower employee oriented student," could not be examined for significance with this group of student teachers.

Since there was no measurable significant difference between the pre-test and post-test scores of the Professional-Employee Role Concept Scale, the second hypothesis, "The student teaching experience produces a significant change in the student's concept of the role of the teacher," was shown

\textsuperscript{39}Ronald G. Corwin, \textit{op. cit.}, page 182.
not valid. This same statistical result also invalidates the first portion of hypothesis three, "Student Teachers of science who are supervised with the aid of the new media show a larger change in the role concept scale than their counterparts who are supervised in the usual manner."

The student teaching evaluation form

The data from the final student teaching evaluation form was treated in the same manner as the data from the role concept scale. The data from the initial student teaching evaluation was subtracted from the respective items in the final evaluation form and likewise processed for the information necessary to make the test of significance. The data relative to the final evaluation form is presented in Table 4.

Table 4: The range of scores, means, and standard deviations for the subjects on the Final Student Teaching Evaluation Form

<table>
<thead>
<tr>
<th>Group</th>
<th>Range</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group</td>
<td>36-71</td>
<td>53.2</td>
<td>9.2</td>
</tr>
<tr>
<td>Experimental group</td>
<td>12-80</td>
<td>44.1</td>
<td>18.1</td>
</tr>
<tr>
<td>Total Population</td>
<td>12-80</td>
<td>48.3</td>
<td>15.2</td>
</tr>
</tbody>
</table>

From the Table it is evident that there is only a small difference between the control and experimental groups relative to the final evaluation. The difference between
the means for the final evaluation was subjected to a test for significance and the critical ratio was computed to be 1.88. For a group of this size the tables indicate that for the ratio to be significant at the \( P > 0.05 \) level, it has to be 2.43 or larger. Thus, there is no significant difference between the control and experimental group as measured by the differences in the final evaluation of the student teachers.

In treating the differences between the control group and the experimental groups as measured by the gains made in student teaching between the initial evaluation and the final evaluation, the results show that in some areas the students did make considerable progress during the student teaching experience. The summary of these data is presented in Table 5. On ten of the eighteen areas the critical ratio ranges from 3.42 to 7.56, which is well above the critical ratio of 2.43 for the 0.05 level and is well above the critical ratio of 2.71 for the 0.01 level. On the other eight items, the critical ratio ranges from 0.114 to 1.82 which is well below the levels set indicating significance.

The large difference between the levels set for significance and the critical ratios obtained indicate that there is a high degree of significant gain in the rating for those students supervised with the aid of the video tape recordings in the areas of ability to make adjustments, class control,
Table 5: The mean difference in evaluation areas between initial and final evaluation and the tabulation of the Critical Ratio.

<table>
<thead>
<tr>
<th>Evaluation Area</th>
<th>Mean Gain Control (Mc)</th>
<th>Mean Gain Experimental (Mn)</th>
<th>Mc - Mn</th>
<th>Standard Error</th>
<th>Critical Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to make Adjustments</td>
<td>6.11</td>
<td>19.1</td>
<td>13.0</td>
<td>2.59</td>
<td>4.99</td>
</tr>
<tr>
<td>Appearance</td>
<td>0.555</td>
<td>1.00</td>
<td>0.445</td>
<td>0.455</td>
<td>1.00</td>
</tr>
<tr>
<td>Class Control</td>
<td>5.39</td>
<td>18.2</td>
<td>12.8</td>
<td>2.02</td>
<td>6.35</td>
</tr>
<tr>
<td>Creativity</td>
<td>4.17</td>
<td>18.5</td>
<td>14.3</td>
<td>2.35</td>
<td>6.12</td>
</tr>
<tr>
<td>Emotional Maturity</td>
<td>0.722</td>
<td>0.333</td>
<td>0.389</td>
<td>0.260</td>
<td>1.49</td>
</tr>
<tr>
<td>English Usage</td>
<td>0.008</td>
<td>1.33</td>
<td>0.45</td>
<td>0.366</td>
<td>1.21</td>
</tr>
<tr>
<td>Influence on Students</td>
<td>6.22</td>
<td>16.6</td>
<td>10.4</td>
<td>2.58</td>
<td>4.03</td>
</tr>
<tr>
<td>Methods</td>
<td>4.11</td>
<td>19.2</td>
<td>15.1</td>
<td>2.13</td>
<td>7.11</td>
</tr>
<tr>
<td>Presentation</td>
<td>5.60</td>
<td>22.4</td>
<td>16.8</td>
<td>2.39</td>
<td>7.02</td>
</tr>
<tr>
<td>Professional Behavior</td>
<td>0.389</td>
<td>1.10</td>
<td>0.71</td>
<td>0.388</td>
<td>1.32</td>
</tr>
<tr>
<td>Individual Differences</td>
<td>3.83</td>
<td>19.9</td>
<td>16.1</td>
<td>2.32</td>
<td>6.90</td>
</tr>
<tr>
<td>Reliability</td>
<td>1.831</td>
<td>1.91</td>
<td>0.08</td>
<td>0.629</td>
<td>0.114</td>
</tr>
<tr>
<td>Social Skills</td>
<td>0.333</td>
<td>0.666</td>
<td>0.333</td>
<td>0.450</td>
<td>0.740</td>
</tr>
<tr>
<td>Subject Matter</td>
<td>2.77</td>
<td>10.0</td>
<td>7.2</td>
<td>2.11</td>
<td>3.42</td>
</tr>
<tr>
<td>Use of Available Resourses</td>
<td>4.55</td>
<td>16.6</td>
<td>12.1</td>
<td>1.59</td>
<td>7.56</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>5.22</td>
<td>20.3</td>
<td>15.1</td>
<td>2.02</td>
<td>7.48</td>
</tr>
<tr>
<td>Vidalty</td>
<td>1.17</td>
<td>2.38</td>
<td>1.21</td>
<td>1.20</td>
<td>1.00</td>
</tr>
<tr>
<td>Voice</td>
<td>1.17</td>
<td>1.62</td>
<td>0.56</td>
<td>1.14</td>
<td>0.482</td>
</tr>
</tbody>
</table>

