

THE USE OF VIDEO TAPE RECORDINGS FOR TEACHER EDUCATION

by

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INTRODUCTION

With the advent of the portable video tape recorder, it has become feasible for educational institutions to purchase recorders for use in the classroom. Colleges for teacher education have found valuable uses for the video tape recorder.

One of these uses is the ability to bring to the college classroom examples of student behavior and teaching techniques from the public school. This permits the college instructor to show examples of what he is attempting to convey to the class instead of relying on his verbal description. The other major use of the video tape recorder is the recording of student teachers as they teach in the classroom. With this recording, the student teacher and his college supervisor are able to view his performance together and discuss more precisely what his good and bad techniques are.

STATEMENT OF THE PROBLEM

The purpose of this report was: 1) to determine the equipment necessary to video tape record a school situation and the equipment necessary to play the recording back to the college class; 2) to determine the methods in which these recordings can be used in teacher education; and 3) to determine from research that has been done, how effective these methods are. This information was obtained from the libraries at Kansas State University and other colleges and universities.

DEFINITIONS OF TERMS USED

For the purpose of this study the following terms are defined. Although the terms may have other meanings, they are defined below for this study only.

Electronic viewfinder. A small television receiver built into a television camera.¹

Direct observation. The in-person viewing of a public school classroom by a student for the purpose of completing the requirements for an education subject.

Kinescope recording. A film recording of a television program in which the film camera records the images directly from the face of the television tube.²

Monitor. A high-definition television viewer.³

Remote control. Mechanical and electrical equipment that allows the control, operation and adjustment of television cameras located some distance away from the cameras.⁴

¹Edwin P. Adkins (ed.), Television in Teacher Education (Washington, D.C.: The American Association of Colleges for Teacher Education, 1960), p. 64.

²Ibid., p. 65.

³Ibid.

⁴Ibid., p. 66.

Student teaching. The period of guided teaching during which the student takes increasing responsibility for the work with a given group of learners over a period of consecutive weeks.¹

Switcher. A set of pushbuttons mounted on a panel to allow the selection of the television image to be fed to the video tape recorder.²

University supervisor of student teaching. The university representative who is responsible for supervising a student teacher or a group or a group of student teachers.³

Video tape recorder. An electronic instrument which makes possible the electronic recording and immediate playback of television visual images and sound on magnetic tape.⁴

Zoom lens. A camera lens constructed with some of the parts made movable so that angle of view is continuously adjustable and in focus on an object or scene.⁵

¹ The Supervising Teacher, 38th Yearbook, (Iowa State Teachers College, Cedar Falls, Iowa; Association for Student Teaching, 1958), Preface X-XI.

² Adkins, op. cit., p. 63.

³ The Supervising Teacher, op. cit.

⁴ Warren L. Wade, Television Tape Recording Systems: A Guide for School Administrators (Ampex Corporation, 1964), p. 1.

⁵ Adkins, op. cit., p. 67.

VIDEO TAPE RECORDING IN THE CLASSROOM

Video tape recordings can be used in teacher education as a means of observation of classroom procedures, teaching techniques, and child growth and development. To obtain video tape recordings of a high quality which can be used for this purpose presents a problem. To be authentic these recordings will have to be made of actual classroom situations.

Planning should be the key word in carrying out the recording of a lesson in a classroom. This should be done by a college coordinator appointed to be in charge of the planning. His responsibilities would be to act as a liaison between the college instructors and the personnel of the cooperating school system, to promote understanding, and to be a college instructor to aid the students in developing observational skills.¹

The main problem of the coordinator is one of determining what information will be needed, how it should be collected and the manner in which it could best be organized. Prior to video tape recording, the coordinator should hold conferences with the school personnel concerning:

1. Types of lessons and activities needed by the college instructors.
2. Dates these lessons and activities will be taking place at the public school.

¹William R. Rogers, Television Utilization in the Observation Program for Teacher Education (San Jose, California: San Jose State College, 1962), p. 17.

