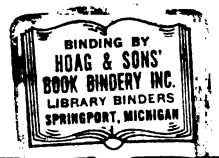


UTILIZING TELEVISION IN EDUCATING
THE DEAF

Thesis for the Degree of M. A.
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ABSTRACT

UTILIZING TELEVISION IN EDUCATING THE DEAF

By

Bernard Anthony Sermak

The purpose of this thesis is to report and discuss factors to be considered by administrators, media coordinators and teachers when developing or employing programs of televised instruction for students with hearing impairments.

This thesis examines such factors as: (1) History of television in deaf education and its functions in active organizations, (2) Positive characteristics of the television classroom and studio teacher of the deaf, (3) Television's role in constructing curriculum and teacher training programs.

There is at present, relatively little systematically created printed material which relates the use of television to deaf education. Hopefully, an examination of the mentioned factors will provide a resource base for educators of the deaf who seek to devise viable television classroom systems and instructional operations.

In preparing this thesis, the bulk of information investigated was derived from extant literature, which included professional journal articles, books, and dissertations.

In addition, information was requested from various schools and professional organizations currently using television in their efforts to serve the deaf. They were asked to respond to a letter designed to elicit data about the intent and extent of their activities.

An analysis of the findings of this thesis, has led to the conclusion that although the literature reveals some present-day use of television in deaf education, indications for a more comprehensive implementation are not encouraging and television's full potential as an instructional instrument for the deaf is still unrealized.

Accepted by the faculty of the Department of Television
and Radio, College of Communication Arts, Michigan State
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the Master of Arts degree.

Robert Schreier
Director of Thesis

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Finally, a very special note of thanks is reserved for my wife, Nancy. While not academically involved in the completion of this volume, she nevertheless displayed a remarkable amount of faith given with quiet and comforting charm.

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CHAPTER I

INTRODUCTION

The primary purpose of this study is to critically examine the use and effectiveness of television in the instruction of deaf children attending both public and private institutions in the United States.

In an effort to establish functional guidelines of value to future researchers, administrators, and teachers of the deaf, this examination has attempted to assess the existing literature of the field and assemble its facts in useful form.

Found in the body of this thesis is information designed to compile a condensed review of historical developments and organizational activities. Furthermore, the study attempts to establish positive factors for employing television in curriculum and teacher training programs, discusses administrative roles for system implementation, and presents interpretive conclusions with further research recommendations.

A brief section of this thesis is devoted to definition of terms commonly used in deaf education.

Traditionally, the hearing impaired child in the United States has been exposed to a curriculum which has been

structured essentially for the child with no auditory disadvantage.

Considerable academic study and research projects during the past fifteen years, have validated evidence that educational television is considered to be a functional tool of the trade. The means and methods of applying television in general education, however, do not always aid in establishing optimum levels of learning for the deaf pupil.

Therefore, it has been this writer's desire and task, to present a discussion of the special instructional talents of television as they might uniquely apply to teaching the hearing impaired.

Norbert Nathanson, Assistant Director of Instructional Resources at State University of New York, pointed out the still present requirements for a discovery of the untapped potential of television for the deaf. The need for an organized, systematic approach to research, collection of historical data, finding new source materials, spreading professional organization involvement, and computing figures on costs and effectiveness, were some of the areas that received his comment.¹

As a teacher of the deaf, this writer is committed to seeing that children with auditory disadvantages become

¹Lecture by Norbert Nathanson, Assistant Director for Instructional Resources, State University of New York, Albany, given to the Workshop on Video Technology and Programs for the Deaf, Knoxville, Tennessee, February, 1969.

self-sufficient and productive members of their community. The reception of an inclusive education is fundamental to both considerations.

This thesis is the writer's effort to respond to part of Norbert Nathanson's challenge in a mode that reports, elucidates, and projects its data.

Definition of Terms

In any discussion of deaf education the proper nomenclature should be considered. People with defective hearing come under two broad classifications: deaf and hard of hearing.

1. An individual is defined as deaf when the hearing impairment is such that "the sense of hearing is non-functional for the ordinary purposes of life."²

2. A related classification is hard of hearing. These persons have hearing losses which are considered as mild, marginal, or moderate. "Depending on the extent of their loss they may learn speech by ear or through the benefit of amplification and with or without the auditory sense being aided by the visual."³

²Jerome Schein and John Kubis, A Survey of Visual Aids in Schools and Classes for the Deaf and Hard of Hearing, Gallaudet College, Washington, D. C., 1962, p. 1.

³Alice Streng, Hearing Therapy for Children (New York: Grune and Stratton, Inc., 1958), pp. 164-165.

It is difficult to express the educational difference between these two terms because they represent degrees of hearing loss.

The distinction between these hard of hearing children and these whom we have called the deaf is not entirely clear. The reason is that individual children may differ greatly in the use that they are able to make of the remainder of their hearing. It is not simply a matter of the hearing level for speech but also of such different factors as the age of onset, of the severity and the exact type of hearing loss, the intelligence of the child, the amount of training that the child has had, and particularly, the age at which the training was begun.⁴

3. Another term commonly used is partially deaf.

Children with severe losses that may be considered as partially deaf, have trainable residual hearing, but their language and speech will not develop spontaneously, so they must learn to communicate through the use of specialized techniques. These people cannot learn to understand language by ear alone, even with the amplification of sound. They are on the borderline between the hard of hearing and the deaf.⁵

4. In this thesis the word speechreading is used in lieu of lipreading, because it is felt speechreading more accurately describes the process, i.e., interpreting the speaker's facial movements, gestures, and lip activity. W. C. Stokoe described the process when he said:

The eyes, eyebrows, and mouth, head dips, and other signs serve the function of syntactic indicators as well as take the place of intonation and inflection in oral language. The head dip, for example, signifies

⁴S. R. Silverman, H. S. Lane and D. G. Doehring, "Deaf Children" in Davis, Hallowell, and Silverman, Hearing and Deafness (Chicago: Holt, Rinehart and Winston, Inc., 1963), p. 453.

⁵Streng, op. cit.

first person singular, certain movements of the eye-brow indicate a question is being asked.⁶

5. Throughout this thesis, the writer has selected the terms hearing impaired, hearing or auditorily disadvantaged, deaf, and hard of hearing and used them in an interchangeable fashion. While obviously not identical in definition, they are used in mutual substitution simply as a matter of convenience and because it is felt that children with any type or degree of hearing loss can realize enhanced learning opportunity through the television medium.

6. The word handicapped will not be found in this examination because this writer believes that it is a culturally imposed term and a misnomer if the so-described individual does not possess a self-image of being at a functional disadvantage to his normally hearing peers. Many deaf people do not, in fact, perceive themselves as being handicapped, and therefore should not be labeled as such.

⁶W. C. Stokoe, Sign Language Structure: An Outline of the Visual Communication Systems of the American Deaf (Buffalo, New York: University of Buffalo Press, 1960), p. 64.

CHAPTER II

THE HISTORY OF TELEVISION IN EDUCATING THE DEAF

Deafness is a communication disadvantage of formidable proportions. One begins to realize the implications of deafness when considering the words of Helen Keller, the courageous woman who overcame multiple physical afflictions in her quest for survival in normal society.

I have found deafness to be a much greater handicap than blindness . . . I have come to regard hearing as the key sense. It is possible to supply the blind with the means of replacing nearly everything. With the deaf it is ever so much harder to find a substitute. That is why, if I could live again I'd work more than I have for the deaf and encourage the utmost endeavor to break the silence in which they live.¹

The child who is deaf, whatever the age of onset or extent, will have instruction in communication modes such as speechreading, the production and reading of manual symbols (signing), and speech. Obviously the child has special needs, and traditionally educators have responded with a variety of media which have contributed auditory and visual instructional materials, with development and adaptation, to improve the unique teaching and learning processes of the hearing impaired.

¹Helen Keller, "Helen Keller on Deafness," Volta Review 71 (April, 1969), p. 210.

In the search for what Edward Scouten of the Florida School for the Deaf called "total communication", the gathering of the best possible forms for the most living and learning situations, educators invariably turn to television, an audio-visual device of motion that offers countless possibilities to the realm of education for the deaf.

Emerging innovative patterns of television in schools for the deaf have been slowly developing. Early attempts were performed by non-commercial television stations.

Non-commercial Stations

In 1955, station KTHE-TV, the University of California, broadcast a twelve program series featuring various lipreading exercises.² Following this effort, the University of Nebraska television studios in 1956 aired a series which emphasized the phonetic approach to lipreading, that is, the use of printed sound-symbols in the production and written representation of various speech sounds. This series used superimpositions, a revolving drum and also attempted to simulate a tutorial situation by introducing a small, live audience to promote participation.³ Another lipreading and

²Lucelia Moore, "Television as a Medium for Teaching Speechreading and Speech," Volta Review 57 (June, 1955), pp. 263-4.

³Lucile Cypresasen and Jack McBride, "Lipreading Lessons on Television," Volta Review 58 (October, 1956), pp. 346-8.

social implications series was developed at the University of Wisconsin in 1958.⁴ While the primary purpose of these programs was to serve the hearing impaired audience, their secondary motive was to expose the entire viewing audience to the concept of deafness and improve public understanding of problems confronted by the deaf. Accordingly, seeds of publicity were first sown in non-commercial television studios, a publicity which has today generated world-wide concern and research in deaf education and the development of various social agencies devoting all or a goodly portion of their efforts to nurturing better rapport between deaf and hearing milieus. These organizations will be treated in a succeeding section of this chapter.

Additional lipreading series were developed and disseminated by KRMA-TV, at Denver, and also at Ohio State University in 1958-59.⁵ Problems were confronted because of the lack of a responding audience in the former project, so efforts were made to have each program previewed by an adult group involved as message recipients. The instructor was then able to obtain a better anticipation of the effects of the material as it was later received by a test group. Televised

⁴Edward F. Crowley, "Television and the Hearing Handicapped," Hearing News 26 (January, 1958), pp. 3-4.

⁵John J. O'Neill and Herbert J. Oyer, Visual Communication for the Hard of Hearing: History, Research, and Methods (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1961), p. 132.

lipreading lessons also triggered the first mention of this programming type on a closed-circuit system. A paper authored and presented by Larr and Hempen on the use of closed-circuit television for lipreading described it as "highly motivating."⁶

In October, 1960, WUNC-TV at the University of North Carolina broadcast a program entitled "You The Deaf", in which a minister talked to the deaf through sign language about current events and other items of special interest. Another program at a later hour, taught sign language.⁷ Entertainment programs produced specifically for the deaf have also been introduced by some non-commercial television stations. One of the earliest efforts, described by Roy Cole of Great Britain, in 1960, was a monthly program specifically for deaf children and broadcast over the British Broadcasting Corporation network. Programs consisted of several film varieties, live entertainment, and deaf children participating in games or art competitions. Captioning or sub-titling (superimposed symbols and signs) and a very visual format were implemented.⁸

These programs, in turn, stimulated Mrs. Rachel Stevenson of WTTV-TV in Chicago, Illinois to initiate a similar series for deaf children of that area. Two resulting series, "Funcraft for You" and "Grandmother's Kitchen" were well

⁶Ibid., p. 135.

⁷Wilbur Schramm, The Impact of ETV (Urbana: University of Illinois Press, 1960), p. 11.

⁸Roy Cole, "Television for Deaf Children," Volta Review 62 (June, 1960), p. 256.

received by teachers of the deaf.⁹ The National Educational Television network presentation of performances by the National Theater of the Deaf has been a more recent and national exposure to non-commercial television entertainment for deaf people.

"Let's Lipread," a series of thirty half-hour programs was devised to provide speechreading instruction and practice for persons with partial hearing loss. It was produced, recorded on videotape and originally telecast by WETA-TV, a non-commercial television station, during the 1963-64 winter season. Subsequently, the Boston Guild for the Hard of Hearing arranged for telecast of the series on WGBH-TV, Boston. It was also picked up by WNDT-TV, a New York non-commercial station.

In the fall of 1965, "Let's Lipread" was delivered in Seattle, St. Louis, and Chicago. The programs were popular, although not specifically intended for the totally deaf, nor for very young children.¹⁰

Also in 1964, Eastern Michigan University, Ypsilanti, Michigan began using closed circuit television facilities for training prospective teachers of the deaf. Television equipment was used for: (1) Longitudinal case studies. (2) Unusual cases that occur only occasionally, for example,

⁹T. J. Watson, "Television for Deaf Children in Chicago," Volta Review, 64 (January, 1962), p. 30.

¹⁰Robert D. Smith, "Let's Lipread": Television Production Criteria," American Annals of the Deaf 110 (November, 1965), p. 571.

deaf-blind, and deaf-physically deformed children.

(3) Videotapes illustrative of special methods and techniques and used for parent conferences, illustrious visitors, students, teachers and parents for self-evaluation, and off-campus in other schools for local application. Television devices are today still used extensively and held in high regard at this institution.¹¹

In 1967, educational television station KDPS, Des Moines, Iowa, experimented with a split screen device whereby regular programming was interpreted for deaf viewers by a person communicating with manual language symbols, whose image appeared in one corner of the screen.¹²

In literature also, attempts were being made to uncover the possible values of television for instructing the hearing impaired.

Herbert J. Oyer, Chairman of the Department of Speech and Audiological Sciences at Michigan State University, and John O'Neill, Director, Speech and Hearing Clinics, University of Illinois published a book in 1961 which conveyed their idea of using television for lipreading instruction in a broadcast situation that would reach a large potential audience. Oyer listed several advantages for television

¹¹Garl E. Garber and Sophie L. French, "Closed-Circuit TV Used to Train Teachers of the Deaf," Volta Review 71 (September, 1969), pp. 362-366.

¹²Saul Scher, "The Deaf: New Audience for TV," Audio-visual Instruction 12 (January, 1967), p. 48.

transmissions: (1) Pre-planning--televised lesson presentations demanding specific amounts of time, space, and material require strict teacher organization. Television monitors provide the instructor with feedback on the quality of his presentation before airing. (2) Camera techniques--image variety in distance, angle, and dimensions helps focus viewer attention on important aspects of speechreading mechanics. (3) Audio--television audio controls permit flexible sound levels determined by the instructor to best accommodate residual hearing abilities. (4) Supplementary Devices--charts, props, rolls, slides, motion pictures and many other visual aids can be effectively incorporated into a television lesson.¹³

The authors confronted the common dilemma of economy versus efficiency when broadcasting television programs to a select audience. They found no concrete answer. However, they concluded that television programs designed for those with hearing disorders should be judged on their instructional merits rather than total size of audience and only initiated after research indicated a worthwhile demand for these programs.