N = 39  Critical Ratio of 2.43 or greater is significant at the 0.05 level; Critical Ratio of 2.71 or greater is significant at the 0.01 level.
classroom management, creativity, influence on students, methods, presentation, individual differences, and the use of available resources. The same large difference between the levels set and the critical ratios obtained in the other eight areas indicate that there is no significant difference between the experimental and control group gains in these areas due to the manner in which they were supervised.
CHAPTER V

INTERPRETATION OF THE FINDINGS AND IMPLICATIONS

Interpretation of the findings

In the previous chapter, it was noted that the findings from the role concept scores and the findings from the final evaluation form did not support the hypotheses as initially stated in the problem. Although the hypotheses were not supported, it was found that significant gains were made by the student teachers in some areas of teaching behavior as measured by the differences between the initial evaluation form and the final evaluation form. It was also noted in the study findings that participants who were supervised with the aid of the video recorder reacted enthusiastically relative to the value of this technique in the supervision of student teachers. Similarly, the supervisory personnel involved with the student teachers recognized the values of this equipment as an aid in the process of supervising student teachers.

Herein lie two conflicting sets of information. The subjective opinions of the students and the supervisors and the gains between the initial and final evaluations indicate that the utilization of this specialized equipment is a
valuable procedure in the development of a science teacher, whereas the information resulting from the final evaluation alone and the role concept scale indicated that the technique did not influence the student teaching experience significantly. It seems appropriate, therefore, to examine other possible influences on these data and attempt to ascertain whether one group of the findings outweighs the other in determining the value of using the video tape recordings in the supervision of student teachers.

Some of the major influences which might change the student teacher's perception of the role of the teacher are the school in which he taught, the faculty of that school (particularly the cooperating teacher), and the college supervisor responsible for his guidance and evaluation. It was noted in Chapter Three that the schools in which the students were placed were selected by the department after the administrative officer of the school concerned had recommended particular teachers to work with student teachers. The cooperating teachers who indicated a desire to work with a student teacher were selected by the science education staff for their professional character, their teaching ability, and their capability to work with a student during the laboratory experience. The supervisors were also highly professionally oriented persons. Since the cooperating teachers and the schools were selected for their ability to contribute
to the program of teacher education, it is not surprising that the students did not show an appreciable change in their professional orientation as they moved from the university classroom to a specific school system to work with a particular teacher under the supervision of a college supervisor. The student teacher was exposed only to a single frame of reference relative to the professional–employee orientation of the role of a teacher during the entire laboratory experience. Thus an instrument designed to differentiate between these orientations would not show an appreciable change in the scores obtained at the pre-test and post-test situations for this group of student teachers.

In all the studies cited that used an overall evaluation, as in this study, no significant differences were reported between the experimental and the control groups. This finding is possibly the result of either the lack of sensitivity of an overall rating to any single aspect of teaching behavior or the masking effect of the large number of characteristics considered by the supervisor in making the final, overall rating. When an examination of the internal aspects of the composite evaluation is conducted, a slight difference can be detected between the two groups. Because of the small sample size, this difference is of no great significance.

A comparison of the initial evaluation of the student's
ability with the final evaluation of his student teaching indicated a significant gain by the experimental over the control group. This result agrees with the findings of the Stanford group relative to the value of the "micro-teaching" technique in the pre-internship training experience.

The significances reported for the differences found between the initial and the final evaluations of the two groups are based on the subjective judgments of the six individual supervisors. Since these evaluations were based on the supervisor's experience as a classroom teacher and on his previous associations with student teachers, they will tend to reflect some of the supervisor's biases relative to student teaching behavior. Therefore, in the significant findings as reported in Chapter Four, supervisory bias is reflected. Examining the difference between the theoretical critical ratio for significance at the $P > 0.01$ level and the values computed for the ten significant areas, one finds in all cases but one a ratio of two to one or larger favoring significance. Although there is bias reflected in the findings, there is a likelihood that much of the difference reported is the result of the experimental procedure and not of the bias alone.

Another factor which influences the findings is the reaction of the student to the experimental procedure and to the study in general. The high professional character of the
of the student, as reflected by the Professional-Employee Role Concept Scale and the idealized offerings in the professional education sequence, would tend to induce a favorable reaction to the entire study. This factor was identified as the "Hawthorne Effect" in Chapter Four and is evidenced in the quotations reflecting the enthusiasm of the students involved with the experimental procedure. In an attempt to reduce the effect of this factor, this investigator informed all participants that they were involved in an experimental study. The "halo" or "Hawthorne Effect" could have been operative during the development and use of the experimental procedure favoring the significance of the findings and should be considered in the implications that this study has for teacher education. Since there were no significant differences found between the experimental and the control groups relative to the pre-test and post-test scores of the role concept scale, the "Hawthorne Effect," if operative, possibly operated on both groups equally and may not have significantly influenced the findings for this experimental procedure.