3. Permission to use cumulative records.
4. Personal and confidential information about the pupils which is not a matter of record.
5. Permission to take pictures of pupils and their homes.
6. The school district's policies and procedures.¹

The college instructor will need the use of the cumulative records and other confidential information for use in case studies and in studies of child growth and development. With this information he can help the student observers develop skill in observing children as individuals. The information about each pupil which would be helpful includes:

1. Age.
2. Place of birth.
3. Home address.
4. Family background.
5. Mental maturity score.
6. Achievement test scores.
7. Health.
8. Grade placement including accelerations and retentions.²

Visitations to the schools should be made to study the layout of the buildings and the classrooms in which recording will be done. The power supply, lighting, and availability of electrical outlets should

¹Ibid., p. 18.

²Ibid.

be checked. The van which hauls the equipment will need a parking space as close to the school building as possible. The distance from the van to the nearest electrical outlet and to the classroom should also be noted.¹

Prior to taping a lesson, the college coordinator and the classroom teacher should meet to discuss the objectives of the lesson and the means of achieving them. A tentative lesson plan should be prepared noting the material to be used, room arrangement, and timing of the lesson. The final lesson plan will be drawn up after a meeting with the television staff and will enable the staff to anticipate the pictures to be taken.²

In conferences between the coordinator, teacher, and television staff the following items should be discussed:

1. Treatment of materials such as feltboards, chalkboards and other audio-visual aids.
2. Seating charts for each activity.
3. Room arrangement and teaching techniques which will produce the maximum sound quality and volume of the children's voices.
4. Unusual problems which might occur that might require special interpretation during playback.
5. Children who have been selected for study in detail because of special aptitudes or problems.

¹Sister Mary Michele, "Teacher Training y Video Tape," Catholic School Journal, 65:32, May, 1965.

²Margarete R. Altenhein, "CCTV or Classroom Observation: What Shall It Be?" Peabody Journal of Education, 40:165, March 1963.

6. Personal qualities necessary for best recording reception including speed of speech, voice quality and mannerisms.
7. Technical considerations of color and style of dress and general movement about the room.¹

Some of the above items can be demonstrated by the college coordinator. He can explain and show certain techniques which improve the quality of the television picture and sound. The best arrangement of groups of pupils working together can be shown. The need for large lettering on charts and bulletin boards should be demonstrated. A graphic artist can help in the area of visual aids.²

The teachers should be encouraged to direct a series of questions to one part of the room. This allows the camera to be focused and to remain there for an appropriate amount of time.

Good rapport must be established to get the cooperation of the public school personnel. This might be done by offering the services of the video tape recorder as part of an in-service education program. The principals and teachers can be invited to watch their own performance played back on a monitor. They can also view their colleagues. In this way, they can improve their own performance.³

Finally, the television coordinator and his staff should have considerable practice to function as a team and to achieve speed and accuracy. This will enable them to record the classroom events which

¹ Rogers, op. cit., p. 19.

² Ibid.

³ Ibid.

they want. Otherwise some important situations may be over before the cameras are focused on them. It should be possible for the staff to set up the equipment during the intermission between classes. To do this terminology has to be explicit and the limitations of the cameras and sound equipment has to be respected. According to Rogers, experience indicated that one to two hours of practice with equipment operating in the classroom for one or two days sufficed to acclimate the teachers and pupils to the equipment.¹

VIDEO TAPE RECORDINGS FOR OBSERVATION

Observation allows the education major to observe the teacher, pupils and school in action in a natural setting. Until recently this had to be done by sending the student to the classroom in the public school. Video tape recordings can eliminate some of the many direct observations that are necessary in a strong teacher education program. The video tape recorder can do this by recording the school activities which can then be shown to the college class.²

Problems of direct observation. With the increasing college enrollments, direct classroom observations were creating problems by placing an excessive burden on the public schools within practical traveling distance to provide sufficient classrooms for student observers.

¹Ibid.

²Donald E. Bumpass, "TV Helps to Teach Teaching," Pennsylvania School Journal, 112:318, March, 1964.