In writing about the advantages of commercial television for the deaf, Oyer stated, "The major worth of commercial television is that it can inform others of the problems of the aurally handicapped."¹⁴

¹³O'Neill and Oyer, op. cit., p. 136.

¹⁴Ibid.

Commercial Stations

Commercial television stations have tried several ways to provide programs designed to stimulate public awareness of the educational and social implications of deafness.

The American Broadcasting Company, in 1968, presented a series of documentaries on exceptional children. One was entitled, "I Can't Hear You," featuring therapeutic activities at the John Tracy Clinic in Los Angeles, California. Public education was the intent of this program. Dramatic series, aired by national television networks such as "Ben Casey," "Medical Center," and "The Avengers" have indirectly affected public attitudes with plots revolving around deaf subjects. Commercially marketed films presented on night-time television have also characterized the affliction. Some local commercial television stations have broadcast new programs which included an interpreter for deaf viewers, particularly in metropolitan areas where schools and industries have attracted a substantial deaf population.

A review of commercial television's programming efforts in the past year which were designed to have direct and special value for hearing impaired audiences appears in a forthcoming section of this chapter. Various local and national organizations serving the deaf indicated their interest in television for use in deaf education through their operating philosophies and activities of the past year.

Organizations

To complete the review of television's historical development in deaf education, a letter was composed and mailed by this writer to ninety persons occupying positions in school and agency offices whose deaf education policies and procedures might be utilizing television in a fashion significant to the goals of this thesis.

Open-ended in nature, the letter was not intended for statistical analysis, but rather to gather factual information or personal opinions. Briefly, it asked respondents for television related: (1) Printed Information --describing activities emanating from their offices, or from other agencies they might recall. (2) Special Projects--future activities contemplated by their group. (3) References--other knowledgeable persons who would be qualified respondents. (4) Bibliographic Copies.

The letters were distributed across the United States from September, 1969 to June, 1970. Some offices received letters because the literature had revealed past performances in many television-related experiences, or simply because they were operating deaf education programs, but the extent of instructional television utilization was not known. A list of addresses was compiled from American Annals of the Deaf--Directory Of Services For the Deaf In the United States and supplemented by other offices known to this writer.

A total of twenty-nine responses were consistent with the purposes of this exercise, and constituted a 32.2% return. In addition, the writer personally interviewed seven persons in the Lansing, Michigan area in an attempt to gain more data about Michigan-based television activities in deaf education, for this and a following chapter.

Commercial Stations

In 1969, there were indications that commercial television stations were beginning to heed the pleas of various groups for increased awareness to the needs of the deaf in their programming.

WLKY-TV, Louisville, Kentucky has formulated plans to study the idea of using interpreters for news broadcasts and other programs.

KCMO-TV, Kansas City, Missouri has added the words "if you have a deaf neighbor, see that he is warned," as an additional feature to its tornado warning service.

KATV-TV, Little Rock, Arkansas employed the superintendent of the local residential school for the deaf to interpret several news programs into sign language for the benefit of the deaf at the school and in the community.

WTOP-TV, Washington, D. C. uses "supers" spelling out news bulletins on events occurring throughout the area.

KTVI-TV, St. Louis, Missouri allows its news commentator to present the details of the news while the topic is rear-screen projected. Reports have indicated the hearing impaired greatly enjoy this feature.

WGEM-TV, Quincy, Illinois programs local election returns and sports results by flashing across the screen without interrupting regular programs.¹⁵

Schools

Gallaudet College in Washington D. C. is utilizing closed-circuit television to a "limited extent", but does not have it set up primarily as an instructional medium. Plans were made for a new dormitory on campus to have closed-circuit television, with captions or an interpreter, piped into an activity room on each floor and reaching some 26-32 students. The Audio-Visual Department hopes to get permission to record daily news broadcasts, special features, and campus-produced programs for programming, again with captions or interpreters, into dormitories. Plans are incomplete for making extensive use of closed-circuit television in Gallaudet College's Model Secondary School for the Deaf.¹⁶

Dr. William Hess and Dr. Donald Torre, during the 1969-70 school year at Gallaudet College have worked with video tape as a diagnostic tool in preparing teachers of the deaf for their work. They would eventually like a series of tapes which provides student teachers with behavioral goals including a variety of experiences in audiology, psychology, speech and language problems, and learning disabilities.

¹⁵Letter from Mr. Robert R. Anderson, Jacksonville, Illinois, September 24, 1969.

¹⁶Letter from Dr. R. Orin Cornett, Vice President, Gallaudet College, Washington, D. C., December 8, 1969.

Student teachers would identify tests and diagnostic procedures by name and function and would develop identification of performance characteristics. They would also discuss educational programming, including audiological, psychological, and parental aspects. Usage, to date, has been experimental, but it was felt most of the video tapes have achieved their desired objectives.¹⁷

At the National Technical Institute for the Deaf in Rochester, New York, projects currently underway are: speech-reading, manual communication, and the printed word, through a television medium conducted by Mr. Robert Gates. In addition, a comparison of selected styles of presenting poetry to deaf students via television is being studied.¹⁸

Mr. Lawrence Reiner is directing the project which studies the impact on achievement and affect of selected styles of presenting poetry on television. Treatments included teacher simultaneous method on television plus a live overhead projection of the poem, teacher live plus captions related to teacher-presented material and live overhead of the poem, captions only on television and live overhead of poem, hard copy of the captions plus hard copy of the poem, and finally hard copy of the poem only.

¹⁷Letter from Dr. Wilson Hess, Dean, Gallaudet College, Washington, D. C., April 5, 1970.

¹⁸Letter from Mr. Robert R. Gates, Associate Director for Training, National Technical Institute for the Deaf, Rochester, New York, March 11, 1970.

The design allows measurement of dependent variables such as mood and achievement scores in sense, meaning and figures of speech. The project was not complete, but latest progress included planning with the instructor for isolation of material to be used and detailed procedures for producing material.¹⁹

The Marie H. Katzenbach School for the Deaf in West Trenton, New Jersey created a unique renovation of an existing classroom into a semi-automated multi-media module in which equipment was mobilized so that it could be used by the instructor for lectures in an electronic classroom and by the students in an individual learning laboratory. The media-module stresses language and thought development to "satisfy the individual needs of our more academically talented vocational and post graduate technical students." Attempts were made at all times to preserve the naturalness of the "old" classroom, while installing complete media facilities. Equipment included a 16 mm projector on cart with rear screen projection, 8 mm and 35 mm motion pictures, film strips, cartridge and slide projector, overhead projectors and viewing screens with fold-away student response screen, head sets, external speakers, storage and book shelves, conference area, and study carrels. Space has been provided

¹⁹Letter from Mr. Lawrence O. Reiner, Research Associate, National Technical Institute for the Deaf, Rochester, New York, April 4, 1970.

for future expansion, including possible installation of closed-circuit television.²⁰

A visual response system for small-group interaction called The Mediated Interaction Visual Response System (MIVR) has been constructed at the University of Massachusetts by the Northeast Regional Media Center for the Deaf. Raymond Wyman, professor of education at the University of Massachusetts, described the system's functions in a reprinted article from Audiovisual Instruction magazine. The MIVR is an attempt to add an instantaneous visual response mode for a group of eight students seated in front of their teacher, who, in turn, has a variety of oral and visual presentation modes and materials at his command. Students learn from texts, supplementary printed materials, films, slides, tapes or programmed learning in group or individual study areas. Small-group interaction sessions follow teaching lessons in which each student is asked to continually respond to the teacher by pointing, writing, coloring or underlining the transparency on his own overhead projector. The teacher also has an overhead projector and could use other devices such as filmstrips, film clip projectors, and record players. In practice, the teacher requests responses from the students, they construct answers simultaneously, and the teacher scans their screen images for accuracy and appropriateness.

²⁰Letter from Mr. James P. Lenox, Advanced Studies Instructor, Marie H. Katzenbach School for the Deaf, West Trenton, New Jersey, March 24, 1970.

Corrections are made immediately. Teachers using the system commented that they were at last having real dialogue with their students. Inexperienced personnel who were otherwise understood with difficulty by the students were finding new success in obtaining mutual comprehension.

Experiments with MIVR have been conducted in the Marks Meadow Laboratory School at the University of Massachusetts and the American School for the Deaf in West Hartford, Connecticut.

Mr. Wyman mentioned that television cameras were being used as substitutes for overhead projectors in the MIVR system. Eight cameras and small monitors were to be purchased and suspended over the desks of eight deaf children so that the teacher could observe responses simultaneously. The equipment was just about to be purchased and there is no present indication of its value.²¹

The California School for the Deaf is using an Ampex video tape recorder, but in a limited capacity because of maintenance problems, demands on the media specialist's time, and the need for in-service training of staff. To date, it has been used for taping classes in the experimental program for emotionally disturbed boys, presentations to the school's staff by outside speakers, and basketball games.²²

²¹Letter from Dr. Raymond Wyman, Professor of Education University of Massachusetts, Amherst, Massachusetts, December 18, 1969.

²²Letter from Mr. Robert K. Lennan, Supervisor, Multi-Handicapped Unit, California School for the Deaf, Riverside, California, December 1, 1969.

The John Tracy Clinic, an educational center for pre-school deaf children and their parents, is involved in a project developing a series of forty-two films on teaching speech to the deaf. The clinic was shooting originally on video tape because very young deaf children could not be pre-instructed on their desired roles. Proper behavior had to be obtained on tape before the next sequence could be performed. Video tapes were being transferred to and edited in 16 mm. Some 16 mm films had been converted to 8 mm cartridges.²³

WTSD is a closed-circuit television broadcast station located on the campus of the Tennessee School for the Deaf. A program, "The Living Textbook", is produced by the station and designed to give deaf children interesting and appropriate information in language development, vocabulary and reading skills, and social awareness.

Each program is twenty minutes long, fully captioned, and part of a sixty program series. Equipment in the broadcast studio includes an Orthovox sound system, console, oscilloscope, Conrac off-air receiver, transmitter, Gen-lock sync generator, monitors, three cameras, tape deck and a caption board. Many programs used on the campus originate from Channel 2 in Knoxville.

²³Letter from Mr. Edgar L. Lowell, Administrator, John Tracy Clinic, Los Angeles, California, December 12, 1969.

Audio portions of programs are dictated on a Uher tape recorder, with care taken to insure captions are at correct language levels for each program. An Ampex VR 5000 recorder is used to tape the final program and is also used to broadcast programs at specific times.

Future plans for WTSD include a three channel hookup allowing simultaneous broadcasting at three levels of learning and a permanent tape library. The establishment of a network of closed-circuit television stations for the deaf is in process.²⁴

The Virginia School for the Deaf and the Blind has television sets in dormitories and utilizes them for instructional purposes from time to time, but has no formal plan or program for future implementation.²⁵

Facilities at the Georgia School for the Deaf include a television camera and video taping equipment personally owned by a physical education instructor, who uses the devices in teaching and coaching.

The school has coaxial cable installed between campus buildings, with branch connections to each classroom. Continuing and extensive educational programming for the

²⁴Letter from Mr. Lee McCartt, Media Director, Tennessee School for the Deaf, Knoxville, Tennessee, March 23, 1970.

²⁵Letter from Mr. Joe R. Shinpaugh, Superintendent, The Virginia School for the Deaf and the Blind, Staunton, Virginia, December 8, 1969.

majority of students has not yet been realized.²⁶

The School Media Center at the Illinois School for the Deaf was considering purchasing a portable video tape recorder and monitor whenever funds became available, but did not own any television equipment at the present time.²⁷

The Idaho State School for the Deaf and the Blind was in the very beginning stages of adapting television equipment to its instructional program.²⁸

Fontbanne College in St. Louis, Missouri has Sister James Lorene working with video tapes as an integral part of the teacher preparation program for the deaf. Sister Lorene creates new applications of instructional materials in her role as a teacher of teachers. She instructs her students not only to utilize video tape with individual students and as a self-evaluative device, but also to develop skills in operation of the equipment itself. Sister Lorene subscribes to a systems design method with written behavioral objectives. A given televised instructional unit lists the problem, behavioral objectives, content, instructional

²⁶Letter from Mr. Fred L. Sparks, Jr., Superintendent, Georgia School for the Deaf, Cave Spring, Georgia, December 10, 1969.

²⁷Letter from Mrs. Carole Templin, Learning Resources Coordinator, Illinois School for the Deaf, Jacksonville, Illinois, December 12, 1969.

²⁸Letter from Mr. Paul C. Bird, Superintendent, Idaho State School for the Deaf and the Blind, Gooding, Idaho, January 5, 1970.

strategy, media/equipment and evaluation/assessment.²⁹

The Tennessee School for the Deaf is using video tapes in science learning units. Video tapes are presented to small groups as supplements to normal instructional plans. Viewing sessions are followed by question-and-answer periods, and reinforcement of difficult concepts is provided for individuals or entire groups by reviewing selected portions of the video tape. Evaluations of this application are continuing.³⁰

A multi-media unit centered around 8 mm films and a video tape recording system for primary language classes is presently applied at the Wyoming School for the Deaf. Video recordings are used to reinforce 8 mm films by using the same verbs found in the films but in different contexts. Students are video taped going through the motions of specific verbs and captioning was added to relate written symbols with actions. The video tape was first shown to a large group, and then to individual children for as many times as it was necessary to meet objectives. For further reinforcement the children viewed a video tape of a teacher who orally presented verbs in sentence form. The pupils first wrote down the spoken verb and then received confirmation

²⁹Letter from Dr. Robert E. Stepp, Director, Midwest Regional Media Center for the Deaf, Lincoln, Nebraska, April 5, 1970.

³⁰Ibid.

from the teacher on the video tape. It was felt that video tape recordings had been effective tools because so many objectives were met, even though a separate evaluation of video tape recordings from other audio-visual aides was not undertaken.³¹

Interested readers will find summaries of many school for the deaf television activities in 1968-69 contained in reports distributed by the Midwest Regional Media Center for the Deaf, and resulting from symposia held in those years at Lincoln, Nebraska (see List of References).

Agencies

The Associated Colleges of the Midwest Organization is undertaking a project for preparing video tapes of unrehearsed classroom situations for use in teacher education. One hundred twenty-six tapes are available to display classes using curriculum materials of several new social studies projects. Classes in science and mathematics are also being taped.³²

Video tape recordings are used as an integral part of the Callier Hearing and Speech Center therapy operations. The application of television was not felt to be a "special" project, but rather an important tool with use on a day-to-day

³¹Letter from Mr. Roderick Laird, Assistant Director, Wyoming School for the Deaf, Casper, Wyoming, April 5, 1970.