This investigator recognizes that a study of this nature conducted over a short period of time can be considered only a pilot study since it is of insufficient duration to examine thoroughly the influence of supervisory bias and the "Hawthorne Effect." Continued usage of the equipment and the
technique by the same supervisory group with annual evaluation of the results should give indication relative to the influence of supervisory bias. Introduction of the technique and the associated equipment into earlier laboratory experiences of the teacher education program would tend to reduce the "halo" effect caused by the usage of the equipment exclusively during student teaching. Extending the study or developing a parallel study over a period of years would also provide a large sample from which more valid conclusions could be drawn. Since there was a deliberate attempt to control the "halo" or "Hawthorne Effect", the influence of both supervisory bias and "Hawthorne Effect" may be minimal. The large critical ratios found when comparing the gains made in teaching skills suggest to this investigator that the findings are significant relative to the utilization of the experimental procedure in this study. Therefore, the use of the video tape recordings in the procedure outlined in this study did produce a significant difference in the student teacher's behavior in certain areas of the evaluation form, and the gains were measurable by the difference between an initial and a final evaluation of the student's ability as a classroom teacher. The ten areas of the evaluation form reported significant do agree substantially with the aspects of teaching behavior reported by the Stanford University Micro-Teaching Project. It appears that the student can be
trained in these aspects of teaching behavior during the short-term student teaching experience. The other eight areas of the evaluation form are identifiable traits or habit patterns of an individual and appeared unaffected in this study. In the statistical treatment of data, the sample size is a most important factor in determining the magnitude of a factor or ratio required for significance at a particular level chosen by the investigator. In this study the sample was small \((N=39)\) consisting of the entire science student teaching population for the academic year 1963-1964 at Albany. Continuation of the study for a number of years would have increased the sample size and might have revealed some significance in the other eight areas.

The utilization of the video tape recordings with the procedure outlined in this study enhanced the communication between the supervisor and the student through the development of a common frame of reference relative to the performance of the student teacher. This common frame of reference was readily recognized by both the student and the supervisor in the discussion and evaluation of the student's ability as a science teacher during the investigation. Any technique that improves the interpersonal communication between the student teacher and the supervisor-cooperating teacher combination is of value in the science teacher education program.
Implications of the findings

This small sample of science student teachers is representative of an academic area which trains its disciples to recognize and to accept changing ideas. Persons of this academic area tend to seek out innovations by which they may better progress in the investigation of nature. This tendency would influence the application of this study to the broad spectrum of student teachers indicating the necessity of designing a larger, more inclusive study which would test the procedure in the broader fields of student teaching. The findings for the student teachers of science suggest that the utilization of this equipment and technique with student teachers in other academic areas might show significance in the development of their ability as teachers. This study implies that it may be desirable to utilize this procedure in the general supervision of student teachers.

This study involved only the science teaching population of a single institution which as characteristics that are unique as well as those that are similar to other teacher education programs. The findings for this group may be applicable to other colleges and universities. In order to determine their general applicability, parallel studies would have to be planned and conducted to verify the findings.

The video tape recordings of student teaching performances could be used to study the judgments of college
supervisors in evaluating the students during the laboratory experience. Through examination of a series of common performances which are rated by supervisors, characteristics of the evaluation procedure might be determined. If these characteristics are determinable, then the video tape recordings could be used in a manner similar to the techniques used in this study to train prospective supervisors of student teachers without unnecessary disturbance of the normal classroom activity.

One factor which might tend to deter the widespread adoption of this technique is the high cost of the special equipment used in the study. In addition much of the equipment is bulky and difficult to transport from school to school. However, in recent years there have been technological advances leading to more compact, less expensive units. In order to evaluate the effect of the procedure in a wide variety of student teaching situations, it will be necessary to develop a reasonable sized package that is readily portable.

As this study was being conducted, the availability of the video tape recording equipment permitted the exploration of other aspects of science teacher education. In some of these areas a pilot tape was prepared to assess the feasibility of the idea for further study. The areas included the training of a student to observe a classroom situation, the training of supervisory personnel, the illustration of types
of teaching behavior to the methods class, and the training in special classroom techniques, i.e. presenting a demonstration or using the blackboard. By providing a common reference which would be available until erased, another area in which the apparatus might be valuable to the teacher education program is the examination and analysis of teaching behavior. The apparatus might be used to identify factors which constitute good classroom procedure and the reaction of pupils to the various teaching techniques. These areas are but a few in which the apparatus might be valuable to the teacher education program. The designing of studies to investigate these areas would provide information relative to the value of this media in the preparation of a teacher.
APPENDIX A

PROFESSIONAL-EMPLOYEE ROLE CONCEPT SCALE
THE OHIO STATE UNIVERSITY

PROFESSIONAL-EMPLOYEE ROLE CONCEPT SCALE

INSTRUCTIONS

You are being asked to respond to a list of situations regarding the role of the teacher. Indicate the degree to which you agree or disagree with the statements, by circling one of the following alternative answers, ranging from:

SA, A, U, D, and SD

Strongly Agree (SA) Indicates that you agree with the statement with almost no exceptions.

Agree (A) Indicates that you agree with the statement with some exceptions.

Undecided (U) Indicates that you could either "agree" or "disagree" with the statement with about an equal number of exceptions in either case.

Disagree (D) Indicates that you disagree with the statement with some exceptions.

Strongly Disagree (SD) Indicates that you disagree with the statement with almost no exceptions.

EXAMPLE: (Circle only one)

1. All Teachers should buy mink coats at least once a year. SA A U D SD

Note: There are no correct answers to this instrument.

Please answer all items with your best judgment.
1. Typically, the school administration is better qualified to judge what is better for education than the teacher is.  

2. Teachers should be obedient, respectful and loyal to the principal.  

3. In case of a dispute in the community over whether a controversial textbook or controversial speaker should be permitted in the school, the teacher should look primarily to the judgement of the administration for guidance.  

4. Personnel who openly criticize the administration should be encouraged to go elsewhere.  

5. Teachers should not be influenced by the opinions of those teachers whose thinking does not reflect the thinking of the administration.  