At the same time it was difficult to obtain sufficient situations where observers could see qualified teachers at work.¹

Under direct observation methods the student observer received an isolated experience. There was no experience common to all students and to the college instructor around which profitable class discussion could later take place. Observations were limited to specified geographical area where insufficient variations of techniques, curricula and schedules might be observed. Student observers often failed to relate classroom incidents and teacher techniques to principles in the psychology of learning in a meaningful way.²

Advantages of video tape. The following statements are logical comparisons showing the advantages of video tape recordings over direct observations. When using direct observation the college instructor must limit his geographic area because the travel time must be minimized. By using video tape he is able to go out and find those teachers whose teaching techniques meet his teaching objectives and record them. Using direct observation the instructor often finds it difficult to locate what he wants his class to see. The video tape method would eliminate this problem because the college of education can have a library of tapes available with many types of classroom situations.³

¹Rogers, op. cit., p. 1.

²Sister Mary Michele, op. cit., p. 30.

³Nathan Stoller, Gerald S. Lesser, and Philip I. Freedman, "A Comparison of Methods of Observation in Pre-Service Teacher Training," Audio Visual Communication Review, 12:178, Summer, 1964.

By using video tape the college instructor and the public school teacher can discuss the lesson more fully before taping and decide what they want because it will be taped only once. Under direct observation, they usually do not have time to discuss the lesson since the college instructor would have several teachers to consult. The instructor has to consult several teachers because the classroom can usually only accommodate three or four observers at a time. The college class is therefore divided into several groups and each group observes a different class.¹

When using direct observation the instructor and the public school teacher cannot predict the interaction in the classroom once the lesson is in progress. Therefore, the instructor can only orient his students in general to the kind of lesson it will be, the subject matter, the characteristics of the pupils, and the teacher's approach. The lesson may move in an acceptable but unforeseen direction and the college students view this situation without advanced preparation. When using video tape the instructor can preview the recording and can tell his students exactly what they will see and what to look for. The tape can also be edited to eliminate undesirable educational as well as technical features.²

Many lessons can be recorded on video tape giving the instructor the opportunity to select lessons and lesson segments for final use.

¹Stoller, Lesser, and Freedman, op. cit., 178.

²Ibid., p. 179.

A single tape can contain segments from lessons taught by a number of teachers for the purpose of comparing their instructional techniques.¹

The college class may not be able to view a lesson under direct observation because of classroom limitations. The class must necessarily be divided up into groups making it virtually impossible for the entire class to see the same lesson. The instructor cannot accompany each group and cannot be as effective in elaborating upon instructional procedures he has not observed in person as when he shares the experience. Both of these problems are solved by video tape.²

Finally when viewing a video tape recording the instructor can stop the tape at any time and direct the students attention to any important features of the lesson and make any comments that will help the class. He can also repeat any portion or all of the tape.³

An often stated criticism of courses of education is that they are "too much theory" and "are not practical." This complaint can be partially eliminated by the use of video tape recordings of actual school situations.⁴

Presenting the recorded observation. When the recorded lessons are presented in the college classroom, the college students should be

¹Ibid.,

²Ibid.

³Ibid.

⁴Adkins, op. cit., p. 63.

given information about the children to help them understand their actions. The student observers should be advised of the confidential nature of the information and observations shown to them. They should also be instructed as to why an ethical and professional approach must be maintained in any discussion concerning the observations.¹

The information may be shown on an overhead projector. The given names of the pupils can be listed in alphabetical order with the corresponding data. In this way the student observers can easily locate the information for any pupil. The classroom teacher should be instructed to state a pupil's name when she calls on him for recitation during the recording.²

The types of data that would be useful are the chronological age, sociograms, I.Q., attitude toward the subject, etc. Pictures of the neighborhood where the children come from and of the playground available to the children would also help in understanding them. The pictures could be projected on a large screen if they were made into slides.³

Effectiveness of recorded observations. The effectiveness of recorded observations was tested by Stoller, Lesser, and Freedman. Their hypothesis was that kinescope recordings provide a more effective

¹William R. Rogers, Television Utilization in the Observation Program for Teacher Education (San Jose, California San Jose State College, 1962), p. 22.

²Ibid.

