The Hearing-Impaired Learner With Special Needs

Robert E. Stepp, Jr.

Symposium on Research and Utilization of Educational Media for Teaching the Deaf. Held on March 31 and April 1-2, 1981, at the Nebraska Center for Continuing Education in Lincoln.

Sponsored by the Captioned Films and Telecommunications Branch of the Office of Special Education, Department of Education and the Media Development Project for the Hearing-Impaired, Barkley Memorial Center, Teachers College, University of Nebraska—Lincoln.

Robert E. Stepp, Jr. was the Project Director of the Media Development Project for the Hearing-Impaired; Director of the Barkley Memorial Center; and Professor, Educational Administration, University of Nebraska-Lincoln. Previously, he was Director of the Specialized Office for the Deaf and Hard of Hearing (1974-1977); Director of the Midwest Regional Media Center for the Deaf (1966-1974); Director of the University Bureau of Audiovisual Administration; and Assistant Director of the Extension Division, all of the above at the University of Nebraska-Lincoln. Dr. Stepp has an A.B. from Central College (Missouri), a M.A. from the University of Iowa, and his Ph.D. from the University of Nebraska-Lincoln. Dr. Stepp has been active in both state and national audiovisual organizations. As an author, speaker, consultant, and media specialist, Dr. Stepp's involvements in the education of the deaf are numerous.

FOREWORD

The Fourteenth Symposium on Research and Utilization of Educational Media for Teaching the Deaf was held on March 31 and April 1-2, 1981, at the Nebraska Center for Continuing Education in Lincoln. This conference was sponsored by the Captioned Films and Telecommunications Branch of the Office of Special Education, Department of Education and the Media Development Project for the Hearing-Impaired, Barkley Memorial Center, Teachers College, University of Nebraska—Lincoln.

A series of similar symposia were held annually from 1965 through 1974 at the Nebraska Center. After an interim of three years, the series was renewed in 1978. Themes of the previous conferences, conducted by the Midwest Regional Media Center for the Deaf and now the Media Development Project for the Hearing-Impaired, were as follows:

1965—An Overview of Audiovisual Research Affecting Deaf Education
1966—Systems Approach in Deaf Education
1967—The Educational Media Complex
1968—Designing Instructional Facilities for Teaching the Deaf: The Learning Module
1969—Individualizing Instruction for the Deaf Student
1970—Communicative Television for the Deaf Student
1971—Programmed Learning for the Deaf Student
1972—Affecting the Human Potential of the Deaf Student: Another Role for Educational Media
1973—Career Education and Educational Media for the Deaf Student
1974—Update '74: A Decade of Progress
1978—Developments in Communication Technology for the Hearing-Impaired
1979—Educational Technology for the '80s
1980—Back to Media: How to Use Better What You Already Have

If the reader is interested in studying these reports, they may be found in one of the fall issues of each of these years in the *American Annals of the Deaf*. The Tenth Symposium report contained not only the scholarly papers but also a cumulative index of the papers of the previous ten symposia. The reference for this information is the October 1974 issue of the *American Annals of the Deaf*, Volume 119, No. 5, pp. 626-656.

The theme for the 1980 symposium was "Back to Media: How to Use Better What You Already Have." The conferences for the past several years have been aimed to look at the future, such as the 1978 symposium on "Developments in Communication Technology for the Hearing-Impaired" and the 1979 conference on "Educational Technology for the '80s." The 1980 symposium was designed to look back

and review the progress that had been made and to suggest alternate ways to improve the use of the technology already available in schools and classes for the hearing-impaired. From the first symposium in 1965 to the 1979 meeting, the program had been planned for administrators, supervisors, media specialists, and college educators. The intent of that plan was to reach the decision makers and through the years keep them abreast of the current and future application of technology in teaching the hearing-impaired.

The 1980 conference was a departure from this plan. The program was designed for supervisors, teachers, and media specialists. A glance at the program reveals the fact that both the keynote and concurrent sessions were, in the main, classroom-type demonstrations. The presentations were examples of actual utilization practices in the provision of educational media and technology for acoustically handicapped students.

The Fourteenth Symposium was, in a sense, another departure from the basic plan. The theme for the 1981 conference was a general category with three subcomponents. The selected title was "Hearing-Impaired Learner with Special Needs," and the three divisions were (1) Giftedness, (2) Developmental Disabilities, and (3) Deaf-Blind Disabled. No one will debate the fact that many of the hearing-impaired learners have additional handicapping conditions and, in a way, are multihandicapped. One combination which is different and one which does not follow the usual classification of being multihandicapped is the concept of giftedness. All three subtopics are areas of concern because of their implications to the education of the hearing-impaired. These are timely topics for a symposium on the applications of educational media and technology.