³²Letter from Mr. Norman L. Hoover, Associate Director, Associated Colleges of the Midwest Video Tape Project, Northfield, Minnesota, December 2, 1969.

basis.³³

Publicity to improve television visualization is one of the primary goals of The Council of Organizations Serving the Deaf (COSD) TV Committee for the Hearing Impaired. The Committee has been communicating through meetings and correspondence since early 1968 with: key executives of the three major networks (NBC, CBS, ABC), Telecommunications Management, Executive Office of the President (United States), and the National Association of Broadcasters. At the same time it has been urging state and city organizations for the deaf and hard of hearing, and persons with hearing problems themselves, to appeal to their local television stations for more visualization in programs. At this time, responses from those stations is favorable at least to the extent that executives are becoming cognizant of and studying the needs of the deaf and hopes of COSD. The Columbia Broadcasting System has promised to increase their use of visual emergency information whenever possible. Their sports department intends to expand visual materials for more scores and names of players. The recent Apollo Missions used descriptive words of events in the lower part of the screen.

Briefly, the COSD is trying to obtain captions, words, and names on television screens across the nation for everybody to read, that is, the deaf, hard of hearing, and hearing

³³Letter from Mr. Charlie Thompson, The Callier Hearing and Speech Center, Dallas, Texas, December 14, 1969.

people. They would like to begin, at least, with regular newscasts and news bulletins using messages flashed on the screen by the "crawl" technique. Also, occasional presentations of captioned movies over the air are anticipated.³⁴

The Illinois Association of the Deaf TV Committee has been working as a member of the COSD, and its attempts in Illinois for favorable publicity toward television viewing needs of the deaf have been closely oriented with the goals set by COSD.³⁵

A source for obtaining documents on new curriculums, media, and teaching methods as they are being designed and developed in classrooms and laboratories all over the country is the Educational Resources Information Center (ERIC).

It is a national information system under the direction of the Department of Health, Education, and Welfare's Office of Education, Research Bureau, with a network of decentralized information centers, or clearinghouses. These centers gather and disseminate information on education, supply copies of educational documents at nominal cost, and prepare research reviews and bibliographies on various critical topics in education.

³⁴Letter from Mr. Joseph Wiedenmayer, Chairman, COSD TV Committee, Washington, D. C., December 19, 1969.

³⁵Letter from Mr. Robert R. Anderson, Chairman, Illinois Association of the Deaf TV Committee, Jacksonville, Illinois, December 19, 1969.

Each clearinghouse is responsible for a particular educational area, and sends out bulletins, bibliographies, research reviews, newsletters, and interpretive studies on educational subjects.

The Council for Exceptional Children, in Arlington, Virginia is one of the member clearinghouses which disseminates information related to the education of children and youth who require special services, including the deaf and hard of hearing.

A clearinghouse which has dealt with the use of television in deaf education is Educational Media and Technology, Stanford University, Stanford, California.³⁶

Entering into its final planning phase, the National Center for Educational Media and Materials for the Handicapped, is trying to indicate the need to coordinate many groups utilizing media for education of the disadvantaged to provide an information-exchange on production and distribution of materials, and construct a Development Center for extending educational and training innovations.

Three proposed functions of the NCEMMH, which will devote at least a portion of their time to the use of television in deaf education are: Research and Development, Service Model Secondary School for the Deaf (Gallaudet College), and Communication and Information. The first, will

³⁶Letter from Miss Wanda Wetterling, Information Analyst, Office of The Council for Exceptional Children, Arlington, Virginia, April 1, 1970.

carry out research to analyze the state of media research for learners with disabilities; name areas in which research voids exist; develop promising research efforts; and translate research-based knowledge in media utilization for the disadvantaged to a form useful for classroom teachers.

A second function hopes to complement the Center and Service Model Secondary School. The School provides a laboratory for needs assessment and development of materials; the Center will take development and production of more sophisticated materials and provide specialized training, facilities, equipment, and consultant help.

The third area will attempt determination for a network or switching center, including a public relations function, and information services with films, video tapes, and cassettes. The possibility also exists for NCEMMH to operate its own network and lease microwave and teletype facilities.

In summary, the National Center would build upon information from various clearinghouses and other information-spreading activities, to produce test and demonstration models for use of media and materials. The final report of this Planning Project, which was authorized by a 91st Congress Bill, will be submitted by June 30, 1970.³⁷

³⁷Letter and news bulletin "Focus . . . Feedback", from Dr. Gabriel Ofiesch, Director of Planning Staff, Center for Educational Technology, Washington, D. C., March 27, 1970.

In Michigan, federally funded Title III programs, PACE (Projects to Advance Creativity in Education), of the Elementary and Secondary Education Act, are regionally classified and published in a PACE in Michigan booklet and distributed by the Statewide Dissemination Service (STADIS). The service was established to identify and spread the word about outstanding and innovative programs in Michigan to public and non-public school educators. Any reported projects utilizing television in deaf education are listed.³⁸

The Instructional Media Center, Michigan State University, East Lansing, is participating in a television project for the deaf that is currently in developmental stages. The plan calls for a joint effort and the resources of the Michigan School for the Deaf, United States Department of Vocational Rehabilitation, a Community Antenna Television Company, Delta College near Flint, Michigan, and the Instructional Media Center. The project will invite a selected group of deaf adults and their children to visit the Michigan School for the Deaf auditorium to see nightly showings of various television programs, both those of special interest to the deaf and those seen regularly on commercial stations.

The programs will be transmitted by Community Antenna Television facilities with hook-ups from several local and

³⁸Letter from Dr. Leonard S. Demak, Coordinator, Statewide Dissemination Service, Wayne, Michigan, November 28, 1969.

national network studios. Programs will be contributed during prime viewing time from any of twelve potential channels and include such fare as news, weather, sports, and popular commercial programs, all treated with captioning and/or interpreting. The project will attempt to test the popularity and feasibility of installing a Community Antenna Television receiver system in homes of Flint, Michigan area deaf persons, with program adaptations meeting unique communication requirements.³⁹

The Instructional Materials Center for Special Education, University of Southern California, Los Angeles has copies of a deaf and hard of hearing bibliography compiled by Keren McIntyre, which includes professional texts and research on instructional media, library media centers, 8 mm film loops, programmed instruction, and systems application. The Center services California, Arizona, and Nevada.⁴⁰

Teacher self-evaluation with video tape is a fundamental activity of the EPIC Evaluation Center in Tucson, Arizona. Video tapes provide a systematic method for observing, recording, and analyzing teaching behavior. The teacher can evaluate by: self-assessment and supervisor observation, achievement of cognitive and affective objectives, methodology

³⁹Interview with Mr. Archie Watson, Media Specialist, Instructional Media Center, Michigan State University, East Lansing, Michigan, June 23, 1970.

⁴⁰Letter from Jackie O'Connor, Assistant Librarian, University of Southern California, Los Angeles, California, April 27, 1970.

employed, and expressions used in interaction with students at ten-second intervals.⁴¹

"Speech Through Vision" is a federal project which seeks to develop video techniques and video systems for use by average classroom teachers and speech therapists. The primary objective is to investigate the potential of low-cost video taping for teaching speech to hearing and non-hearing students. The video tape recorder was not considered as a medium, but rather as a tool. Project Director, Ralph S. White said: "We can teach 'with' television . . . not just 'by way of' television." A systems design which will enable the teacher to operate equipment more smoothly, blending its use into regular classroom activities is one goal of the Project. Techniques under study include synchronizing pre-recorded tapes to "live" cameras, a remote control unit for the video tape recorder, allowing the teacher to control recorder functions from his normal teaching position, and a sound-proof cabinet which enables the teacher to dial a system function. For example, he may choose to record a program off-the-air for playback at another time. Camera and monitor can be used by themselves, without the recorder, or the recorder can be switched into the system. Other techniques include: audio from the video tape recorder feeding directly into the classroom group hearing aid during playback, cameras that have

⁴¹Letter from Dr. Robert E. Stepp, Director, Midwest Regional Media Center for the Deaf, Lincoln, Nebraska, April 5, 1970.

attached microphone booms, allowing sound to follow the picture, and a reverse viewfinder, which when pointing forward, allows any student in the group to look at himself as he is being recorded.⁴²

Regional Centers

Media Services and Captioned Films (MSCF), formerly Captioned Films for the Deaf, was established by an Act of Congress in 1958. The initial purpose was to provide the deaf with captioned films, analogous to recordings, braille books and other material for the blind. A revision of the federal law in 1965 enabled MSCF to expand its services and the agency now provides instructional services and materials of all kinds for deaf and hard of hearing youngsters.

Dividing the United States on a regional basis, four Regional Media Centers have been established to: design, adapt, produce, and evaluate instructional materials for use by deaf students in and out of the classroom and to develop media competencies in teachers of the hearing handicapped. In the federal hierarchical structure, MSCF is responsible to the Division of Educational Services, a component of the Bureau of Education for the Handicapped which in turn answers to the United States Office of Education in the Department of Health, Education and Welfare.

⁴²Letter from Mr. Ralph S. White, Director of Audio-Visual Media, Clarke School for the Deaf, Northhampton, Massachusetts, February 10, 1970.

The Regional Centers are called Northeast (University of Massachusetts, Amherst, Massachusetts), Midwest (University of Nebraska, Lincoln, Nebraska), Southern (University of Tennessee, Knoxville, Tennessee), and Southwest (New Mexico State University, Las Cruces, New Mexico). The Midwest and Southern branches have dealt most directly with the uses of television in deaf education, while cooperating in many endeavors.

Current research and educational innovations were organized into symposia to inform administrators of trends educational media were following. Conducted at Lincoln, Nebraska and organized by the Midwest Regional Media Center for the Deaf, the last symposium was of special significance to television's application and research. It was entitled "Communicative Television for the Deaf Student" (March, 1970).

The Southern Regional Media Center staff has taken the responsibility of obtaining sufficient television equipment to produce captioned video tapes for field testing, and has published two of the few documents emerging on television for the deaf. Called Summary Reports, they compiled information on "Implications for the Use of Television in Schools for the Deaf" (1968) and "Video Technology in Schools for the Deaf" (1969). These reports were first set in gear by the interest elicited by a February, 1968 report entitled "Suggestions and Guidelines for the Development of Television Facilities in Schools for the Deaf." Its purpose was to

overcome the "general lack of understanding of television's potentialities for the education of hearing impaired students."⁴³ The report explains television terms and describes components for classroom, campus, regional, and national network systems of broadcasting.

Since September of 1966, the Midwest Center has also conducted nine major institutes and seventeen in-service workshops. Major objectives were to prepare teachers to become media specialists in their own schools and practiced in media utilization for their own teaching. During the Summer Educational Media Institute for Teachers of the Deaf, teachers learn to use all forms of media and to produce materials pertinent to these media, while earning six hours of graduate credit. The Educational Media Institute for College Educators Who Prepare Teachers of the Deaf, takes a group of select educators in seminar to develop a leadership nucleus for bringing changes to teacher education programs. They are acquainted with the latest forms of educational media and technology, how to use them in the courses they teach, and to learn what skills teachers in training should have in design, production, and utilization of media before graduation.

⁴³E. J. Goforth and W. D. Jackson, Suggestions and Guidelines for the Development of Television Facilities in Schools for the Deaf, Southern Regional Media Center for the Deaf, The University of Tennessee, Knoxville, p. 1.

The MRMCD also conducts "on-the-road" workshops as part of the Regional In-Service Education Program offered to schools in its region. Each session is developed so that participants can actively engage in designing and producing their own instructional materials.

The latest project is open only to selected participants and is called an Educational Media Institute for Supervising Teachers in Schools for the Deaf. The new institute will try to bridge the "media gap" between administrators and classroom teachers.⁴⁴

⁴⁴Letter from Dr. Robert E. Stepp, Director, Midwest Regional Media Center for the Deaf, Lincoln, Nebraska, March 28, 1970.

CHAPTER III

TELEVISION AND TEACHERS OF THE DEAF

Audio-visual technology gives the instructor of the deaf a means for extending a variety of experiences. It makes possible a broader range of sensory stimuli to gain, for both student and teacher, a more inclusive educational experience. A greater understanding of the complexities of learning along with how and why sound educational methods of teaching the deaf should be applied has been realized to some extent in the past few years. Today there are more hearing impaired students to educate than ever before, and there will be a continuous increase in their numbers because of recent Rubella epidemics which invariably result in the birth of many deaf or hard of hearing babies. Consequently, there is a critical requirement for additional sources, that is, new media which enhance clarity of communication and speed comprehension for pupils with hearing dysfunctions. Television electronic equipment (the hardware) and the materials used on it and with it (the software) have found some positive application in the education of the deaf.

Dr. Donald Perrin of the University of Southern California describes the responsibility of educators of the

deaf in this way:

Under favorable circumstances we have about ten thousand hours to develop a deaf child into a functional and productive citizen. He must learn language and communication skills, social skills, and vocational skills in a period of about ten years. All he has against him is that he starts four or five years behind in his development of language skills, lacks the primary sense for receiving outside communication, and must be capable of getting along in a world of hearing people.¹

An area of current controversy in schools for the deaf involves which method of communication is best and should be employed by teachers. Teachers of the deaf use specific methods of "talking" to their students. One of these, "signing" is a manual language in which the fingers are shaped to approximate configurations of individual letters and numbers. A competent signer is able to finger spell so quickly that entire sentences are transmitted within seconds. Supplementing these symbols and used along with them are a series of manual-body gestures, each of which corresponds to a particular word or concept. Raymond Wyman, Audio-visual specialist at the University of Massachusetts, wrote that "approximately five thousand words in the English language can be translated into this pantomime idiom."²

An alternate technique for oral communication is speech-reading, which a number of schools for the deaf advocate as

¹Donald Perrin, "Ten Thousand Hours," American Annals of the Deaf, 113 (November, 1968), p. 1107.

²Raymond Wyman, as quoted by Saul Scher in "The Deaf: New Audience for TV," Audio-Visual Instruction (January, 1967), p. 48. (Reprint)

the single, most desirable approach. This method calls for deaf students to learn to "read" the instructor's lips as he formulates various speech sounds during a lesson, just as teachers in general education would speak to their classes. The desired development is to move the deaf student away from manual symbols used in the vocabulary of his sub-culture and urge him to use his eyes for picking up visual cues from the face of the speaker. An important adjunct to the oral school of thought places a heavy emphasis on teaching the deaf student to manufacture his own vocal expressions, hopefully intelligible to hearing persons.