³Ibid., p. 25.

medium of observation than closed-circuit television and that closed-circuit television observation is in turn more effective than the traditional direct observation.¹

The students used as the subjects of this experiment were enrolled in Methods of Teaching Language Arts in the Elementary School. There were six sections of this course and two instructors who each taught three sections.²

For each instructor, one section made its observations in a public school in the usual way, another section remained in the college classroom and viewed a class by closed-circuit television. The third section was shown previously prepared kinescopes of lessons. Although the same class was not seen by all three groups, the lesson content seen was essentially the same. Eleven observations were made by each section. This was later reduced to ten.³

To test the hypothesis, a multiple choice test was given to the students prior to any instruction and again at the end of the

¹Nathan Stoller, Gerald S. Lesser, and Philip I. Freedman, "A Comparison of Methods of Observation in Pre-Service Teacher Training," Audio Visual Communication Review, 12:177, Summer, 1964.

²Nathan Stoller, "Television for Teacher Education," Changes in Teacher Education: An Appraisal, (Washington, D.C.: National Commission on Teacher Education and Professional Standards, 1964), p. 69.

³Ibid., p. 70.

semester as part of the final examination. Also the final examination had a second part in which the students observed a lesson. A class which had not been previously observed by the students was brought to the college studio on the final examination day and presented a lesson. The sections who observed directly during the semester observed the lesson in person. The sections who observed by closed-circuit television viewed by two monitors in their college classroom. The third sections who observed by kinescopes saw the lesson by only one monitor. In this way, all of the sections were able to view the same lesson simultaneously by the method they had used during the semester. After the lesson, the students were given an essay test in which they were to evaluate what they had observed.¹

The multiple-choice test, which was to measure the information about methods of teaching, did not confirm the hypothesis. The first semester of the program the television observers were better than the direct observers which were better than the kinescope observers. The second semester these results were reversed. The over-all differences between the groups were therefore nonsignificant.²

The essay examination, which was to assess the ability to evaluate an observed classroom lesson critically, confirmed the

¹Stoller, *op. cit.*, p. 70.

²Stoller, Lesser, and Freedman, *op. cit.*, p. 191.

hypothesis. The different observational methods did produce different effects upon learning and in this case the kinescope observers were superior to television observers which were superior to direct observers.¹

Another investigation by Rogers used closed-circuit television with varied amounts of direct observation. He used three experimental groups. The first group received thirty-seven and one-half hours of television observation plus twelve and one-half hours of direct observation. A second group received twenty-five hours of television and twenty-five hours of direct observation. The third group was given twelve hours of television plus thirty-seven and one-half hours of direct observation.²

He also had two control groups which received fifty hours of direct observation which was the normal program. All groups were enrolled in the course, Elementary School Curriculum and Observation.³

The experimental and control groups were evaluated by two rating scales. A member of the college professional teacher education staff, two public school teachers, and two public school administrators each filled out a rating scale which was to assess the student for potential

¹ Ibid., p. 193.

² Rogers, op. cit., p. 6.

³ Ibid.

teaching competence in relationship with children, relationships with staff, teaching techniques, and personal qualifications. This was done at the conclusion of the observation course. The other evaluation was done after student teaching. A performance rating scale on each student was completed by two members of the college professional teacher education staff, two public school administrators and two public school teachers.¹

The means for each of the five groups on both evaluations were not significantly different. There was also no significant difference between the means of the combined experimental groups and the combined control groups.²

In a study by Chabe, three groups of students were used to determine the effectiveness of closed-circuit television. The control group observed in the classroom and were given guide sheets to fill out. On the guide sheets the students were to record the understandings they formulated which children could also supposedly formulate, skills the children developed, the attitudes the children formed and the pupil appreciations which grew out of the lesson.³

¹Ibid., p. 8.

²Ibid., p. 34.

³Alexander M. Chabe, "Experiment with CCTV in Teacher Education," *Peabody Journal of Education*, 40:26, July, 1962.

A second group observed via television and were also given guide sheets. The last group watched by television but did not have guide sheets.¹

Chabe concluded from this study that guided television observation was almost as effective as actual guided classroom observation. Also the television viewers using the guide sheet were almost twice as effective in formulating generalizations as were the television observers without the guide sheet.²

Observational techniques. There are many ways in which observational techniques may be put to use in teacher education. One was described by Hok. In the English Language Institute at the University of Michigan, the following method of testing their teacher trainees on the application of teaching theory was used. One of the institute's best teachers would on a designated day use his class to demonstrate "good" and "bad" teaching techniques. This class was projected over a closed television circuit to a room where the teacher trainees were gathered to note the procedures they had been taught that were effective and those that were not. The methods teachers then prepared a check list against which to match the trainees' observations. Both teachers and trainees felt that such a television demonstration was a

¹ Ibid., p. 25.