6. The only way a teacher can keep out of "hot water" is to follow the wishes of the top administration.  

7. What is best for the school is best for education.  

8. A good teacher should put the interests of his school above everything else.  

9. In case of doubt about whether a particular practice is better than another, the primary test should be what seems best for the overall reputation of the school.  

10. A good teacher should put the interests of his department above everything else.  

11. Pay should be in relation to teacher experience.  

(Circle only one)
12. Often, classroom experience simply gives a teacher the opportunity to practice his mistakes.

13. Teachers of the same subject throughout the system should follow the same kind of lesson plans.

14. Teachers should teach their course in such a way that a substitute can take over at a moment's notice without serious interruption.

15. The work of a course should be so planned that every child taking the same kind of course throughout the state will eventually cover the same material.

16. A good teacher should be able to efficiently teach the children what they need to know in the limited time available.

17. A teacher should be required to be completely familiar with the written descriptions of the rules, procedures, manuals, and other standard operating procedures necessary for running the classroom.

18. The school should have a manual of rules and regulations to be followed.

19. Rules stating when the teachers should arrive and depart from the building should be strictly enforced.

20. To prevent confusion and friction among the staff, there should be a rule covering almost every problem that might come up at the school.

21. There should be definite rules specifying the topics that are not appropriate for discussion in a classroom.
22. When a controversy arises about interpretation of school rules, a teacher should not "stick his neck out" by taking a definite position.

23. Teachers should take into account the opinions of their community in guiding what they say in class and in their choice of teaching materials.

24. A teacher should not publicly advocate a position on the place of religion in the school which differs greatly from the majority opinion of the community.

25. A good teacher is one who conforms, in general, to accepted standards in the community.

26. The criterion of a good school is one that serves the needs of the local community.

27. A teacher should not attempt to discuss any controversial issues (such as abolishing the House UnAmerican Activities Committee) which may jeopardize the school's public relations.

28. Local control over schools by school boards is the most fundamental form of democracy in public education.

29. It should be permissible for the teacher to violate a rule if he/she is sure that the best interests of the students will be served in doing so.

30. A good teacher should not do anything that he believes may jeopardize the interests of his students regardless of who tells him or what the rules state.
31. Principals should reward teachers who spend extra time talking to students and helping them with their problems.

32. Teachers should try to live up to what they think are the standards of their profession even if the administration or the community does not seem to respect them.

33. One primary criterion of a good school should be the degree of respect that it commands from other teachers around the state.

34. A teacher should try to put her/his standards and ideals of good teaching into practice even if the rules or procedures of the school prohibit it.

35. Teachers should subscribe to and diligently read the standard professional journals.

36. A teacher should be an active member of at least one professional teaching association, and attend most conferences and meetings of the association.

37. A teacher should consistently practice his/her ideas of the best educational practices even though the administration prefers other views.

38. A teacher's skill should be based primarily on his acquaintance with his subject matter.

39. Teachers should be evaluated primarily on the basis of their knowledge of the subject that is to be taught, and their ability to communicate it.

40. Schools should hire no one to teach unless he holds at least a 4 year bachelors degree.
41. In view of the teacher shortage, it should be permissible to hire teachers trained at non-accredited colleges.

42. A teacher should be able to make his own decisions about problems that come up in the classroom.

43. Small matters should not have to be referred to someone higher up for final answer.

44. The ultimate authority over the major educational decisions should be exercised by professional teachers.
APPENDIX B

SAMPLE CASE HISTORY

94
SAMPLE CASE HISTORY

(The following materials are from the case history of one of the student teachers involved in the study. The student's name has been omitted to preserve his anonymity.)

SECTION I - Information from the personnel records of the university and transcript from The Registrar.
# Application for Admission to Undergraduate Study

**State University of New York**

**OFFICIAL RECEIPT**

**Application for Admission to Undergraduate Study**

**At a State University College**

---

**Directions to the Applicant**

1. Print or type the information requested below, follow instructions in the booklet "How to Apply for Admission".
2. A $5.00 non-refundable application fee must accompany this application. Make check or money order payable to State University of New York.
3. Enclose the form, the $5.00 application fee and all the yellow cards in the yellow envelope and mail to State University of New York, 8 Thurlow Terrace, Albany, New York.

---

**Form:** A-1

**State University of New York**

**Official Receipt**

---

**State University of New York, 8 Thurlow Terrace, Albany, New York**

---

**Name:**

**Mailing Address:**

**Parent, Guardian, or Spouse Address:**

**City:**

**State:**

**Home Address:**

**Date of Birth:**

**SEX:**

---

**Name of College to Which You Are Applying:**

**State:**

**Name of College to Which You Are Applying:**

**Date You Expect to Enter This College:**

---

**Have You Previously Applied to the College for Which You Are Now Applying?**

**If You Have Ever Taken the State University Admission Examination, Complete the Following:**

**I Took the State University Admission Examination at:**

**Exam Center No.:**

**Date:**

---

**High School of Commerce:**

**Address:**

**City:**

**State:**

---

**High School, From Which You Were Graduated:**

**Name:**

**City, Town or Village:**

**Date of Graduation:**

---

**List all Post High School Institutions Previously Attended:**

---

**Do You Intend to Apply for Transfer of Any of These Credits?**

**Have You Served in the Armed Forces?**

**Date of Discharge:**

**If You Will Receive Veteran Benefits, Check One:**

---

**Signature of Applicant:**

---

**Date:**

---

**Refer to Instruction Booklet**

"How to Apply for Admission"
PERSONAL DATA

Date: 4/5/60

1. Name ___________________________ ___________________________ ___________________________
   (LAST NAME)  (FIRST NAME)  (MIDDLE NAME)