Still other institutions use a combination of signing and speechreading simultaneously, one reinforcing the other. A debate over the merits and weaknesses of each method is pointless in this thesis. All three systems stress the use of concentrated vision on the student's part and meaningful motion by the teacher. Television's promise as a conveyance medium for the deaf educator's message lies in the utilization of visible action, perhaps more powerfully than any other audio-visual mechanism.

Silverman et al., in their book Hearing and Deafness stated:

Deaf children are usually found to be retarded by two or more years in educational achievement. . . . [These] scores are influenced by the age at which a deaf child enters schools, the amount of recreational reading, the amount and use of residual hearing, and opportunities for problem solving.³

³S. R. Silverman, H. S. Lane and D. G. Doehring, "Deaf Children," in Hearing and Deafness (Chicago: Holt, Rinehart and Winston, Inc., 1963), p. 427.

These four factors are basic to a deaf student's comprehension and ability to communicate within his environment. The "how" of getting a learning message across is the key to successful teaching and it is a teacher's ingenuity that will make verbal concepts real and meaningful as they approach ears that do not hear. Competent instructors of hearing impaired youngsters use many visual means to teach ideas. They often use non-verbal referents that deaf students develop outside the formal learning environment, and associate them to a hearing society's language form. For many classroom notions, the teacher of the deaf can construct modifications and improvements, as well as new techniques, when television is used as a supplementary instrument.

Communication Principles for Teaching the Deaf with Studio Television

Traditionally, the most conventional teaching technique for students without severe hearing impairment has been, and continues to be, "talking and telling."

Direct oral communication is a proven means of disseminating ideas but studies have shown that as much as 85% of learning comes through the visual sense. Charles Callaci, Vice President of Educational Services, Beverly Hills, California recently commented at the Symposium on Research and Utilization of Educational Media for Teaching the Deaf, that:

. . . today's youth, sensually bombarded from infancy and approaching adulthood having been visually innundated with television, psychedelic art, mod films,

comic books, stereophonic beats at great intensity; have been conditioned to require experiences of a more profound nature than simply listening to someone talk.⁴

Commercial television cartoons hold a child's attention through special treatment and content. Popular cartoon shows are packed with visual stimulation, vivid color, and seldom are static. Even adult drama shows and those commercials which leave a positive impression begin, and often end, with eye-catching gestures. Many previews of television shows and televised movies are laden with action to glamorize a forthcoming program. The effective television studio teacher of the deaf can utilize the same basic formula employed by successful television commercial producers and writers. Basically, it involves getting attention and obtaining the objective of the lesson quickly, concisely, and simply while "soaking" the message in arts which appeal to the senses and emotions, e.g., close-ups, colors, music, animation, magnification, and movement. Because they are educationally retarded, the deaf also benefit from numerous concept repetitions and reviews at different perspectives and angles. The end of the lesson need not be exaggerated, but rather should come with quickness and impact.

⁴Charles Callaci, "Basic Principles for Instructional Television," paper prepared for Symposium on Research and Utilization of Educational Media for Teaching the Deaf, Lincoln, Nebraska, March, 1970, p. 2.

"Sesame Street," from the Children's Television Workshop, is a television series aimed at preparing children for formal education by teaching them such things as numbers, letters, spatial and time relationships, and geometric shapes. Most hearing impaired students are scholastically in preparatory stages when compared with their normally hearing peers. The production principles of a television program like "Sesame Street" may hold academic value for teachers of the deaf. George Jayne, writing in the Family Weekly magazine quoted Dr. Edward Palmer, the Workshop's director of research:

The answers we're looking for don't come only from the way the children respond to systematic teaching but from what they indicate by their behavior while watching a segment. We watch as they watch. We can learn what they find most amusing, the ability of the children to understand certain transitions or plot lines, to anticipate upcoming events, and to detect the hidden motivations underlying the actions of the performers.⁵

Doctor Palmer went on to say what he thought particularly attracted the child viewer:

Primarily they want action; they want things to move. Nothing bores them so quickly as the sight of an adult facing them on the screen and just talking. They love commercials and, in fact, are already programmed to commercial interruption. Unlike adults, the more frequently they see a particular commercial and the more familiar the jingle or slogan becomes, the more they enjoy it.⁶

⁵George Jayne, "How to Produce an Exciting TV Show--Ask the Kids," Family Weekly (November 9, 1969), p. 12.

⁶Ibid.

Raymond Wyman, Professor and Director of the Audio-visual Center at the University of Massachusetts, in an article written for General Telephone and Electronics Company said:

Into a half-hour presentation the studio teacher can weave a demonstration incorporating graphics of relationships, film clips of a complex process, still photographs of historical characters, places and events, as well as comments and illustrations from a distant expert.⁷

Since this thesis is primarily directed toward educators who may already be conversant with instructional television techniques and lesson construction in general education, it is not this writer's intent to be repetitious by describing common testimony. Rather, it should be made clear that the author of the following rules, Mr. Charles Callaci, was addressing a large group of educators attending a conference for media research specific to education for the deaf. It is felt his comments were concise, lucid and particularly applicable to televised instructional programs for the deaf because they stressed components of visibility and simplicity.⁸

(1) Determine specific objectives. The word "specific" is important. If the teacher of the hearing impaired, for example, was teaching a sociology unit on current campus unrest, what specifically would he teach?--administrative

⁷Raymond Wyman, "ETV--A Loom for Presentations." Article written for Sylvania Commercial Electronics Division, Bedford, Massachusetts, 1970, p. 2.

⁸Callaci, op. cit., p. 4.

responsibilities of campus officials; roles of law enforcement personnel; radical student organizations; community involvement; political philosophies; or personal rights of dissent? Then, of course, each of these categories can be broken into sub-groupings, with many possibilities for examples, discussions, and assignments.

Robert Mager in his paperback, Preparing Objectives for Instruction, has suggested the most functional objective can be produced if it consists of three different parts. First, what is the learner expected to do? Second, what are the conditions attached to doing it? And third, to what level of accomplishment?⁹

In constructing instructional presentations it is important for the television teacher of the deaf to be able to specify behavioral objectives, because such an analysis contributes intelligible images of what that message must contain. What behaviors will the student be able to exhibit after the lesson to show that he has achieved objectives? Testing and evaluation are called for at this point. If television does not elicit the desired behavior should it have been used at all or how could it have been modified? If flaws exist, revision is necessary; revision to decrease student errors.

⁹Robert Mager, Preparing Instructional Objectives (Palo Alto, California: Fearon Publishers, 1962), p. 12.

(2) Select information--from the store of knowledge in a given curriculum, which can most easily and effectively be translated into television. For example, action verbs and nouns are more graphic and visually demonstrable than prepositions. Deaf students see people laughing, crying, in pain and joy, acting and re-acting, and objects moving, rolling, pushing, and pulling with an experience of greater dimension than words such as "of", "for", and "in".

(3) Consider the medium--when selecting concepts to be presented--a kind of matching process. Obviously, black and white television, is not an appropriate vehicle to exhibit and analyze the primary color chart in an art lesson. However, color movies, film strips, still pictures, slides and color television, if available, would certainly be suitable. Just as live-on-camera or video tape lessons of motor skill drills in physical education would have more impact than slides or overhead projections.

(4) List ideas to be developed--to meet the specific objective as stated. Teachers with thorough, well-organized lesson plans already have the groundwork, minus television adaptation.

Benjamin Bloom in an essay entitled Learning for Mastery suggests that 90% of the pupils in a defined audience should be able to master what is taught, if they are given the time.¹⁰

¹⁰Benjamin Bloom, "Learning for Mastery," Evaluation Comment, Center for the Study of Evaluation of Instructional Programs, University of California at Los Angeles, I (May 2, 1968), p. 76.

He gathered this opinion from a definition of aptitude that said aptitude should not be defined as the level to which the learner can climb in unit time, but rather the time required for the learner to reach unit level of accomplishment. His idea is programmed instruction oriented. If carefully constructed steps are used, any televised instructional message becomes, in essence, a program.

(5) Develop ideas--by establishing supporting facts and by providing examples and materials to illustrate. Among the many types of supporting aids suitable for television are: still pictures, film, slides, models, exhibits, film strips and clips, pantomime, magnet boards, graphs, charts, projects, dramatizations, flannel and magnet boards, audio tape recordings, sound effects and articulation records, adult and child guests, and so on.

Justify the use of illustrative material from an instructional or informational point of view, before it is to be included in a lesson. Questions to consider are: will it point up, magnify, highlight, enlarge, add another dimension, or bring impact to the important concept? Unless the supporting aid meets these justifications it can become a distraction, an intrusion upon content, a device of ambiguity, or merely a televised lecture with added pictures.

(6) Relate learning concepts to one another.--The alert teacher of the deaf gains a positive impression by impromptu comments about various visual messages as they not only

relate to one another, but to other subjects and outside-class social situations.

(7) Develop methods of presentation.--A particular instructional program calls for treatment using examples, materials, and aids which will punctuate, emphasize and highlight the important concepts. For example, an audience of senior high pupils with auditory disadvantages might best absorb lesson messages in history class from documentaries, pantomime, or even dance, if they happened to be studying ethnic behavior of a foreign people. Younger deaf pupils often find animated cartoons, puppetry, comedy, outside guests, or class-produced skits to be effective vehicles.

In determining what television treatment to use, the teacher of the deaf has at least two considerations:

a) Limitations of the facilities, equipment and personnel in carrying out the style or treatment desired. b) The level of experience, degree of hearing loss, and comprehension of the viewer, as well as other individual limitations, if any. Class assignments are made according to individual, not group competence.

If, for example, the choice of treatment was a documentary format to be supplemented with captions, the following principles of narration apply: a) Captions supplement pictures. If pictures are not the main source of information, reconsider their use. b) What is obvious to the deaf needs no captioning; caption when visual alone does not suffice.

Captions add further interest to the pictures, should be specific, direct, expressed simply, and help explain and even interpret what is being seen. The choice of words used in captions can alter visual meaning.

(8) Preparation of a study guide--for immediate related classroom or individual instruction. A television guidesheet helps the classroom teacher make the total lesson an effective instructional experience. Mr. Callaci suggested that it include such items as pre-lesson planning, the telelesson presentation and post-lesson activities.

To recapitulate, an effective studio television lesson for students with hearing disorders would contain the following elements: 1) specific behavioral objectives; 2) specially selected and adaptable subject information; 3) matched media; 4) fully developed lesson plans; 5) interrelated concepts; 6) appropriate presentation methods and supporting aids, and 7) a complete classroom guidesheet.

The Classroom Television Teacher of the Deaf

In Mr. Callaci's proposed guidesheet, a television lesson is generally described in terms of purpose and content to demonstrate what the studio teacher hopes to accomplish in the lesson.

(1) A presentation portion--foretells the method a studio teacher will use to translate concepts into concrete life situations. The classroom teacher is informed in advance of

basic learning concepts, vocabulary to be introduced and skills to be mastered. A guidesheet will also help him see the relationship between the television lesson and related classroom or individual teaching. Suggested related materials to be used during the telecast, if any, are listed in a classroom preparation section. New vocabulary items are considered so that words can be introduced, studied, and analyzed before the television lesson begins.

(2) Pre-lesson activities--are designed to introduce students to program content and give more meaning to the television presentation. At this time the classroom teacher of the deaf formulates general questions about subject material that will be televised, gives them to the class, and subsequently probes for their solutions as they gradually emerge from the electronic lesson.

(3) Related or follow-up classroom suggestions--are designed to strengthen, supplement and extend skills, knowledge, and attitudes that the studio teacher has attempted to develop according to previously agreed upon curriculum goals. The actual extension of learned skills is perhaps the key item in this area, because young deaf people must eventually attempt integration into the hearing world if they are to fulfill citizenship duties as husbands and wives, fathers and mothers, friends, church and club members, taxpayers, voters, producers and consumers of societal goods. They will be called upon to successfully function in a competitive

environment. The classroom television teacher of the deaf points out at every possible juncture, the relation of what is being seen and done in class to past, present, and future experiences and responsibilities. With older deaf children, those experiences might include television treatments of: academic activities at Gallaudet College, the national college for the deaf, in Washington, D. C.; how hearing impaired persons function as blue and white collar workers in industry; deaf teachers--how they became educators and what special problems they encounter in their work; social situations with hearing people (group conversations, athletics, telephone usage, store shopping and buying, dances for young people, dating, child care, transportation conveyances, and so on); and finally, demonstration of mechanical items industry has been able to create to ease the burden of deafness. These activities have special value and meaning for the deaf.

Perhaps the single most important fact taken from what has been said in the preceding paragraphs indicates that television, as any other teaching resource, is effective if the classroom teacher has prepared the deaf student for viewing and reinforces the studio teacher's ideas.

Open-channels should exist between classroom and studio teachers both for pre-lesson consultation and for exploring thoughts as they might spontaneously occur. A student progress evaluation, measured by academic performance before

and after televised lessons is necessary and can be cooperatively constructed.

Teacher Uses of Television in Classrooms
for the Deaf

A few schools for the deaf have sophisticated television systems, but often have little innovative utilization. As Merlyn Herrick, one of the speakers at the 1969 Workshop on Video Technology in Schools for the Deaf, said:

You can bring in a boy off the street and train him to operate a camera or a video tape recorder. What is sorely needed, is people who can see beyond the chrome and use these machines to best advantage in helping learners to achieve the goals of education.¹¹

Classrooms often serve as production "studios" if professional facilities are found to be unavailable or too costly. More and more schools for the deaf are converting their classrooms into a poor man's studio. Technical control of camera angles, lighting, and sound is being sacrificed to gain inexpensive, but instructionally adequate conditions. Of value to both teachers and students are locally produced materials, such as demonstrations, plays, discussions, and candid video tape recordings, in which the whole class participates in production and performance.

¹¹Merlyn Herrick, "Strategies for Innovation: Development of Appropriate Objectives," address delivered at the Workshop on Video Technology and Programs for the Deaf: Current Developments and Plans for the Future (Knoxville, Tennessee, February, 1969), p. 25.

One of the more interesting applications of television in the classroom is labeled "the nonproduction-production" by Dr. Floyd Urbach, Assistant Professor of Secondary Education, University of Nebraska, Lincoln.¹²

In this function, a video tape recorder serves as a storage vault which can be tapped at will. A program is produced in the classroom by the teacher and/or students, and is designed for immediate erasure after re-play. The key to learning here, according to Dr. Urbach, is the motivation resulting from total involvement in the production and viewing of the instructional episode. It has been used with outstanding success at the Arkansas School for the Deaf and in the "Speech Through Vision" project at the Clarke School for the Deaf, Northampton, Massachusetts. It is very close to the microteaching concept of "teach-critique-reteach" currently being widely adopted for preservice and inservice teacher training in general education.