The presenters were asked to submit their papers in advance of the meeting, which permits mailing of these papers to all people who preregister. No one appearing in a concurrent session was allowed to read his or her paper. The concurrent sessions were for demonstrations only. In other words, the presenter prepared a paper on his or her topic; it was sent to attendees in advance; and at the symposium, the program participant demonstrated the meaning and content of the paper. All presenters used educational media and technology in their respective sessions. Each concurrent presentation was given three times in order for the attendees to select and witness demonstrations conforming to their interest.

The materials demonstrated included 16mm films, videotapes, filmstrips, slides, audiotapes, overhead transparencies, programmed learning sequences, super 8mm loop films, charts, posters, and other graphic arts. The equipment utilized ranged from 16mm film projectors, 8mm film projectors (cartridges), videotape players (cassettes), audiotape players (cassettes), microcomputers (diskettes), overheard projectors, to slide projectors used in one, three, or six screen presentations.

The keynote speakers were as follows: Dr. Scottie Torres-Higgins, formerly Executive Director of the National Council of Arts for the Handicapped; Dr. C. June Maker, Assistant Professor in the Department of Special Education, University of Arizona; Dr. Gerald Pollard, Director of the Talented and Gifted Project, Texas School for the Deaf; Mr. Phil Bravin, Job Placement Specialist, Deaf-Blind program, Ohlone Community College; and Dr. George prop, Associate Director, Media Development Project for the Hearing-Impaired, University of Nebraska-Lincoln.

In addition to the keynote addresses, six sets of concurrent sessions were conducted, each including various topics of interest. In Session I the presenters were as follows: Mrs. Judith Solomon, Teacher,

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

New York School for the Deaf, White Plains; Ms. Catherine Fischer, Learning Resources Center Assistant, Model Secondary School for the Deaf; Mr. Brian Boham, Coordinator of the Hearing-Impaired Program, Davidson School, Elwyn Institutes; and Mrs. Tippi Comden, Media Director, Western Pennsylvania School for the Deaf.

Session II presenters were as follows: Mr. Richard Lieding, Coordinator of Research and Evaluation, Magnolia Speech School for the Deaf; Ms. Dona Chapman, Teacher/Media Specialist, Regional Program for the Deaf, Media Production Center for Portland Public Schools; Ms. Susan Zylstra Owner, Administrative Intern, Multiply Handicapped Hearing-Impaired Program, Kendall Demonstration Elementary School; and Ms. Doris Caldwell, Special Assistant to the President, National Captioning Institute, Inc.

The presenters for Session III were as follows: Mr. Robert Schmitt, Supervisor of Media Services, California School for the Deaf, Fremont; Dr. Charlene Bishop, Director, Hearing-Impaired/Visually Impaired State Library, Louisiana Learning Resources Systems: Mr. Rudy Flores, Teacher of hearing-impaired, Sensory Handicapped Program, Birney Elementary School, Tacoma Public Schools; and Ms. Barbara McLean, Co-Director for Instructional Design, Instructional Media Production Project for Severely Handicapped Students, Peabody College/Vanderbilt University.

The presenters for Session IV were as follows: Ms. Carla Shaw, Resource Teacher for Talented and Gifted Project, Texas School for the Deaf; Mr. Gene Grell, Upper Elementary Principal and Mr. Wyman Howard, Deaf-Visually Impaired Resource Teacher, Iowa School for the Deaf; Mrs. Judith Evans, Preschool Teacher, New York School for the Deaf, White Plains; and Mr. Stephen Gillette, Dormitory Language Project Coordinator, North Dakota School for the Deaf.

The presenters for Session V were as follows: Ms. Peggy Fleury, Teacher, Gifted Hearing-Impaired, Ms. Barbara MacNeil, Psychologist, and Mr. Michael Pflaum, Resource Teacher, Hearing-Impaired Program, San Diego Unified School District; Ms. Joan Forsdale, Interactive Media Designer, Informedia; Mr. Michael Kessler, Developmental Education Specialist, Department of Student Life, National Technical Institute for the Deaf; and Mr. Phil Bravin, Job Placement Specialist, Deaf-Blind Program, Ohlone Community College.