2. Home address ___________________________ ___________________________ ___________________________
   STREET AND NUMBER  CITY OR VILLAGE  STATE

3. Anticipated Albany residence ___________________________ ___________________________
   (WITH OWN FAMILY, DORMITORY, ROOMING HOUSE, OTHER)

4. Birth date: ___________________________ Birthplace ___________________________ ___________________________
   (CITY OR VILLAGE  STATE)

5. Are you married? ___________________________
   Husband (or wife's occupation) ___________________________
   Number of children (if any) ___________________________

6. List below all employment you have had:

   Name of Company  Kind of Work  Dates
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

7. Father's name ___________________________ Mother's maiden name ___________________________
   If deceased, state year ___________________________ If deceased, state year ___________________________
   Occupation ___________________________ Occupation ___________________________
   Employer ___________________________ Employer ___________________________
   High school graduate? Yes No
   College attended ___________________________ College attended ___________________________

8. Guardian (if other than No. 7) ___________________________ Address ___________________________

9. No. of brothers ___________________________ No. younger ___________________________ No. of sisters ___________________________ No. younger ___________________________


11. Relatives who have attended NYSCT, Albany Name ___________________________
   Relationship to you ___________________________ Approximate date ___________________________

12. Grade in which you began school ___________________________ At what age? ___________________________

13. Grade or grades skipped ___________________________ Grade or grades repeated ___________________________

14. High school subjects liked most ________ ________ ________
   (1) ____________ (2) ____________ (3) ____________
   High school subjects liked least ________ ________ ________
   (1) ____________ (2) ____________ (3) ____________

15. Name high school subjects failed ___________________________

16. Name and address of person most influential in encouraging you to go to college ___________________________
   __________________________________________________________

17. Do your parents sympathize with your desire for a college education? Yes No

18. Do you anticipate any difficulties in completing your college education? Yes No
   If so, what? ___________________________

19. Do you enjoy the kinds of work done:
   with a group of people? Yes No
   with one or two others? Yes No
   by yourself? Yes No

20. At what age did you first become interested in teaching? ___________________________
21. Underline any of the following words which most nearly describe your general make-up. Aggressive, bashful, calm, cheerful, day-dreamer, dependable, easily exhausted, energetic, independent, industrious, nervous, persevering, pessimistic, prompt, quick-tempered, reserved, self-confident, subject to headaches, submissive. Add any words needed to describe your chief characteristics.

22. Name in order of preference the three vocations which appeal to you most:

(1) ____________ (2) ____________ (3) ____________

23. What teaching experience have you had?

24. In what subjects do you think you may major and minor?

25. Describe briefly any connections which you have had with the following:

a. School publications
   - Editor-in-Chief of Yearbook ("Blackboard")
   - Editor of School Paper
   - Secretary of Debate Club

b. Musical or dramatic organizations
   - Band, Choir, Drama Club

26. Do you play any musical instrument? Yes __________ No __________

27. What magazines do you read? Popular Mechanics, Life, Readers Digest

28. How many books, other than those suggested in connection with school courses, have you read during the last six months? Name the principal ones: A. The Grape of Wrath __________ B. __________

29. How do you spend your last three summer vacations?

19 __________ 19 __________ 19 __________

30. Underline your leisure time interests: organized athletics, horseback riding, golf, winter sports, dancing, movies, bridge, newspaper work, music (chorus, instrument), party planning, decorating, serving, hostess, Girl Scouts, Boy Scouts, reading books, reading magazines, others.

31. Have you had any vocational interest-testing and advisement? Yes __________ No __________ If so, where and from whom?

32. Do you feel you need help in your vocational plans? Yes __________ No __________

33. Indicate in the spaces below the amount of money you expect to get for the next complete college year from each source: (towards an estimated total of $1,100)

- From home __________
- From vacation earnings __________
- From scholarships or loans (State source and duration) __________
- From savings __________
- From part-time earnings __________
- From other sources __________

34. Estimate the amounts to be earned for other years and state how you hope to earn them:

<table>
<thead>
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<th>Year</th>
<th>Amount</th>
<th>Technique</th>
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</thead>
<tbody>
<tr>
<td>Sophomore</td>
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<td>Hope to earn $300 by working</td>
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<tr>
<td>Junior</td>
<td>__________</td>
<td>__________</td>
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<tr>
<td>Senior</td>
<td>__________</td>
<td>__________</td>
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<td></td>
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<tr>
<td>V - SCORE</td>
<td>3/7</td>
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<tr>
<td>Q - SCORE</td>
<td>3/4</td>
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<td>Vocabulary</td>
<td>55</td>
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<td>Level</td>
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<td>MECHANICS OF EXPRESSION</td>
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<td></td>
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<td>I. Terms &amp; Concepts</td>
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<td></td>
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<tr>
<td>II. Comp. &amp; Inter.</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

REVIEW AND KEEP - See Profiles

FRESHMAN ADVISER

FRATERNITY OR SORORITY

COLLEGE ADDRESS:

ACTIVITIES:
**PROFILE SHEET**  
*FOR MEN*  

For Form III of the  
Kuder Preference Record  
(Profiles for Women on reverse side)

**DIRECTIONS**

Follow the directions below carefully. As soon as you have finished a step, place a check in the box at the right to show that you have completed it; then go on to the next one.

1. Fold the answer sheet on the dotted line so that the spaces for indicating scores are facing you.

2. Find the total raw score for each of the nine areas by adding score *a*, which is found on one side of the answer sheet, and score *b*, on the other side. Enter these scores in the spaces marked *c* on the line labeled Total Scores.