² Ibid., p. 29.

fair test and a satisfactory one.¹

Stoller stated that recordings of counseling situations might be used for the training and evaluation of empathic behavior in counselors.² Recordings showing the proper procedures for giving tests or showing a student council in session could also be used in programs for the preparation of guidance counselors. Future school administrators can be shown recordings of a school board in session, an administrative meeting and budget sessions.³

One of the most difficult problems in teacher education arises from the absence of objective and valid instruments for evaluating teaching performance. The video tape recorder offers a possibility for developing an instrument for measuring teacher performance. Video tapes of teachers performing can provide an adequate record for developing objective measures of teacher behavior. The video tape recording can provide common material for observers to use. The recording can be played as many times as necessary to secure agreement and interpretation of specific events in the lesson.⁴

¹Ruth Hok, "Testing Teacher Trainees by Means of Closed Circuit Television and MLA Film No. 5," Language Learning, 14:55, Numbers 1 and 2, 1964.

²Stoller, op. cit., p. 72.

³Adkins, op. cit., p. 29.

⁴Herbert Schueler, Milton J. Gold, and Harold E. Mitzel, The Use of Television for Improving Teacher Training and for Improving Measures of Student-Teaching Performance, Phase 1. Improvement of Student Teaching (New York: Hunter College of the City University of New York, 1962), p. 112. (Mimeographed)

In the area of in-service education, panel discussion, special-methods demonstrations, and displays of new materials can be recorded and shown at the time of the meeting. Authorities who can not always be obtained for the day of the conference can, by the use of video tape, be there.¹

Finally in some instances the video tape recording made of public school classroom might possibly be played back to the class so they can learn by viewing their own performance. This would especially be useful in speech or drama classes.²

VIDEO TAPE RECORDING FOR SELF-OBSERVATION

The video tape recorder can also be put to use during student teaching. Because the video tape recorder can play a picture back immediately after it is recorded, the student teacher is afforded the opportunity for self-evaluation through self-observation.

There are three reasons why self-observation should help improve the student teaching experience. They are as follows:

1. The student teacher can see his own teaching performance. It would seem that the student could improve his performance on the basis of a more accurate perception of what he does.

¹ Adkins, op. cit., p. 28.

² Margarete R. Altenhein, "CCTV or Classroom Observation: What Shall It Be?" Peabody Journal of Education, 40:168, March, 1963.

2. Student teachers are not always aware of the things they do and frequently the university supervisor is not able to effectively tell the student about them. With the recorder, the supervisor can show the student.
3. The university supervisor should be able to communicate more effectively with the student through review of video recordings than discussion based on his notes only.¹

Allen and Gross described the use of this technique in a program which they called a microteaching clinic. This clinic at Stanford University was carried out during the summer. It consisted of three phases: (1) a tutoring program, (2) individual microlessons, and (3) micro-classes.²

During the tutoring phase the student teacher tutored a local high school student twice a week. In the microlessons the student teacher taught five to ten minute lessons to three or four students. Half of these lessons were recorded on video tape and played back immediately after the lesson to give the teacher a picture of his performance and the pupil's reactions to it. Later the teacher taught the same lesson to a different group of pupils and in most cases the performance improved dramatically. During the third phase, micro-classes, video tape was also used occasionally.

¹Herbert Schueler and Milton J. Gold, "Video Recordings of Student Teachers," Journal of Teacher Education, 15:359, December, 1964.

²Dwight W. Allen and Richard E. Gross, "Microteaching," NEA Journal, 55:25, December, 1965.

³Ibid., p. 26.