Another common use of video tape recorders in a television classroom for the deaf is to tape broadcast programs off-the-air or to transmit programs through a closed-circuit system. This approach is limited to replaying programs which provide content for a particular lesson in the class, or have been developed for mass distribution of a common

¹²Floyd Urbach, "Resume," Summary prepared for the Workshop on Video Technology and Programs for the Deaf: Current Developments and Plans for the Future (Knoxville, Tennessee, February, 1969), p. 68.

curriculum or supplementary set of materials. Programs from, for example, local and state educational television systems, or national television libraries.

Television in a classroom for the deaf is an important instrument for fundamental instruction in oral speech, speech-reading, and in overcoming distractive gestures and facial grimaces. Video tape can be an extremely accurate and sometimes harsh record of a student's performance. A perceptive teacher of the deaf uses it tastefully, with good purpose, and in a manner not damaging to self-image or peer esteem. The psychological impact of live camera or video taped recordings in deaf education is unknown, because in-depth studies of this nature have not yet been undertaken. Studies have indicated practically all students, when watching themselves on television experience increased interest and attention span.

Another in-class capability of television is enlargement. Difficult to see instructional tasks are made up by the teacher or technical staff, allowing the whole class to view a small visual that would take hours for a graphic artist to reproduce or enlarge. Complex three-dimensional objects, presented on a two-dimensional screen, can be seen by all students in subjects such as science, math, mechanical drawing, shop, and industrial arts class demonstrations.

Attributes of a Television Teacher of the Deaf

Preceding portions of this chapter have focused on a discussion dealing with the teacher in deaf education as a tactician in front of television cameras; as a manipulator of television messages within the classroom.

Regardless of what mechanical advantages a teacher is given inside and outside a classroom composed of deaf and hard of hearing students, he remains an individual, an affective personality. There are certain behavior patterns that time and experience have shown to be of distinct advantage for teachers of the deaf using television in their efforts to gain an optimum learning environment.

A thorough understanding of deafness as a unique learning disability is essential background knowledge for successful teaching with television.

Frequently the deaf are referred to as "deaf-mutes" or as the "deaf and dumb." Both of these terms are incorrect. The word "mute" means unable to make vocal sounds. Because one is deaf does not mean that he has no vocal cords. Since the vocal cords are vital in sound production, a deaf person is not mute; he can cry, laugh and even scream. Many deaf persons can speak. The term "dumb" too frequently implies stupidity, which is not true of the group. Deaf people are burdened with a physical deprivation.

In an article on testing cognitive ability for the deaf it was concluded that

. . . cognitive ability is not inferior if the right type of psychological test, such as the Queensland Test, is used in the assessment of such ability. There is every reason to believe cognitive ability of the deaf is somehow different to that of the hearing.¹

This statement emphasizes the professional conclusion that the thinking ability of the deaf was thought to be different, but not necessarily subordinate to that of hearing persons.

C. I. Hovland, writing in Communication and Persuasion stated:

. . . it has been found that the perceived prestige of the source significantly affects the amount of attitude change. The higher the perceived prestige, trustworthiness, or expertness of the communicator, the greater the attitude change toward the position advocated in the message.²

There are certain characteristics that the effective teacher of the deaf ideally displays when working with television in the classroom or in the studio.

(1) Natural speech--in a normal and audible voice.

Exaggerated enunciation and unnatural mannerism cause annoyances. In some types of deafness, low tones are heard so well and high tones so poorly that loudness leads to confusion because sounds are distorted--vowel sounds being amplified more in proportion than most consonants. Many partly

¹"A New Performance Scale of Cognitive Capacity for Use With Deaf Subjects," American Annals of the Deaf, 114 (January, 1969), p. 2.

²C. I. Hovland, Article in Communication and Persuasion, (New Haven, Connecticut: Yale University Press, 1954), p. 157.

deaf persons are supersensitive to loud sounds.

(2) Distinct articulation. A British audiologist, C. E. Groom, explained this point in Medical News, London, when he said:

The whole art of speaking to the deaf is to remember there is usually a loss of clarity rather than a mere loss of volume reception. You will help enormously by speaking slightly more loudly and more slowly and clearly, separating your words to overcome his scrambling of sounds.³

(3) Rapport--having a perception of the demands made on a speechreader through mirror study or video tape viewing of their own lip movements and formulation of manual communication symbols. A teacher of the deaf, with self-evaluation can discover some of his own undesirable mannerisms, for example, head bobbing, excessive hand gestures, stilted speech and language, or high pitch and nasality. The deaf are sensitive to feelings expressed by facial movements. Hard, critical, angry or impatient expressions are reflected that way.

Mary Nocera, in 1967, conducted a study at Michigan State University which attempted to define important factors for utilizing television in elementary school curricula. She quoted Clifford Erickson, Executive Dean, Chicago City Junior College for a description of rapport which would have significance for all television teachers. He said:

³C. E. Groom, "How to Talk to the Partly Deaf," Article appearing in American Medical Association Publication, Geriatric Times (March, 1970), p. 12.

. . . a subtle quality, not easily defined but which has a profound effect on the effectiveness of the television teaching. Perhaps it is an indefinable human warmth, the subtle communication to the student of an interest in him, in his thought processes and his progress. This human quality helps enrich the meanings of words. It instills confidence in the student. It inspires an interest in the subject. Like religious faith, it defies definition, but its presence or absence is known.⁴

(4) Pleasant Appearance and Personality.

(5) Tasteful Sense of Humor.

(6) Appropriate Terminology. Correct wordage applied for balanced group comprehension will reward the teacher of the deaf with his students being less apt to bluff understanding. This writer found the point to be particularly true in his practice teaching assignment, where most of the pupils were severely deficient in hearing or were totally deaf. They were faced with a difficult situation when trying to decipher lip movements on a new face and were most eager to feign comprehension.

(7) Avoids needless repetition. A word or phrase that isn't understood demands a synonym or substitution. For example, "Are you going out?" to "What are you going to do?" to "Where are you going?" and then back to the first question until comprehension is gained.

(8) Patience--aural disadvantages often cause mental, physical and nervous strain that hearing people cannot

⁴Mary Elizabeth Nocera, "Factors To Consider When Developing or Selecting Televised Music Instruction for Elementary Schools," Unpublished Master's thesis, Michigan State University, 1967, pp. 37-38.

totally perceive.

(9) In sum, being tactful, understanding, enthusiastic, and personable, just as any teacher in general education would strive to be, while directing activities in the learning environment as a friend.

Shurtz, in his study, pointed out several positive teacher characteristics for successfully teaching the deaf with studio television. They included: 1) Warm, understanding personality; 2) Ability to improvise and detect potential or real points of confusion; 3) Ability to coordinate his speech with an interpreter's signs; 4) Understanding the import of pacing by practicing program material beforehand with the interpreter; 5) Some personal knowledge of sign language; 6) If possible, have a prominent and expressive mouth, and 7) Willingness to adjust to the television station staff. Conform his own ideas to limitations of time, space, equipment, and habits of the director and his crew.⁵

That conformity is obtained much easier if the television teacher can accommodate a basic technical knowledge of the medium. It includes:

1. Knowledge of Studio Techniques

a) Lighting--proper lighting arrangement is important. Shadows or irritating brightness are distracting for deaf viewers. The use of dark clothing against a dark background

⁵Richard R. Shurtz, "A Study of the Feasibility of Using Television to Teach Child Psychology to the Acoustically Handicapped." Final Report (Fayetteville, Arkansas University, 1968), pp. 17-18.

helps to highlight hands and face. Flat, evenly diffused base light, possibly supplemented by special fill light is often indicated for focus on individual performers.

b) Camera--ability to teach to a camera. Direct eye contact with the "take" lens. In Shurtz's study, it was concluded that the camera, because it emphasizes the plane or point opposite the lens, should be "boomed" as high as the object it was dwelling upon, for example, the same height as an interpreter's hands or lips. Furthermore, regarding studio lighting: "the hands should be highlighted with a greater brilliance factor than the face. For greater mouth emphasis, a slight shadow should be used under the mouth."⁶

c) Monitors--for obtaining feedback on manner of presentation and for pre-show practice.

d) Set Background--asymmetrical designs are least distracting and aid in establishing a favorable speechreading environment.

e) Shot Sequences--pre-planning between the studio director and the teacher is necessary for establishing correct blocking, lighting and set design in relation to proposed distance and angle of camera shot sequences. These may vary with the individual instructor or supplementary aid.

The preceding points give only a cursory examination of important television studio procedures. A highly informative and comprehensive text dealing with many of these

⁶Ibid.

factors, including cameras, graphic materials, studio effects, make-up, and lighting is Techniques Of Television Production by Rudy Bretz.

In a study which began in June, 1965, Dean Cunningham, Administrative Assistant at the Texas School for the Deaf, tried to discover new modifications and testing methods on overhead projector transparencies.⁷ An interesting sidelight of this study was that a highly significant difference in achievement between students taught by different teachers was discovered. Some teachers were simply more effective in teaching the deaf student. This conclusion illuminates an old but important question: What is the difference between effective and non-effective teaching? A follow-up study showed it was not explainable on the basis of training, experience, or the student's degree of hearing loss. Perhaps the elusive answer lies at least partly in the teacher's personality and attitude; and the way he practices the desirable behavior characteristics just delineated.

In the final analysis, the concerned teacher of the deaf deliberately and consciously works at the task of positive personality development and personality change within his students. His own behavior reflects the goals of that work.

⁷Cunningham, op. cit., p. 171.

Television Training Programs for Teachers
of the Deaf

A few schools for the deaf have television equipment installed in diverse ways for use in teacher education. Some are private, others public residential, and the rest are public day schools. Sparce in number, they nevertheless indicate a trend reflecting that television is gradually finding a valued place in training programs for prospective teachers of the deaf. Miss Frances Brooke compiled a chart of fifteen schools for the deaf showing various television utilizations, three of which have significance in this chapter. In 1969, those schools for the deaf employing television for:

1) Teacher Self-Evaluation by Student and Veteran Teachers--were the state schools of Arkansas, Colorado, and Kansas, along with the Lexington School and the Callier Speech and Hearing Center. 2) Teacher Training--Central Institute for the Deaf, Clarke School for the Deaf, Colorado, Kansas, and New Mexico state schools, and the National Technical Institute for the Deaf.¹

Currently active television training programs for teachers of the deaf will now be discussed in greater detail.

Teachers of the deaf have been using video tape equipment at the Callier Hearing and Speech Center in Dallas, Texas to: 1) provide a means of self-evaluation for the

¹Frances E. Brooke, "Television Recordings As Integral Parts of Language Development Lessons for the Hearing Impaired," Unpublished Master's Thesis, University of Hawaii, 1969, p. 50.

teacher as he views his actual performance in the classroom; 2) give substitute teachers an idea of what goes on in the classroom and to serve as an introduction to the pupils with whom they will be working; 3) prepare in advance for classroom activities in the case of pre-planned absence of the regular teacher, and 4) give student teachers an overall view of the Center's operations and the opportunity to work with equipment new to their experience.²

Mr. Robert Lennan, supervisor of the Multi-Handicapped Unit of the California School for the Deaf at Riverside, has been working with video tape as a medium for objective assessment of student behavior before and after a teaching strategy for positive change has been implemented. Given an individual or group of pupils with behavioral problems, the teacher identifies and selects the most serious, identifies environmental reinforcers, determines an appropriate strategy for modifying behavior, carries out that strategy, and finally evaluates the effectiveness of the strategy. Video taping permits time samples of behavior before and after treatment acting as an indicator of effectiveness. As a diagnostic device video tape is a learning tool that is suited for independent and group study. Students have the opportunity to view and re-view specific tapes for different

²Charlie Thompson, "Applications and Demonstrations--Callier Hearing and Speech Center," Summary Report--Video Technology in Schools for the Deaf, Southern Regional Media Center for the Deaf, Knoxville, Tennessee, 1969, p. 45.

purposes. Instructors can use tapes in large group situations for emphasis and reinforcement. Video tape permits maximum flexibility in filming, provides immediate playback, facilitates comprehensive viewing with special effects generator attachments, and allows for immediate, on-the-spot editing.³

Television has become quite popular with teachers at the Kansas School for the Deaf. Deaf teachers have a service operating for them, in which one of the school's two closed-circuit channels functions as a bulletin board notifying system. Meetings, special instructions, announcements, messages, and station schedules are regularly flashed on the screen. Teachers are presenting teacher-designed programs, which have been planned, developed, and set by some of the older children. Other teachers were able to use a special taping of a National Theatre of the Deaf program for various purposes in their classrooms. Pre-service and in-service teacher training activities have included a series of video tapes of experienced teachers doing sensitivity training. Video taping has also been performed for Kansas University, by "shooting" their student teachers at work.⁴

³Robert K. Lennan, "Behavioral Analysis," Paper presented at Sixth Symposium on Research and Utilization of Educational Media for Teaching the Deaf, Lincoln, Nebraska, March, 1970, p. 3.

⁴E. Kendall Hanks, "Applications and Demonstrations--Kansas School for the Deaf," Summary Report--Video Technology in Schools for the Deaf, Southern Regional Media Center for the Deaf, Knoxville, Tennessee, 1969, pp. 54-56.

Sister James Lorene, Director of Deaf Education Programs, Fontbanne College, St. Louis, Missouri designs instructional units for student teachers using video tapes in a manner that indicates how tapes affect the student, the student teacher, and instructional objectives.

Student teachers were expected to operate all equipment efficiently and effectively in producing the video tape, practice all shots prior to actual filming, and explain specific technical problems involved in video taping difficult segments of the lesson so that the demonstrating teacher and children would understand the need for adapting the lesson to video taping purposes. They were to produce a video tape with an introduction, demonstrations, and a closing, and use special effects when deemed appropriate.

Sister Lorene found that student teachers have learned, with varying degrees of proficiency, what was expected of them. The fringe, and sometimes unexpected benefits of the projects, included an indication of the success of a teamwork approach as opposed to a more competitive approach to learning, the hours spent in practicing, planning, taping and evaluating resulted in a greater understanding of the need for personal discipline, identification and appreciation of both individual and team strengths, and developing group pride in a job well done.⁵

⁵Sister James Lorene, "Video tapes in Teacher Preparation," Paper presented at Sixth Symposium on Research and Utilization of Educational Media for Teaching the Deaf, Lincoln, Nebraska, March, 1970, p. 3.