3. Check each total score again to be sure you have not made a mistake.

4. Enter the nine total scores in the space provided at the top of the chart on this page. If you are a man, use the chart at the right; if you are a woman, use the chart on the other side of this sheet.

5. Find the number in column 1 which is the same as the score you have entered at the top of the column. Draw a line through this number from one side of the column to the other. Do the same thing for each of the other columns. If your score is larger than any number in a column, draw your line across the top of the column; if your score is smaller than any number in a column, draw the line across the bottom of the column.

6. With your pencil, blacken the entire space between the lines you have drawn in each column and the bottom of the chart.

The result is your "profile" on this test. It should be remembered that the scores are not measures of ability, but that they represent the degree of your preference for activities in the various fields. Your adviser can tell you how to interpret the profile.

*Published by*  
SCIENCE RESEARCH ASSOCIATES  
57 West 43rd Avenue, Chicago 10, Illinois

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STATE UNIVERSITY OF NEW YORK
COLLEGE OF EDUCATION
ALBANY

ADMISSIONS OFFICE

PERSONAL INTERVIEW FORK

DATE:

1. NAME OF APPLICANT:

2. HOUSING: ____________________________ (CHECK)
   LIVE AT HOME
   DORMITORY
   APARTMENT
   PRIVATE ROOM
   (OTHER) ____________________________

3. FINANCIAL RESPONSIBILITY: ____________________________
   MONEY FROM HOME
   SCHOLARSHIP
   LOANS
   SAVINGS
   WORK
   HOURS PER WEEK
   DOLLARS PER WEEK
   OVERALL ESTIMATE OF FINANCIAL STATUS:
   ADEQUATE
   INADEQUATE

4. ASSETS (OUTSTANDING) _________
   LIABILITIES (SPEECH, HEARING, ETC.) _________

5. RATING ON PERSONAL CHARACTERISTICS: (CIRCLE) 1/2/3/4/5
   GOOD
   POOR

6. RATING AS A POTENTIAL STUDENT, ACADEMIC: (CIRCLE) A B C D E
   ACCEPTABLE
   QUESTIONABLE
   UNSATISFACTORY

7. RATING AS A POTENTIAL TEACHER TRAINING CANDIDATE: ACCEPTABLE
   QUESTIONABLE
   UNSATISFACTORY

8. HIGH SCHOOL COURSE DEFICIENCIES RELATED TO MAJOR: (LIST)

9. TENTATIVE SUGGESTED PROGRAM FOR FIRST SEMESTER:
   INDICATE CLASS: F T
   DEGREE: (CIRCLE) A B B S B U
   MAJOR: L
   MINOR: L
   HOURS: 3 3 3 3 3

10. If transfer, hours credit allowed _______ hrs. (tentative)

INTERVIEWER: ____________________________
**academic preparation**

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<th>36</th>
<th>English</th>
<th>Units</th>
<th>4</th>
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<td>37-38</td>
<td>Social Studies</td>
<td>Units</td>
<td>4</td>
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<tr>
<td>39</td>
<td>Elementary Algebra (1)</td>
<td>Units</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>Intermediate Algebra (1 or .5)</td>
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<td>41</td>
<td>Advanced Algebra (.5)</td>
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<tr>
<td>42</td>
<td>Plane Geometry (1)</td>
<td>Units</td>
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<tr>
<td>43</td>
<td>Solid Geometry (.5)</td>
<td>Units</td>
<td>.5</td>
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<tr>
<td>44</td>
<td>Trigonometry (.5)</td>
<td>Units</td>
<td>.5</td>
</tr>
<tr>
<td>45-46</td>
<td>Other Mathematics</td>
<td>Units</td>
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<tr>
<td>47-48</td>
<td>Total Mathematics</td>
<td>Units</td>
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**ACTIVITIES**

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<tr>
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<th>Yearbook Editor or Business Manager</th>
<th>Yes (2) No (0)</th>
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<tr>
<td>18</td>
<td>Editor of Newspaper</td>
<td>Yes (2) No (0)</td>
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<tr>
<td>19</td>
<td>Class President</td>
<td>Yes (2) No (0)</td>
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<tr>
<td>20</td>
<td>Student Council</td>
<td>Yes (2) No (0)</td>
</tr>
<tr>
<td>21</td>
<td>Debate</td>
<td>Yes (2) No (0)</td>
</tr>
<tr>
<td>22</td>
<td>Senior Play</td>
<td>Yes (2) No (0)</td>
</tr>
<tr>
<td>23</td>
<td>Orchestra</td>
<td>Yes (2) No (0)</td>
</tr>
<tr>
<td>24</td>
<td>Band</td>
<td>Yes (2) No (0)</td>
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<tr>
<td>25</td>
<td>Chorus</td>
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**ATHLETICS** (Men Only)

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</tr>
<tr>
<td>29</td>
<td>Varsity Soccer</td>
<td>Yes (2) No (0)</td>
</tr>
<tr>
<td>30</td>
<td>Varsity Wrestling</td>
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**degree program**

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<tr>
<th>31-32</th>
<th>AB (11) BS (12)</th>
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<td>Major: Br (01) BuL SS (14)</td>
<td>La (07)</td>
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<tr>
<td></td>
<td>Hu (03) Ph (11)</td>
<td>Fr (05)</td>
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<td></td>
<td>Cs (02) Ma (10)</td>
<td>Ge (09)</td>
</tr>
<tr>
<td></td>
<td>En (04) Li(S) (23)</td>
<td>Sp (18)</td>
</tr>
<tr>
<td></td>
<td>Sc (13) Li(P) (24)</td>
<td></td>
</tr>
</tbody>
</table>
DIRECTIONS TO THE APPLICANT

1. PRINT OR TYPE ONLY THE INFORMATION REQUESTED ON THIS PAGE.
2. GIVE THIS FORM TO YOUR PRINCIPAL. ASK HIM TO COMPLETE PAGES 2, 3, AND 4.
3. ASK YOUR PRINCIPAL TO MAIL THE COMPLETED FORM TO THE DIRECTOR OF ADMISSIONS AT THE COLLEGE INDICATED BY YOU BELOW.