The effectiveness of self-observation was tested by Acheson. He undertook two major tasks: (1) to demonstrate the feasibility of making television recordings in regular high school classrooms and (2) to test the effects on behaviors of student teachers associated with observing their own teaching through tape recordings. The behaviors studied were the amount of teacher monologue and the frequency of episodes. An episode was a completed verbal exchange between two or more persons.¹

For one variable, half of the subjects viewed a tape recording of their initial performance before another recording was made, the other half did not. For a second variable, the type of supervision the student received was either direct, indirect, or none.²

In direct conferences, the supervisor suggested specific changes the student teacher should make. In the indirect conferences, the supervisor did not give any suggestions but instead tried to get the student teacher to make suggestions for change. Any consideration of pupil participation and any intentions to reduce the amount of lecture were encouraged.³

¹Keith A. Acheson, "The Effects of Feedback From Television Recordings and Three Types of Supervisory Treatment on Selected Teacher Behaviors," (Unpublished Doctor's dissertation, Stanford University, Stanford, California, 1964).

²Ibid.

³Ibid.

The decrease in teacher monologue for the television group with a conference was greater than the decrease in the group without television. The difference was significant. Also significant was the decrease in teacher monologue for the television group with a conference when compared to the group with no conference. The differences in the number of episodes were not significant.¹

Acheson concluded that television tape recordings were feasible and effective in conferences with student teachers in helping them to analyze and change their behavior. These recordings can be made either in simulated, pre-service practice or in actual classroom practice. The tape recordings in both direct and indirect supervisory conferences increased the supervisor's ability to change a specific teacher behavior.²

Another project to find out the effectiveness of self-observation was conducted with kinescopes at Hunter College by Schueler, Gold and Mitzel. This was an investigation of the potential gain in the development of student teachers by providing recorded television films of their teaching performance.³

This experiment used two experimental groups and one control group. In the control group the college supervisor made five separate observations during the semester. Following each visit the supervisor

¹Ibid.

²Ibid.

³Schueler, Gold, and Mitzel, op. cit., p. 1.

and the student teacher discussed the lesson using the notes of supervisor and questions of the student teacher.¹

The first experimental group used kinescopes of the student teacher's lesson, but the college supervisor was not present in the classroom at the time the kinescope was made. He did observe from the television control room and directed the technician in pointing the cameras and selecting views. Five kinescopes were recorded for each teacher and these formed the basis for the conferences between the student teacher and the college supervisor.²

The second experimental group was a combination of direct observation and kinescope observation. The supervisor visited the classroom five times and while he was there a recording of the teacher's performance was made. Later a conference would be held using the supervisor's notes and the kinescope.³

The sources of data were (1) analysis of scores on a teaching observation schedule, (2) recorded interviews with student teachers, and (3) reactions of the supervisors. The observation schedule was developed for the project by the research personnel.⁴

¹Ibid., p. 10.

²Ibid., p. 11.

³Ibid., p. 11.

⁴Ibid., p. 110.

Although the project did not show an advantage to recording a student teacher's lesson for supervisory purposes, the supervisors and student teachers did feel subjective convictions about the technique, particularly for the observation-plus-kinescope condition. As a result Hunter College records on video tape one lesson per semester per student to be viewed by supervisor and student teacher.¹

EQUIPMENT NEEDED FOR VIDEO TAPE RECORDING

The camera. One basic piece of equipment needed for video tape recording is a television camera. The camera acts as an electronic eye which at the time of this study used the image orthicon or the new vidicon tube. The image orthicon tube was the type used in standard studio cameras. The vidicon tube was a less costly unit to buy and service and was better suited for use by non-professional personnel. It was also small and light in weight, which made it possible to use standard 16 mm tripods, lenses and other accessories.²

Television cameras could be obtained with or without an electronic viewfinder. A camera with a viewfinder can be mounted on a tripod which is attached to a dolly for mobility. With a viewfinder the cameraman is able to know the limits of the scene and whether it is

¹Wathan Stoller, "Television for Teacher Education," Changes in Teacher Education: An Appraisal (National Commission on Teacher Education and Professional Standards, 1964), p. 68.