A few student teachers of the deaf at Michigan State University have been video taped in the field by their area coordinator as part of their practice teaching assignment.

Instructional behaviors of individual student teachers are then shown and critiqued by the coordinator and other deaf education student teachers of that area in seminar meetings. Video tapes are erased and re-used as needed.⁶

Mrs. Vivian Stevenson, instructor in Michigan State University's teacher of the deaf training program, is using 16 mm films produced from the KERA-TV (Dallas, Texas) series entitled "Say It With Hands." She uses any portion of the series that might be of value to her students. Recent class time has been devoted to learning basic manual communication methods.

Mrs. Stevenson rates the "Say It With Hands" series as having good material but only adequate film quality. She has experienced management problems in film mailings and scheduling difficulties for reserving classroom space and equipment. Mrs. Stevenson concluded by stating she would be receptive to using any films or video tapes if instructionally cohesive with her lesson plans.⁷

⁶Interview with Mrs. Vivian Stevenson, Professor in Deaf Education, Michigan State University, East Lansing, Michigan, June 1, 1970.

⁷Ibid.

The primary purpose of Michigan State University's use of video tape in the Speech and Hearing Clinic is to train prospective teachers, clinicians, and therapists. Portable equipment includes a Cohu camera and Ampex recorder-playback unit. Therapy sessions are recorded in an effort to preserve the actions of the therapist and his case for a later personal evaluation. Video taping is currently being performed in this manner for clinicians working with pre-school deaf children, children with cerebral palsy, and those with various speech and/or hearing problems. A lipreading training tape has been completed.

The entire Clinic is wired for closed-circuit operation with a special room designed and devoted to video taping procedures. Cameras located in rooms throughout the building can be recording therapy sessions while remotely controlled from that taping room. Total equipment for this proposed usage of the system is not yet installed because of lack of funding. An electronics course is in the planning stage, with hopes of allowing graduate students in the department gain at least an elementary experience in the operation and application of technical equipment. A glance at the future does not immediately indicate instances where clinicians would operate their own television equipment as a therapy tool, especially for immediate reinforcement techniques, but the possibility is not being discarded.⁸

⁸Interview with Mr. Don Riggs, Chief Engineer, Audiology and Speech Science Building, Michigan State University, East Lansing, Michigan, June 2, 1970.

Student teachers at the Arkansas School for the Deaf can video tape their performances in the classroom, take it to a private viewing room, play it back, and criticize their own teaching without any expert opinion if they so desire. Veteran teachers can record their actions, carry on their own critique, and then erase the tape.⁹

⁹Al Simmons, "Applications and Demonstrations--Arkansas School for the Deaf," Summary Report--Video Technology in Schools for the Deaf, Southern Regional Media Center for the Deaf, Knoxville, Tennessee, 1969, p. 73.

CHAPTER IV

THE ADMINISTRATOR'S ROLE IN DEVELOPING TELEVISION SYSTEMS FOR SCHOOLS FOR THE DEAF

This chapter will explore basic considerations posed for deaf school administrators in the selection and utilization of television: (1) transmission and distribution systems, (2) staff and budget, and (3) software applications and hardware devices.

Transmission Systems

Although educational television broadcasting in schools for the deaf may be either open- or closed-circuit, depending on legal restrictions, type of installation, technical limitations, intended audience, cost and location, typically the public school or university administrator has chosen a system of closed-circuit nature. Closed-circuit television provides transmission of one or more programs simultaneously over a microwave network or cable, while the intended audience selects one of several possible channels.

Recent literature has revealed that school for the deaf administrators, like those in general education, consider

closed-circuit systems to be practical for campus-type institutions, which are common design among many state schools for the deaf. Some administrators are giving thought to installing master antenna systems connected by coaxial cables to their campus dormitories and other buildings. This approach allows for a flexible television conveyance which could later be enlarged and also provides the basis for computer systems and computer-assisted instruction if such methods were deemed economically and academically practical. Latest developments have indicated that portable video tape recording systems may hold favor over closed-circuit systems in the future.

Citing one factor; size of school and after looking at enrollment data reported in the 1969 Directory Issue of the American Annals of the Deaf, Mr. Charles Thompson at the 1970 symposium concluded that a great many "schools, classes and preschools are in the portable video tape recording system category and that only about 5% of the schools could and should be using closed-circuit systems."¹

Mr. Thompson emphasized that administrators should remember that each transmission system had its place in schools for the deaf, but after establishing capabilities according to local requirements they might end up including

¹Charles D. Thompson, "Instructional Television: The Closed Circuit System and The Portable Video Tape System," Paper presented at the Symposium on Research and Utilization of Educational Media for Teaching the Deaf, Lincoln, Nebraska, March, 1970, p. 2.

a selection of certain features of both closed-circuit television and portable video tape recording systems in their school. His school (Pilot School, Callier Hearing and Speech Center, Dallas, Texas) was committed to the portable video tape recording system, but other schools might install a closed-circuit television system for interpreting tasks, simultaneous captioning, and dormitory broadcasts, as well as some portable video tape recording units to meet other requirements.²

Mr. Thompson's concluding remark predicted that within ten years every classroom for the deaf would have a video tape recorder as a component of multi-media teaching. His paper also included a detailed equipment description of portable video tape recording systems and its supporting systems, with budget guidelines.

Distribution Systems

Combinations of television facilities capable of use in deaf education may be described in terms of the type of distribution chosen by administrators and level at which each is used.

The television systems that are discussed in this thesis have some common characteristics, and also reflect a few specific objectives related to each type of equipment as it is developed in schools for the deaf. Distribution systems

²Ibid., p. 10.

are referred to in relation to the classroom and campus of a typical school for the hearing impaired and were extracted from the text Suggestions and Guidelines for Development of Television Facilities in Schools for the Deaf.³

Extensive quotations were selected from pages 6-20 and pages 34-39. This writer found this text to be the only one of its kind dealing comprehensively with the subject of this chapter and felt it necessary to cite much of its data to accomplish the purposes of this section.

Classroom Television Systems

A classroom system in a school for the deaf consists of two cameras, a video tape recorder, a special effects generator, and a monitor large enough for classroom viewing. Equipment of this nature is valuable because it is designed for use by the non-technical person and incorporates such features as still-framing, erase, fast forward-reverse and re-record. Portability provides additional flexibility and capabilities whereby interpreting and captions can be added for the various reading comprehension levels of deaf students. Other types of instructional materials, for example, overhead projectors, film strips and slides, can be incorporated to produce a simultaneous format containing sound, motion, and color. Video tape recordings can be repeated, erased and

³E. Jack Goforth and William D. Jackson, Suggestions and Guidelines for Development of Television Facilities in Schools for the Deaf, Southern Regional Media Center for the Deaf, The University of Tennessee, Knoxville, 1968, 45 pp.

stopped at the discretion of the teacher.

Before investing in a classroom television system, administrators should investigate several disadvantages which include:

1. Necessity for typed or written captions on paper. Digital processors which type captions on the screen rather than on paper, can be used but are costly.

2. Quality of the video image is probably adequate for classroom instruction, but in many instances may not be equivalent to a regular broadcast television picture.

3. Brief picture distortions may occur because video tape equipment is not capable of stopping and recording without a temporary loss of synchronization in playback.

4. In relatively inexpensive video tape recorders, manufacturers do not recommend repeated tape splicing.

5. Possibility of being mis-led by an unreliable dealer or manufacturer's representative and the warranties and maintenance service they offer.

Campus-wide Television System

Campus-wide television systems in schools for the deaf are designed to supplement classroom instruction by making video taped productions available for playback on classroom recorders or by broadcasting one or several programs simultaneously to dormitories and classrooms. Broadcast programs may be recorded for later use if copyright law permits. Basically, this system has the same capabilities as the

classroom type, except that it has broadcast quality and the faculty for sending interpreted or captioned programs from all possible sources to any dormitory, classroom, or specified location on the campus when scheduled or requested. Ideally, the design of a campus system allows for optional recording of sports activities, assembly programs, and other events occurring on the campus. A well-equipped studio is desired to produce a variety of programs and to house captioning equipment and other related components.

The advantages of a classroom system as outlined previously would also apply to a campus system. Important additional advantages include:

1. Programs can be shown to the entire student population without requiring them to leave their rooms. This would overcome scheduling problems for gathering the entire student body to witness special events and announcements, and eliminate the problem of having children seated at the rear of an auditorium missing events occurring on stage. Assembly programs can be recorded and shown later in the classroom with supervision and follow-up activities.

Schools for the deaf differ from those in general education using these methods, with the addition of television monitor(s) displaying the message in captions or through an interpreter's signs. Programs are captioned at different reading comprehension levels.

2. Many "entertainment" type movies are captioned for relatively advanced students. The campus system allows

school personnel to rewrite captions for selected film when captioned scripts are available. Initial captions are electronically stripped and new ones added with showings in dormitories during bad weather or when younger children cannot pass their bedtime for the sake of a feature-length film.

3. Lack of environmental language is often cited as a major drawback to optimum language development in deaf children. Favorite television programs, displayed with captions and brief explanations, to clarify concepts and transfer spoken information or sound effects, would help the younger deaf child acquire language and understand his environment better.

Disadvantages of Campus-wide Systems:

1. Expense.

2. Lack of qualified and experienced personnel to direct and produce quality software materials.

3. Need for equipment of good broadcast quality and capability.

4. Need for engineering personnel able to design installation procedures, implement functional designs, and maintain equipment.

5. Requirement of a physical plant which can be adapted or adequately receive television devices in its present state.

Technical Considerations

Classroom System: When studying equipment needs for installation of a classroom system, the administrator in a school for the hearing impaired would find most components could be purchased from local suppliers and would not vary greatly from equipment found in schools for normally hearing pupils.

Campus System: In addition to technical facilities usually found in campus-wide systems functioning in general education settings, administrators in schools for the deaf would give special consideration to the following items:

1. Off-air receivers. The number of receivers needed to adequately cover the deaf classroom depends upon what students are going to observe. For example, fingerspelling and speechreading require more proximate viewing. As a rule of thumb, Mr. Matt S. Long, President, Long Engineering Company, suggests allowance of one foot back for every 1-1 $\frac{1}{2}$ inches of screen; that is, with an 18" receiver or monitor, the last student should be seated about 12 feet back.⁴

2. Re-transmitting facilities--to re-play programs from all available channels in the master antenna coverage area.

3. Digital Captioning equipment--accompanied by a tape reader and data call package for caption storage.

⁴Implications for the Use of Television in Schools for the Deaf: 1968 Summary Report, Southern Regional Media Center for the Deaf, Knoxville, Tennessee, 1968, p. 25.

4. Special effects generator--split screen capability for captioning and interpreting.

Personnel

Classroom System: In this system, administrators find most in-class television operations handled by the school teaching staff, audio-visual personnel, student equipment operators, and one or possibly two people qualified to maintain and service equipment.

Campus-wide System: The authors of Suggestions and Guidelines for Development of Television Facilities in Schools for the Deaf, assembled an estimate of staff requirements for administrative deliberation before inauguration of a campus-wide television system. The following section is an abridged compilation of those requisites.

1. Single-channel Captioning System.

- a) Full-time manager. Duties would include taping and caption writing. Although admittedly difficult to find, administrators would be looking for a man or woman familiar with contemporary methods of closed-circuit television operations and coincidentally experienced in either deaf education or instructional media.
- b) Part-time operator--could be a student or non-skilled person. Taping and playback duties.

2. Split-screen Captioning System--One Channel.

- a) Full-time manager and full-time operator.

- b) Part-time interpreter--to caption and assist manager.
- c) If this system also had a film slide chain, a full-time interpreter would be required.

3. System With Live Capability.

- a) Manager, video-audio operator, production director--all full-time.
- b) Full-time caption operator--a deaf educator working entirely with caption dialogue and a full-time interpreter--to assist with art, sets, and operation.
- c) Part-time student camera operators and assistant control room operators.

The authors remarked that the work schedule for these personnel estimates was based on an eight hour day, which would produce four hours per day of captioned video programming. Live production quality would be instructionally acceptable but obviously not of network caliber. Since finding qualified personnel is a problem, it might be necessary to employ more than three full-time people in initial development stages. With time, the staff would become more adept, subsequently, part-time employees with less experience could be employed.

Budget Guidelines

The staff of the Southern Regional Media Center for the Deaf and authors of the text have calculated equipment and operational costs for units that would logically be found in the television systems of schools for the deaf just specified.

Without detailing each item and instead concentrating on total costs for administrative contemplation they include:

A. Classroom System	\$3,350
B. Campus-wide Systems	
1. Single-channel Off-air Captioning	22,547
2. Split-screen Interpreting With Off-air Pickup	12,697
3. Film, Filmstrip, and Slide Pro- jection-captioning and Split- screen Interpreting	8,402
4. Studio Production with Audio Switching and Pickup	<u>10,103</u>
Total Cost for All Systems	\$53,749

A projected cost appraisal for initial equipment installation and operation of an average school captioning system for one year totalled \$84,000. This was assuming that a school would use student labor when practical and have sufficient staff interpreters.

The authors noted that Visual Electronics Corporation of New York, would lease-purchase their captioning device for about \$400 per month.

Administrators in schools for the deaf may come to the realization that full television captioning facilities would not be economically feasible, especially if their school is in a state with low educational budgets. An exploration of television programming possibilities offered by regional or national systems could be undertaken as an alternative. These types of expanded production facilities are discussed

in a later chapter, which considers the future possibilities of television in deaf education.

Before making final decisions on which equipment, distribution system, or transmission method best suits the needs of his school, the administrator can turn to a video engineering firm for advice. Norman R. Selinger, President of Video Engineering Company, in his presentation gave an example of a major university that purchased parcels of equipment over a two year period without utilization consultation.⁵

Mr. Selinger's company discovered that only \$6,000 out of \$25,000 expended for equipment could be utilized because none of the equipment was compatible with broadcast studio configuration. The software phase had been carefully planned, but technical considerations had been neglected. He stated that the function of a systems engineering company was to help school administrators construct goals, plan ultimate requirements, and eventually work out a program of progressive purchasing toward those goals.