NAME

LAST

FIRST

MIDDLE

DATE OF BIRTH MONTH DAY YEAR SEX

HOME ADDRESS:

NO. AND STREET

CITY OR VILLAGE

ZONE

COUNTY

STATE

NAME OF COLLEGE FOR WHICH YOU ARE APPLYING

CURRICULUM TO WHICH YOU SEEK ADMISSION:

LIST ALL COLLEGES AND UNIVERSITIES PREVIOUSLY ATTENDED

NAME

CITY, TOWN OR VILLAGE

DATES

DO YOU INTEND TO APPLY FOR TRANSFER OF ANY OF THESE CREDITS? ( ) YES ( ) NO

GIVE THE NAMES AND ADDRESSES OF TWO REFERENCES, EITHER MEMBERS OF THE FACULTY OF THE HIGH SCHOOL YOU LAST ATTENDED WHO KNOW YOU PERSONALLY OR PERSONS BY WHOM YOU HAVE BEEN EMPLOYED:

GIVE THE NAMES AND ADDRESSES OF TWO REFERENCES, EITHER MEMBERS OF THE FACULTY OF THE HIGH SCHOOL YOU LAST ATTENDED WHO KNOW YOU PERSONALLY OR PERSONS BY WHOM YOU HAVE BEEN EMPLOYED:

SIGNATURE OF APPLICANT

DATE OF SIGNATURE

APPLICANT: IN THE BOX BELOW, ENTER THE NAME OF THE COLLEGE TO WHICH YOU WANT THIS FORM SENT.

APPLICANT:

DIRECTOR OF ADMISSIONS

STATE UNIVERSITY OF NEW YORK

College for Teachers

155 Western Avenue

Albany, New York

Page 1
<table>
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<tr>
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</tr>
</tbody>
</table>

College Reconference Mark: 7.5

Total Courses: 40

No. in slate: 500

Average: 89.6
PERSONAL DATA

NAME

ADDRESS

TEST DATA

SEX

Date of Birth

PERSONALITY DATA

The following traits are description of behavior. Whenever possible the judgment of the student's current teacher is used. The line represents the distribution of the trait from maximum to minimum.

Ability to Learn

- How pupil handles new information
  - Superior
  - Learns with ease
  - Learns at a moderate rate

Initiative

- Very original
  - Does new tasks with little being told
  - Does new tasks on his own

Constructive thinking

- Very original
  - Does new tasks with little being told
  - Does new tasks on his own

Cooperation

- Ability to work with others
  - Superior cooperation
  - Helpful
  - Underestimated

Leadership

- Ability to direct and gain cooperation
  - Gets most
  - Secures limited cooperation
  - Converts to activity

Responsibility

- How pupil fulfills obligations
  - Active beyond expectancy
  - Persistently active
  - Retards

Stability

- Ability to work under pressure
  - Insufficiently steady
  - Well-balanced in all situations
  - Well-balanced in most situations

Special Abilities and Interests

STAMPS, CLOTHING

Extra-Curricular Activities

- ART: TRACK TEAM MEMBERS

Additional Information (Work Experience, Significant Achievements, etc.)

STICKBAG 12 YEARS

Probability of success in college: excellent good fair poor

COMMENTS:

Date: 1/1/59

Note: Handwritten remarks and signatures are present on the document.
July 1963

To: Student Number:

A University takes real pride in the success of its students.

It is my extreme pleasure to let you know that your name is being placed on the Dean's List as a result of your excellent record for the past semester.

I am very pleased to note that your cumulative record is also of honor grade.

President Collins and members of the faculty join me in extending congratulations. We sincerely trust that you will continue to maintain this fine record upon your return in September. Best wishes for a pleasant summer.

Cordially yours,

Jack M. Deering
Academic Dean

Dean's List:

2nd Semester '60-'61
1st Semester '61-'62
2nd Semester '61-'62
2nd Semester '62-'63
1st Semester '63-'64
STATE UNIVERSITY COLLEGE OF EDUCATION
ALBANY, N. Y.

Student Personnel Office
Confidential Comments From Parents

To be filled out and returned immediately to the Student Personnel Office

STUDENT'S NAME ____________________________

Special interests, advantages, achievements, difficulties:

Attitudes toward academic work, toward people, toward responsibilities:

As you see it, what should college do for him?

(For further comment or greater detail, please use back of this sheet)

Signature ____________________________

Check to indicate by whom this report is made:

Mother ( ), Father (x), Parents jointly ( ), Guardian ( )

10/60/800
STATE UNIVERSITY OF NEW YORK  
COLLEGE OF EDUCATION  
ALBANY  

Student Personnel Office  
Residence Hall Evaluation  

NAME ________________________ Class 1964  
Residence Waterbury ________________________ Date Feb. '61  

PERSONAL CHARACTERISTICS  
1. Emotional Balance and Maturity (Independence: reaction to criticism)  
   X  
2. Personal Habits (Grooming, neatness of room)  
   X  
3. General Health  
   X  
4. Use of time (Study habits, leisure activities)  
   X  

SOCIAL BEHAVIOR  
1. Friendliness  
   X  
2. Manners  
   X  
3. Oral Expression  
   X  
4. Ability to lead others  
   X  
5. Ability to cooperate  
   X  
6. Sense of responsibility  
   X  

Summary Statement regarding the above or additional characteristics:

Ken possesses the self-confidence and pleasing personality to become an excellent teacher. He is friendly and seems genuinely interested in other people. He is at times a little conceited, but this he will eventually outgrow.
August 3, 1961

Dear,

Upon the recommendation of the officers of your College, the RCA Education Committee is awarding you the RCA Science Teaching Scholarship at the State University of New York, College of Education, for the academic year 1961-62. This appointment carries a stipend of $250, and payment of this amount will be made to the College in September, 1961. Your award covers the academic year, i.e., the period from September 1961 to June 1962.