²Edwin P. Adkins (ed.) Television in Teacher Education, (Washington, D.C.: Association of Colleges for Teacher Education, 1960), p. 32.

in focus as the camera is moved about. A camera without a viewfinder is usually mounted in a fixed position or is used with a remote control unit since the picture being viewed is checked on a monitor at a different location.¹

When more than one lens is used on a camera, a revolving lens turret mounted on the camera allows the changing of the lenses without removing them. The purpose of having several lenses is to enable the cameraman to alter the field of the scene without moving the camera. The zoom lens is well suited for educational purposes since the angle of view or field is continuously adjustable without losing focus or having to change to another lens. Because of this, a single lens camera is quite suitable. Remote controls are also available for the zoom lens making it even more appropriate.²

The video tape recorder. Another piece of equipment necessary for recording is a video tape recorder. Portable video tape recorders were first introduced to the market in June of 1963. They were about the size of a medium suitcase and weighed between seventy and one hundred and fifty pounds. An important feature of the portable video tape recorder for education was its low cost when compared with the studio models. Although not inexpensive, they were within the reach

¹ Ibid., p. 33.

² Ibid., p. 34.

of a college budget.¹

Another important feature of the recorder is the ease of operation. The portable video tape recorder is only a little more difficult to operate than a regular audio tape recorder and the controls are about the same. The threading of the machine is also simple. A station wagon or a commercial van is adequate for transporting a portable recorder.²

There were several problems involved in using a portable video tape recorder. One was the lack of a splicer for editing purposes. This was caused by the method the signals were recorded on the tape. The helical scan used by the recorder recorded on the tape in a long diagonal direction. To edit such a tape would have required a long diagonal splice across the tape but there were no splicing machines on the market to do this.³

The author discussed this problem with a television technician. He said that the tape could be spliced by overlapping the two ends of the tape and making a cut transversely across the overlapping ends. By doing this the two ends matched and could then be put together butt to butt and taped with regular audio splicing tape. This worked but left a disarranged picture for two or three seconds. The technician

¹Warren L. Wade, Television Tape Recording Systems: A Guide for School Administrators, (Ampex Corporation, 1964), p. 4.

²Ibid., p. 6.

³Ibid.

stated that the best method of editing was to use two video tape recorders and record on one recorder segments of other tapes being played on the other recorder.

Another problem was that portable, video tape recorders had not been standardized at the time of this study. That is, a tape from one model could not be played on a model made by a different company. It was possible, though, to transfer a program from one tape to another by playing back on one machine and sending the signal through coaxial cable to another which was recording. Standardization would come later when the different models had been evaluated to determine the best method of recording the signal on the tape.¹

The greatest asset the video tape recorder has is the unique characteristic of instantaneous playback. The tape does not need processing. The tape is simply rewound and played back as an audio recorder would be.

At the time of this study, the tape could be erased and used as many as two hundred times.² The tape of course was being continuously improved and the number of times the tape could be used was increasing.

To make a tape recording the camera is connected to the video tape recorder by a coaxial cable which carries the electronic signals

¹Ibid., p. 7.

²Julian L. Bernstein, Video Tape Recording (New York: John F. Rider Publisher, Inc., 1960), p. 260.

to be recorded on the tape. If only one camera is used this is all of the equipment needed. But if two or more cameras are used, a monitor for each and a switcher has to be added. The signal from each camera is then sent to its monitor and then to the switcher. The monitors and switcher are all located in one place. This allows the person operating the switcher to select the picture that he wants to record by viewing the monitors. Then from the switcher the selected signal is sent to the recorder.

Equipment for playback. For playback, the tape is played on the tape recorder and the signals are sent to the monitors by coaxial cable. A speaker for each monitor is also necessary since the sound is not transmitted by the coaxial cable but through a separate electrical wire connected to the recorder.

A single television monitor is satisfactory for about fifteen students, twenty at the most.¹ The seating arrangement should be such that no student will be sitting at more than a forty-five degree angle from the perpendicular to the monitor screen.² The front row of students should sit back far enough so they will not have to look up at no more than a thirty degree angle from the horizontal.³ The students

¹ Lawrence Costello and George N. Gordon, Teach With Television (New York: Hastings House, Publishers, 1961), p. 120.

² Ibid., p. 123.

³ Ibid., p. 122.

will then be seated in a triangular pattern with an apex closest to the monitor. To accomodate this arrangement the monitor can be set in a corner of the room at the height of about a foot above the students' heads and tilted forward about ten to fifteen degrees. Four monitors could be used in this way in the four corners of a classroom or fewer depending upon the number of the students.¹

In choosing equipment for video tape recording, careful study needs to be made of the purposes for which the equipment will be used, the kinds of equipment which can achieve these purposes, and the advantages and disadvantages of each.²

SUMMARY

The portable video tape recorder was placed on the market in 1963 making available an instrument which could be valuable in teacher education. The purpose of this report was: 1) to determine the equipment necessary to video tape record a school situation and the equipment necessary to play the recording back to the college class, 2) to determine the methods in which these recordings can be used in teacher education, and 3) to determine from research that has been done how effective these methods are.