In-school television program planning requires an equal amount of administrative deliberation. Mr. Edward Palmer, Audio-visual Supervisor for the New England Telephone Company, made the comment: ". . . one time I ended up suggesting the use of ONE poster to solve the needs of a training person who thought

⁵Implications for the Use of Television in Schools for the Deaf, 1968 Summary Report, Southern Regional Media Center for the Deaf, Knoxville, Tennessee, 1968, p. 11.

he needed a full-fledged video tape production. The one poster accomplished all objectives of his project."⁶

In an address entitled "Instructional Media and The Individual Student," Dr. Robert Diamond, Director of the Instructional Resources Center, New York State University suggested that school for the deaf administrators take a serious look at a systems approach in their planning.⁷

With this method, the administrator defines his objectives in behavioral terms after considering a sequence based on: (1) the needs of the student and society; (2) the domain of knowledge, and (3) the goals of the institution. In any school with hearing impaired students, he declared that administrators should consider the make-up of their faculty, number of students, space and facilities for independent and group study, and time needed for selected teachers of the deaf to gather and prepare television material.

⁶Dr. Edward L. Palmer, "Distribution Ideas For Video Tape Programs." Paper presented at the Symposium on Research and Utilization of Educational Media for Teaching the Deaf, Lincoln, Nebraska, March, 1970, p. 2.

⁷Video Technology and Programs for the Deaf: 1969 Summary Report, Southern Regional Media Center for the Deaf, Knoxville, Tennessee, 1969, pp. 7-8.

The portion of his media plan that specifically included television, called for its use in large group instruction after investigating a process of defining objectives, structuring content, materials preparation, walk-thru, rehearsal, video taping, faculty orientation, and live follow-ups.

To summarize, regardless of which transmission and distribution system the school for the deaf administrator selects, what monies are available for investment, and what exclusive staff competencies are present, his concern will first determine what television can contribute to the educational environment of the school. Deliberations leading to final decisions involve his office, teachers, technicians, media specialists, manufacturing representatives, and other concerned parties. Those discussions attempt to define technical needs, student and staff requirements, subjects available for television treatment, and successful teaching methods for that treatment. Final decisions will ultimately determine whether or not television is an appropriate and practical medium to aid in satisfying the specific learning needs of his school.

Software Applications

Current literature has revealed that television is being used in a variety of programming procedures in schools and other organizations educating hearing impaired students. As of June, 1969 at least fifteen schools for the deaf were

utilizing television equipment in their instructional programs.⁸

Responses to the letter distributed by this writer, as discussed in Chapter II, give an indication of the increase in schools for the deaf that were using television in some significant capacity during 1969-1970. Without repeating names of organizations and schools already discussed in Chapter II, the aim of this section is to provide a selected sampling of software, that is, curricula materials adapted for television and presently conveyed by television instruments in contemporary instructional programs.

As previously mentioned, there are essentially no great technical differences between television equipment used to teach those with normal hearing and those with hearing disabilities, but there are contrasts in the manner television program material is handled.

Hardware suppliers, the equipment manufacturers, do not primarily function to create unique applications of television equipment, although often their ideas are of value to administrators and teachers of the deaf. Choosing which subjects are best suited to treatment by television is no easy task for curriculum designers and administrators. Evaluation, planning, revision, spending budget allocations, early experimentation, and the job of best developing

⁸Frances E. Brooke, "Television Recordings As Integral Parts of Language Development Lessons for the Hearing Impaired," Unpublished Master's thesis, University of Hawaii, 1969, p. 25.

equipment potential to convey subject material messages, requires many hours of concentrated contemplation.

Norman R. Selinger, President, Video Engineering Company said:

I cannot tell you what courses are more amenable to treatment by television than others. Thus, it is better to try to teach those parts of a course which are most efficiently presented by television, than to try to teach the course entirely by this medium. Television is exceptionally good at teaching anything that involves physical action or requires the description of spatial relationships.⁹

Academic Subjects

1. Science and Mathematics--as a magnification instrument. Three-dimensional objects can be analyzed on a two-dimensional screen.

2. Vocational Arts--problems encountered in drafting, mechanical drawing, auto mechanics, and woodworking, for example, often require the concentration of a small number of pupils, at the sacrifice of the majority. Video taped presentation and solution of these situations, often with magnification devices, lets all view activities instead of a few.

3. Language Development and Speechreading--fabricating words and social situations for "live" on-camera portrayal or video tape recorded for later use.

⁹Implications for the Use of Television in Schools for the Deaf, 1968 Summary Report, Southern Regional Media Center for the Deaf, Knoxville, Tennessee, 1968, p. 15.

4. Physical Education--video tape used for playback, stop-start, and slow motion of athletic events on the varsity level and in physical education classes gives basketball, football, and track instructors a deficiency-correcting tool that is clear, immediate, and impressive.

5. Social Studies--documentaries and special event programs produced by the schools or picked up from community, regional, or national sources.

Supporting Services

1. Guidance Counseling--as an instrument to meet needs for familiarizing deaf students with local or national vocational opportunities. Portable television equipment taken to businesses, industrial plants, banks, and government offices to gather guidance material. In group or individual therapy session, counselors may create hypothetical behavioral situations, with examples and discussions of desired student reactions. For example, good communication conduct in doctor's offices, shopping centers and on public transportation vehicles.

2. Public Relations--video taped presentations of a school's curriculum and facilities displayed for professional group, civic club, and parent gatherings.

3. Dramatic Presentations--televised performances of students for in-school assemblies and community programs. Off-air recordings of National Theatre of the Deaf programs.

4. News and Weather--programs executed by students and/or instructors for use within the school or taken off-the-air from community stations.

5. Behavioral Files--longitudinal studies of a pupil's scholastic and social accomplishments as recorded on video tapes.

6. School Events and Field Trips--to assist in overcoming a natural forgetfulness of important activities and their details, instructors of the deaf video tape and replay the experiences of a trip or event and produce a second chance for focus on concepts and environmental language.

Speech Training with Television

The development of intelligible speech, which hopefully enables a hearing impaired child to function more adequately in a hearing environment, is a primary instructional goal of many schools for the deaf. For this reason, speech training was selected for a more detailed description of how television is being used as a therapeutic tool in some of these institutions.

For speech instruction, especially to primary grade deaf pupils, video tape is being utilized to improve volume, quality, pitch, rate, vocal variety, and articulation. Hearing impaired children are using headphones, individual hearing aids, amplifiers, and television to identify environmental sounds, thereby receiving both visual and auditory stimulation. Video taped speech activities enable the deaf

student to evaluate himself and receive constructive criticism from teachers and classmates. Using monitors, a teacher of the deaf re-plays and notes defective sounds as produced by the student. Close-up recordings of the face indicate tongue, jaw and lip mobility, plus facial expressions. For rate, tempo, and breath pause therapy, teacher and pupil are recorded together and alternately, then re-taped until the child has an adequate idea of how his speech patterns compare with his instructor's.

The Speech Through Vision Study Committee, authors of Teaching With Television, suggest utilizing a split screen effect with video tape recordings in speech training. "This technique involves some pre-recording done by the teacher. Use an exercise (poem, narrative, drill work) suitable for necessary speech difficulty correction."¹⁰ The teacher records all instructions so that a pupil can assist himself, and makes sure that he has appeared on only one side of the screen. The child positions himself on the other side of the screen, starts the tape, and appears in the picture without being recorded. Simultaneous viewing is achieved without erasing the teacher's part or recording himself. After re-winding, other pupils can repeat the same lesson.

¹⁰Teaching With Television, The Speech Through Vision Study Committee, ESEA Title III Project, Northampton, Massachusetts, 1968, p. 52.

The authors of this text also stated that: "Very often corrected articulation of specific sounds does not carry over into home speaking situations. Parents may not be aware of this lack of carry-over and may become concerned about the child's progress."¹¹ Parents may evaluate their child's speech progress by viewing video taped comparisons of performances made at different times during the school year and compare their own at-home impressions with those of the machine and the therapist.

Hardware-Mechanical Instruments of Instruction

Administrators and media specialists in deaf education institutions have a wide range of television devices to choose from for installation in their schools. Many of the devices are identical to those used in general education's televised instruction. This writer has made no attempt to compile an exhaustive list of available television hardware, but rather, has endeavored to cite and occasionally comment upon, devices that are coming on the commercial market, are very new, or have potential for unique application in educating non-aural students.

1. Helical Scan Video Tapes--converting video tapes into 16 mm films and slides. An article appearing in the NAEB Journal suggests that the film medium is especially appropriate

¹¹Ibid., p. 49.

for storage and playback of programs originally recorded via video tape because the transfer of a video production to film: 1) frees the tape for further production use; 2) puts the production in a form which can be played on any standard 16 mm or 8 mm projector; 3) maintains the availability of television tape machines for production rather than playback purposes.¹² The final point made by the authors is important in deaf education because many school districts will have only one recorder available to service their member schools, or have no video tape recorder, only film facilities.

2. Rear Screen Projection--a very large projection area permits the use of a magnified television picture, and has particular value for deaf school auditoriums having large group demonstrations. Other visual images, such as captioning and interpretation, may appear as supplementary and simultaneous information. Lecturers can use a small portable television camera to televise a picture of some object under discussion, and have it appear as a very large rear screen image.

3. Zoom Lens Cameras--used in large group open discussions, where each speaker's image is transferred to a centrally located monitor, directly adjacent to the acting interpreter. The deaf audience, thus has an opportunity to

¹²Rudy Bretz and Ken Winslow, "Compatibility in CCTV--How Important Is It?" NAEB Journal, 20 (May-June, 1961), p. 62.

speechread any speaker's verbal messages even though his position may be some distance away.

4. Poloroid Cameras--to produce title slides for arrangement and use in a television format.

5. Monitors--equipped with video input-output, matching microphone input, and audio output connections for auditory training equipment.

6. Character Generators--captioning or lettering placed instantaneously on a television picture via an electronic typewriter keyboard. They have crawl and roll options, a line shift for blanking out one line and inserting another, and may also be pre-programmed. Digital portions are recorded on audio tape or are sent to caption circuits on the set screen.

7. Special Effects Equipment--title inserters, switching devices for superimposures, fades, wipes, dissolves, and multiple camera interaction. This equipment permits screen splitting in several ways when captioning--horizontal, vertical, any corner, middle, circles, and squares. A combination of signed interpretation and captioning may be procured with signing in one corner of the screen and captioning "wiped" from the bottom or superimposed.

8. Continuous Cartridge Video Tape Playback Units--Programs recorded in the morning may be distributed in cartridge packages to other schools or meeting places for playback through monitors or television sets as early as the same afternoon or evening.

9. Portable Color Television Equipment--including cassettes, video tape recorders and monitors for recording educationally worthwhile commercial programs, with color playback.

CHAPTER V

CONCLUSIONS, RECOMMENDATIONS, AND POSSIBLE RESEARCH APPLICATIONS

Conclusions

Prior to 1965, the use of television in deaf education was practically non-existent. Little was known about the educational technology of television in this field, costs were considered very high, experienced personnel in program design and equipment operation were scarce, facilities were limited, and there was formidable competition from "older" media already in successful operation.

Gradual cost-cutting in the manufacture of video equipment devices, and the establishment, in 1966, of five Regional Media Centers with their subsequent activities and projects, caused educators to begin to see ways television could be used to effectively educate the deaf child. Annual symposia conducted at the Midwest Regional Center, beginning in 1965, gave important impetus to continuing recognition of the trend. Early suggestions and guidelines for useful applications of television in deaf education were produced at the 1968 Symposium in Lincoln, Nebraska, and were based on needs experienced from previous symposia discussions.

Many problems are still evident when considering the role of television in deaf education today. The ensuing discussion attempts to shed light on some of the reasons most schools for the hearing impaired, across the nation are not yet using the television medium to a significant and comprehensive extent in their instructional programs.

Information presented in this thesis, comments offered by letter respondents, and the interpretations drawn from personal interviews conducted by this writer, have contributed to the following judgments on current utilization of television in educating the deaf.

Extant literature published on the subject of educational television commonly deals with its performance in general education curricula, and is disappointing in its scarcity and relevancy to learning needs in deaf education. Its paucity is evidenced by the fact that even an exhaustive research effort revealed only limited written resources for citing in this thesis, and most of those references appeared in print within the past ten years. Much of what is available is too diffuse or so inclined to emphasize technical terms that uninitiated scholars and deaf educators often discover themselves meditating on source material with little practical or personal application.

There is, at present, no annually published bibliography dealing specifically with the utilization of television for deaf education. The publication of a historical digest which

accurately records developments in this field has not yet been realized. Volumes of this nature would be invaluable for future research endeavors, and administrative planning for possible courses of action.

Deaf education organizations and experimental agencies with professional activities involving television as an integral concern are not numerous or widespread. Little is known about the types and effectiveness of their programs.

It will be recalled that all of the agencies, schools, media centers, television stations, both commercial and non-commercial, and organizations, were described in this thesis because they are today utilizing television in some meaningful manner. However, their numbers, when compared with potential institutional involvement are indeed very small.

Surprisingly, educational television stations, while credited with pioneering efforts, have ostensibly failed in their responsibility to extensively program information providing the general public with a realistic perspective of the aurally disadvantaged in societal roles. Efforts have been few and far between. Furthermore, it is difficult to imagine commercial television stations airing regular programs supplemented with captioning and/or interpretation, when their non-commercial counterparts, with only limited concern for quantitative audience ratings, have not taken the initiative. Commercial television programs displaying specialized visual techniques for deaf viewers, while infrequent, have been nonetheless encouraging.

Many deaf education teachers view their television hardware as difficult to operate, costly, and of debatable value to their particular lesson planning. Often teachers lack the skills or incentive for operating television equipment efficiently and have little desire to create, implement, and evaluate new television ideas in the classroom. There have been a few, but only a few, excellent applications of television's mechanical capabilities in multi-media systems and teacher-directed learning activities.

The results of research monies spent on Federal projects for deaf education curriculum development and teacher training have indicated serious deficiencies in course work, staff qualifications and numbers, and systematic program organization.

However, a few television teacher training programs have made significant gains toward using television in a process which both prepares teachers to employ the medium in their classrooms and allows for self-evaluative procedures. Video tape units are used extensively in some teacher of the deaf training programs.

Television teachers, laboring to educate the deaf, have no workbook which explains television techniques and materials used in general education and provides specific guidelines for special education adaptation. Texts dealing with these methodologies in a regular and orderly arrangement for use in specific subject areas, do not abound.

There is a persistent need for television equipment modifications designed to meet unique problems in educating those with hearing disorders. For example, video tape recorders can be noisy and consequently have an adverse affect on the performance of group and individual hearing aids. Excessive weight and lack of equipment portability also inhibits the teacher of the deaf, who traditionally needs to perform in a situation as close to one-to-one as possible. The quality of special television programming for hearing impaired students relies substantially on equipment compatibility and capability. Poor equipment that is difficult to operate and adapt has often restricted software quality.