As you go forward with your plans and studies, I want you to know that this Corporation, through its officers and the RCA Education Committee, is keenly interested in your progress and development. The Scholarship which has been awarded to you was set up particularly to help those students who intend to follow a teaching career. We are gratified to learn that you plan to teach Biology on graduation, and if our aid has served to make this possible, feel that our contribution has been well worth-while.

I have visited State University of New York and have had the opportunity to see your campus and meet a few of the people on the administrative staff and faculty of the University. You are fortunate in your academic environment and opportunity to profit from the faculty associations at State University of New York.

Should I visit Albany again while you hold our Scholarship, I certainly shall inform you in advance so that we can arrange to get together.

Meanwhile, congratulations and good wishes.

Sincerely yours,

Irving Wolff

cc: Dr. Evan R. Collins, President
    Dean Oscar E. Lanford
1963

NOMINATION BLANK

Please return this blank to Arthur Colling by 3:00
Monday, June 22.

The Biology department nominates 1964
(CLASS) for the Donald Clark Scholarship. This student is our
2nd [underline] choice.

Eagerness,
initiative,
interest,
ambition are very good.

Paul C. Lamon
(Signed)
**UNDERGRADUATE RECORD**

**STUDENT NAME:**

**DATE OF BIRTH:**

**SCHOOL OR PROGRAM:**

**MAJOR:**

**SECOND FIELD:**

**DEGREE PROGRAM:**

**PREPARED AT:**

**BASIS OF ADM:**

**DATE GRADUATED:**

**FIRST REGISTRATION:**

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**STATE UNIVERSITY OF NEW YORK AT ALBANY**

135 Western Avenue
Albany 3, New York

**Definition of Grades:**

A = Superior  
B = Good  
C = Fair  
D = Passing (except in major, minor)  
E = Failing  
I = Incomplete  
W = Withdrawn  
N = Audit, non-credit  
S = Satisfactory  
U = Unsatisfactory  
Z = Administrative Penalty Grade (Same as E)

**Quality Points:**

A = 4  
B = 3  
C = 2  
D = 1  

One Credit represents one hr. of lecture or recitation or at least two hrs. of lab. work for one semester (approx. 17 wks.).

**Session:**

S = Summer Session  
X = Extension  
R = (or blank)  
On Campus

Unless statement to the contrary is shown, student is entitled to honorable dismissal.

Valid for official transcript purposes with the signature of the registrar and impression of the seal of the university.

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Valid for official transcript purposes with the signature of the registrar and impression of the seal of the university.

Registrar
SECTION II - Comprehensive Secondary School Service

Subject Matter Test

#1 Overall % - 52
  Biology % - 73
  Chemistry % - 42
  Physics % - 59
  Earth Science % - 34

#2 Biology qualifying - 94 (minimum 85 to qualify)

Watson-Glaser Critical Thinking Appraisal

Overall score - 69 percentile 45
Inference - 11
Recognition of Assumptions - 10
Deduction - 18
Interpretation - 20
Evaluation of Arguments - 10

The Professional-Employee Role Concept

Scale

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SECTION III - Supervisory visits were made on the following dates:


SECTION IV - The case history of this student also contains 25 pages of personal diary relative to his experience during student teaching, and 10 pages of supervisory notes relative to his progress in student teaching.
APPENDIX C

COVER LETTER TO COOPERATING TEACHERS
A research study in examining the influence of the use of video recordings as a supervisory aid in the role concept of teaching held by the student teacher, is being conducted this year by Professor G. William Reynolds of State University of New York at Albany, with the cooperation of the staff in Science Education. This project provides for experimental and control groups in which the effect on the role concept during the student teaching experiences will be discussed and related to the relative success of the student during the laboratory experience. This study, which is being conducted only with the student teachers in science during the academic year 1963-64, is a pilot study to determine how teacher educators may make more efficient use of the new media in the preparation of teachers.

As members of a profession which needs larger numbers of more effective teachers, we should be interested in methods and techniques which will provide our profession with well-trained personnel. This study is one of many in relating the use of television to the process of teacher education. We hope that you as a partner in this more important phase of teacher education, will join us in making this study a success.

As a cooperating teacher in this University science education program we are sending you a role concept scale which will take about thirty minutes to complete. An addressed envelope is enclosed for your convenience in returning it. Results of this study will be published and made available to the teaching profession at large. If you wish a copy, please so indicate on your completed scale. Questions concerning the study should be referred to Mr. G. William Reynolds, who may be reached at this University address or by telephone at HC 3-1254, extension 21.

We appreciate your cooperation in this endeavor.

Sincerely yours,

ROBERT N. ANDERSEN
Coordinator of Off-Campus Student Teaching
BIBLIOGRAPHY

BOOKS


**ARTICLES AND PERIODICALS**


BOOKLETS


UNPUBLISHED MATERIALS


Interview with Professor Henry A. Bern, January 6, 1966.

Interviews with Professor L. O. Andrews, August 1964.

File Reports of Unsuccessful Student Teachers in Science, Science Education Department, Milne School, State University of New York at Albany, 1950 through 1965.