¹Ibid., p. 126.

²Sister Mary Michele, "Teacher Training by Video Tape," Catholic School Journal, 65:32, May, 1965.

The recording of a school situation such as a lesson requires detailed planning. The college coordinator in charge of securing needed recordings should work closely with both the college and the public school personnel. The planning should be done well in advance of the recording session. The types of recordings needed by the college staff must be determined and then schools must be located which can provide these situations for recording. The process of obtaining a good recording then is probably the most important and complex task in using the video tape recorder for teacher education.

Observation is one of the main ways in which the video tape recorder can be used. Many times the college instructor could be more effective if he could show his class an actual example of what he is talking about. This is now possible with the video tape recorder. The instructor can show an example of the behavior of a fifth grade boy. He can show a future administrator a school board meeting. A college class has the possibility of seeing any school event as it actually occurred. Research has shown that observation via television is as effective as direct observation and in some cases more effective.

Self-observation offers another possibility in which teacher education can be improved by the video tape recorder. The student teacher can now see himself as his pupils see him via the video tape recorder. He can also see how his pupils reacted to his lesson. The university supervisor is able to sit down with the student teacher and discuss more exactly what he did right or wrong. The supervisor does

not have to rely on his notes and memory any longer for these conferences. Research by Acheson enabled him to conclude that television recordings are feasible and effective in changing student teacher behavior.¹

The basic equipment necessary to video tape record a school situation is a camera and a video tape recorder. For playback to a class a large monitor is needed. With this simple set up, recordings can be made and shown to classes. Other equipment can be added to make a more elaborate and efficient system.

¹Keith A. Acheson, "The Effects of Feedback From Television Recordings and Three Types of Supervisory Treatment on Selected Teacher Behaviors," (Unpublished Doctor's dissertation, Stanford University, Stanford, California, 1964).

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THE USE OF VIDEO TAPE RECORDINGS FOR TEACHER EDUCATION

by

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B. S., Kansas State University, 1963

AN ABSTRACT OF A MASTER'S REPORT

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The portable video tape recorder was placed on the market in 1963 making available an instrument which could be valuable in teacher education. The purpose of this report was: (1) to determine the equipment necessary to video tape record a school situation and the equipment necessary to play the recording back to the college class; (2) to determine the methods in which these recordings can be used in teacher education; and (3) to determine from research that has been done how effective these methods are. This information was obtained from the libraries at Kansas State University and other colleges and universities.

The recording of a school situation such as a lesson requires detailed planning. The college coordinator in charge of securing needed recordings should work closely with both the college and the public school personnel. The planning should be done well in advance of the recording session. The types of recordings needed by the college staff must be determined and then schools must be located which can provide these situations for recording. The process of obtaining a good recording is the most important and complex task in using the video tape recorder for teacher education.

Observation is one of the main ways in which the video tape recorder can be used. Many times the college instructor could be more effective if he could show his class an actual example of what he is talking about. This is now possible with the video tape recorder. The instructor can show an example of the behavior of a fifth grade boy. He can show a future administrator a school board meeting. A college class has the possibility of seeing any school event as it actually

occurred. Research has shown that observation via television is as effective as direct observation.

Self-observation offers another possibility in which teacher education can be improved by the video tape recorder. By making a video recording of his performance, the student teacher can now see himself as his pupils see him via the video-tape recorder. He can also see how his pupils reacted to his lesson. The university supervisor is able to sit down with the student teacher and discuss more exactly what he did right or wrong. The supervisor does not have to rely on his notes and memory any longer for these conferences. Research has shown that television recordings are feasible and effective in changing student teacher behavior.

The basic equipment necessary to video tape record a school situation is a camera and a video tape recorder. For playback to a class a large monitor is needed. With this simple setup, recordings can be made and shown to classes. Other equipment can be added to make a more elaborate and efficient system.