Despite problems just discussed, surveys have revealed that some teachers of the deaf and deaf students are operating television cameras and video tape recorders with surprising degrees of proficiency.

Administrators in many institutions which have enrolled students with hearing dysfunctions are suspicious of depressing cost estimates for installing, operating and maintaining television equipment. They often lack knowledge or interest on how to orient and organize their available staff to effectively implement television in the curriculum of their school. School officials are struggling with the realization that each facet of software programming requires a large outlay of time, talent, and financial resources.

Commercially prepared program materials are not necessarily the answer either, because they are often too lofty or lack enough repetition to be of specific use in educating the deaf.

The debate continues in their minds, when they are aware that staffs still cannot easily be filled with qualified teachers and they must constantly compete with other programs for financial aid, facilities, and faculty.

Like teachers, administrators need sources of reference to meaningfully carry out their functions. But, few deaf educators are actively involved in educational television's development of research, storage facilities, legal consulting, engineering and production centers.

Unfortunately, any investigation of the use of television as a learning channel in educating the deaf must terminate while still referring to potential. Data gathering about all phases of this topic has not been systematically compiled, categorized and circulated for critical comment and positive expansion.

The findings and discussions which have emerged from the work of this thesis make it reasonable to assume that instructional television is potentially one of the best tools of learning available to educators of the deaf.

This thesis reveals that television is currently being utilized with measured success in only a few of many programs educating the deaf. Positive implementations have been scattered, but indicative of the possibility of a promising future.

Television cannot be expected to teach total programs, nor act as the exclusive agent of teaching given exercises within that program. When functional objectives for any particular kind of learning for the deaf have been fully defined, the best medium and strategy can then be chosen.

With a systematic approach, television can be used for the deaf as a supplementary device to present knowledge, demonstrate unique techniques, and create enthusiasm for learning. The prospects for increased and persuasive utilization of television in educating the deaf for the approaching years, appear dependent on many variables.

The remaining pages of this examination will be given over to recommendations designed to mitigate the problems discussed earlier in this section and suggest potential research applications.

Recommendations

1. In the area of history, the following recommendation is suggested:

The construction and annual publication of a historical digest which records the nature, frequency, and results of educational and commercial television activities in all institutions educating hearing impaired children in the United States. A volume of this kind would assist administrative and experimental priority determinations, strategy

formulation, future research, and equipment performance evaluation. It would also help avoid unnecessary duplication of activities. The National Center for Educational Media and Materials for the Handicapped or the Department of Health, Education and Welfare's Bureau of Research are capable of compiling and distributing this text.

2. In the area of organizations the following recommendations are suggested:

Impressive signs indicative of television's current use and potential value in instructional programs for the hearing impaired have come from the few organizations actively serving the deaf. The persistent, but limited work performed by them in public relations and educational activities has been a truly cohesive agent acting to stimulate the uses of television in deaf education and make them more viable. It is submitted that the only feasible way deaf education in the United States will receive meaningful support for experimentation is through the creation of need awareness on the part of legislators, school personnel and the public through information programming on national network open-circuit television. Enlightened legislators, in turn, should be instrumental in reflecting the opinions of their constituents and turn national concern into concerted political action to make more comprehensive use of television, both open- and closed-circuit, for deaf viewers. Existing organizations would then have increased and re-vitalized motivation for expanding their programs. Stemming from this new publicity, a highly-

developed, self-sufficient television agency should be formed.

The Corporation for Public Broadcasting, if it receives necessary funds from Congress can be an important source of television program material, personnel, facilities, experimentation and services for deaf education. It should obtain quality programs for non-commercial use, make grants to stations and individuals for programs produced and distributed on a national basis, and establish a lending library for storage and usage of those programs. National Educational Television's Public Broadcast Laboratory should be an immediate leader for production and dissemination of televised materials for the deaf.

Existing national organizations, such as the Council of Organizations Serving the Deaf (COSD) or Media Services and Captioned Films are in a position to prepare a video taped program which accurately portrays their viewpoints as commented by a local expert in deaf education. In this way communities across the nation could receive information, at a minimum of cost to the local station, about national developments involving the deaf. At the same time, the local representative would have a real opportunity to introduce himself and the motives of his group to the community. A subject that might be related to and treated with this packaged video tape program is parent education for detecting early hearing problems in their children and locating

agencies providing testing and treatment. Brief segments on the meanings of sign language and deaf vocational opportunities might also be subject material. With proper coordination and scheduling networks could put the program on throughout the nation on the same day.

The creation of a national system of open-circuit captioned television is proposed. One corporation has already developed a method of transmission that is not objectionable to stations or viewers, requires no modification of existing station equipment, and is commercially available. Preparation time, a talented crew of deaf-education trained caption writers, and cooperation between individual stations and networks is required for the success of such a venture. The system could easily provide a significant measure of entertainment and education for large numbers of deaf students and adults.

It is possible that this notion might best commence on a regional basis, perhaps through the specialized exercises of the existing Regional Media Centers. The four Regional Centers could have a department devoted entirely to the creation and distribution of captioned materials. Major networks might then see the potential for this type of programming and proceed to air it on affiliate channels. The Captioning Departments of Regional Centers could also produce video tapes, mail them to participating schools, who in turn would play and/or copy the tapes, send them on to another school, with

eventual return to the Center. Logically, this kind of environment would encourage a more widespread television research and design effort for compatible software materials, and eventually establish a reciprocal network of schools.

Commercial television stations should regularly use the following visual "favors" on the screen for deaf viewers:

- 1) Brief wordings while reporters tell of emergencies.
- 2) Names of speakers and topics on interview, news and talk shows.
- 3) Partial dialogue for outstanding movies.
- 4) Scores in various sportscasts.
- 5) Leave "dubbed" foreign films in their original state.
- 6) Show more subtitled films.

These stations could also publish their special programming efforts in publications, such as TV Guide, for hearing impaired audiences.

Representatives of commercial television stations should meet regularly with officials of organizations serving the deaf, to continually explore needs and new programming efforts.

It is not inconceivable that national television resource centers would enjoy world-wide usage some day in the future and provide an access to international knowledge for the deaf. Because of the development of global communication systems, the idea merits consideration. Manual communication between the deaf, needs no international translation, as evidenced by the almost total "language" comprehension between deaf athletes from all over the world competing in the Deaf Olympics. The proceedings of world deaf conferences, Deaf

Olympics, and The National Theater of the Deaf would provide interesting and informative captioned or interpreted program matter, for hearing and non-hearing audiences alike.

3. The following recommendations are suggested for television teacher training programs:

Educational television workshops, summer seminars and in-school orientations for teachers of the deaf ought to strive for cultivating either a rudimentary knowledge or greater proficiency in methods of design, production and utilization of the medium. In this manner new and veteran teachers will learn the latest television presentation methods and be more eager to employ them in their teaching. Increasing numbers of educators of the deaf might also find careers in developing software uniquely suited for televised portrayal. The Regional Media Centers are presently doing some work in this direction, other schools and education-oriented organizations with capable personnel and facilities should follow.

The workshops should conduct controlled experiments that would compare television's unique capabilities in teacher directed learning units for the deaf with other disadvantaged areas. Results of such experiments, after validation and reliability tests, should lead to the compilation of a teacher of the deaf guidebook for television instruction.

Video tapes of training programs, portions of successful courses and demonstrations should then be distributed through

commercial stations as public service programming, closed-circuit facilities of teacher training institutions, and other existing services, such as The Educational Television Library. When established, a distribution system of this nature would have real value for introducing novel curriculum concepts.

Administrative contacts should be initiated between universities with audio-visual, television-radio, and/or deaf education departments for development of student and teacher exchange programs in these areas. In this manner each could benefit from the strengths of others.

Within the confines of a given university, equipped with sufficient television facilities, a course could be designed and conducted on the campus, where Television-Radio Ph.D. or Master's degree candidates with special interests in instructional television would tutor undergraduates in deaf education. The course content would focus on techniques and operational procedures in many phases of television studio production. Special attention would be devoted to determining how the prospective teachers of the deaf might translate and apply their new knowledge of television to the classroom setting.

The course should be administered by two university faculty members working in close cooperation with each other and the facilities manager. The instructors would mutually establish objectives, lesson plans, testing procedures, and

evaluative methods. One faculty member should be from the Department of Television-Radio, the other from the Department of Special Education.

Both groups of students, those in television-radio and those in special education, would receive a specified number of credits, and if the course proved academically successful it could become a graduation pre-requisite for students in both departments.

The opportunity for complementary feedback between students and between instructors is virtually unlimited. The participants would receive a rare opportunity to gain an insight of each other's problems and recognize new television forms for specialized learning purposes. For example, many teachers of the deaf are acutely aware of the need for visual language in their lessons and, as a result, are habitual collectors of all kinds of pictures. Television-radio tutors would show them how spatial dimensions, special effects, illustrations, and lettering are most effectively arranged for television visuals, for both group and individual viewing.

So-called "master teachers" of the deaf, retired or active, must be encouraged to participate in national curriculum design and teacher-training assemblies utilizing television. Expert teachers have acquired years of priceless experience. Their personal instructional techniques may very well be of great value in televised programs for the

deaf. Video tapes of their methods could then be nationally distributed to many training institutions or may even be used for teaching specific subjects in-class.

4. The following recommendations are suggested for the area of software development:

Research findings with important curriculum innovations discovered in general education ought to be continually cross-applied by course design specialists working with learning ideas for the hearing impaired. Courses of study that would prove suitable for dual treatments include "new" math, science, industrial arts, and physical education.

Instructional television can be successful in structuring individual learning programs for the deaf, if it is used to revise, reorganize, or replace components of a given lesson after evaluation of whether or not the desired learning objectives are still being accomplished. Television ought to be employed as a systematic, yet flexible, tool for taking apart and streamlining lesson ingredients that no conventional lecture can accomplish.

A committee, appointed by the United States Education Department's Bureau for the Handicapped, should be organized to act as a liaison between media centers, libraries, state and local educational television agencies, commercial television networks and stations, and all schools with hearing impaired pupils. Under the committee's directives, any school that made a formal request, could receive advice on

how to initiate an instructional television operation, what to best do with existing equipment and facilities, and how to identify sources of appropriate programming.

To aid in this service, the committee should create a standard manual for curriculum and equipment development with television for educating the deaf.

5. The following recommendations are suggested for the area of hardware:

This writer would counsel that firm cooperation should exist between television equipment manufacturers and schools for the deaf for constructing standard television equipment and video tape specifications.

Television equipment with greater portability and dependability at reasonable cost should be manufactured. It is desperately needed by educational institutions operating on shoe-string budgets.

Schools educating the acoustically disadvantaged must more efficiently manage existing storage and production facilities for utilitarian and less expensive television facilities. Schools with multi-purpose media rooms already in successful operation should serve as models for schools contemplating expanded facilities.

There are many devices appearing on the commercial market with implications for television adaptation in classrooms for hearing impaired students. To keep pace with ever-increasing enrollments and constantly changing equipment,

school for the deaf administrators and media specialists must constantly be watching for new educational tools, or they will be missing valuable years of experience and experimentation. Television-related instruments on, or soon to be on, the commercial market include: student response systems, color compatible electronic video tape recording units for producing cartridge-form products, video-matrix systems, a visible speech apparatus, Stromberg-Carlson Vistaphones, over-the-counter home library cassettes, and Poloroid's instant movie film which would allow teachers to see their motion pictures immediately after exposing them.

6. The following recommendations are suggested for the area of administration:

School for the deaf administrators have a responsibility to enlist their teachers in a planning process to determine how television can best serve their needs and those of the students. They should conduct informal orientation meetings and actual demonstrations of instructional television utilization.

Administrators must investigate television's application in problem departments or subject areas and identify staff members most competent to complement its learning impact.

They must be aware of new television equipment and at the same time be looking for used items. For example, black and white television equipment can be purchased at bargain rates from area stations that are changing to color.

Military, corporation, and university operations can also provide useful purchase, set-up, and maintenance advice.

Administrators are advised to constantly examine and thoroughly investigate novel sources of television programming that might be adapted to their curricula. They should utilize local educational television station programs if quality and content are deemed instructionally adequate. For particularly good programs, they should indicate their interest by contacting the National Educational Television network or the Educational Television Stations division of the National Association of Educational Broadcasting. These organizations might then commence recording and widespread distribution of superior programs.

Furthermore, the future may see captioned television materials disseminated from regional or national centers, expressly operating to produce captioned video taped programs for distribution to member schools. If an administrator needs, for example, programs on in-service and teacher training, information services, or academic subjects without suitable television treatment of any kind, he could subscribe to a caption network and receive unique program packages for problem areas.

Possible Research Applications

Several problem areas in need of systematic inquiry and experimentation have been indicated during the composition of this thesis.

A few of these endeavors, designated to improve the utilization of television in deaf education are suggested for future investigations undertaken by university graduate students or professional research agencies.

The development of questionnaires designed for television teachers of the deaf and constructed to measure the perceived learning effect and performance of television software and hardware in residential and day school classrooms for hearing impaired students. Measurements of this nature would collect data on how teachers rate kinds of cameras, video tape units, special effects devices, and captioning equipment. Indications of the educational value of programming applications in various courses of study would also be derived. Theory in television learning materials development for the deaf could be tested in this manner.

Studies where comparisons are made between groups of hearing impaired students viewing prepared television lessons by their or another teacher, a group not using any television devices, but rather, other kinds of audio-visual materials, and a group using lessons planned by their teacher for implementation of spontaneous recordings and playback.

Investigations determining student comprehension scores for television lessons presented with only manual communication methods, those with only oral methods, and those using simultaneous methods of communication. The test audience would consist of students from similar socio-economic

backgrounds and intelligence levels. The "oral only" portion could be compared with scores achieved by a hearing group.

Examinations searching for knowledge about the application of television in deaf education with instructional objectives influenced by behavioral objectives. Researchers should attempt to isolate specific and unique communication and learning problems the deaf encounter in the classroom. Practically no application of the body of knowledge available in the behavioral sciences has been realized in the education of the deaf. Segments of a televised lesson could be analyzed in terms of overt motor responses, visual portions with and without captioning and/or special effects, fictional treatments, humor, and various patterns of information spacing and repetition.

Tests could also concentrate on message elements attempting to discover how the deaf "visualize": sequential thinking, abstract thought processes, creative problem solving, self-expression, meaning definition, and other role-playing relationships of life.

Research designed to compile a comprehensive and annually published bibliography on the uses of television in deaf education.

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