The presenters for Session VI were as follows: Ms. Carol Dierksen, Elementary Supervisor and Ms. Deborah Peters, Special Teacher, Minnesota School for the Deaf; Mr. Patrick Coyle, Assistant Professor, Program Director, Optical Finishing Technology, National Technical Institute for the Deaf; Ms. Nita Minton, Teacher, Special Unit, California School for the Deaf, Fremont; and Ms. Nancy Northup, Teacher, Ms. Janet Fleharty, Library/Media Specialist, and Ms. Paula Hendricks, Coordinator of Curriculum Development, Colorado School for the Deaf and the Blind.

As you will notice, there were demonstrations from faculty members of Kendall Demonstration Elementary School, Model Secondary School for the Deaf, and the National Technical Institute for the Deaf. The contract for the Media Development Project for the Hearing-Impaired includes liaison responsibilities to the media programs of these government-supported schools. The Symposium is one way to report to the educators of the deaf the media developments in each of these schools.

Special thanks is given to Hugh Summers who, through his position in the Conference of Educational Administrators Serving the Deaf, has consented to publish these papers in a fall issue of the *American*

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

Annals of the Deaf. This publication assures that these papers will become part of the literature of the field. Sincere gratitude is also extended to the staff members of the Media Development Project for the Hearing-Impaired for their able assistance with special praise to Evelyn Reiners, Assistant to the Director, and Cliff Hollestelle, Administrative Assistant.

The conference staff and participants are most grateful to Captioned Films and Telecommunications Branch for providing the funds, which made the Fourteenth Symposium possible, with appreciation to Dr. Malcolm Norwood, Branch Chief, and Mr. Ernest Hairston, Project Officer, for their assistance and leadership.

INTRODUCTION

In the not too distant past, the opportunities available to a child who was born deaf were severely restricted. He or she was subject to misunderstanding and discrimination, had access to only a limited range of vocations, and often lived an entire lifetime in a somewhat secluded environment.

Gradually, this situation is changing. The general public is finally beginning to see past the handicap to the real people who are the deaf—people whose basic human needs, capabilities, and aspirations are like anyone else's and people who simply have special needs in the process of communication. Education is helping to raise the public level of awareness at the same time it is improving the scope of opportunity afforded the deaf themselves.

The future looks brighter for our deaf population as it does for other handicapped children and adults. The federal government has mandated and supported programs for the handicapped. CETA and affirmative action have broadened the range of employment opportunities. Public Law 94-142, making education of the handicapped the responsibility of each school district, requires the formulation of an Individualized Education Program (IEP) for each disabled child, in the "least restrictive environment" in which the child is able to function. The Child/Find program is providing that deaf children, and other children with handicaps, are being recognized and diagnosed at earlier ages so that organized instruction can begin earlier.

As the IEP's are implemented, it becomes even more obvious that deaf students cannot be categorized by their deafness and taught in a routine way. In fact, the deaf represent a microcosm of the population as a whole. They vary in intelligence, in coordination and dexterity, in special talents, in curiosity, in ambition, in stamina, and in the presence or absence of additional handicaps. All of these factors have a bearing on learning achievement and must be taken into consideration in planning for deaf students. Only in recent years have we sought to identify the gifted students among the handicapped and to vary their programs accordingly. In recent years, also, we have laid particular stress on specific planning to accommodate those children who must contend with a combination of handicaps: the deaf-blind, the deaf cerebral palsied, the deaf aphasic, and the mentally retarded deaf, for example.

Variations in the learning modes and learning abilities among deaf students demand variations in methods and materials. Teachers of the deaf must be adaptable and must have at their disposal teaching materials and devices that are versatile—even though designed for use by and with the deaf. Instructional strategies must vary according to the diagnosis of the learning problems and the avenues of communication available to the teacher and student. Instruction must be planned at a level to enable

understanding and yet at a level to challenge the student to grow and develop intellectually and socially. Learning styles are not more homogeneous among deaf students than among hearing students.

Instructional media of all kinds can be adapted for use by nearly all hearing-impaired learners. Media are valuable tools in educating the handicapped because, by design and format, they can:

1. involve several senses at once;
2. demonstrate ideas;
3. compensate, in part, for impaired communicative skills;
4. provide access to information not otherwise available;
5. simulate experiences; and
6. serve as a response mode and form of creative expression.

Teachers must be skilled in the selection, utilization, and production of instructional materials. Many materials currently available on the commercial market can be used without alteration for the deaf; others will have to be adapted; and still there are areas in which no materials exist, or none that can be used with the deaf learner. For these latter needs, the teacher must be capable of designing and producing his/her own materials. Teachers of the deaf must be resourceful, flexible, and must have expertise in many areas.

The papers of the Fourteenth Symposium on Research and Utilization of Educational Media for Teaching the Deaf focus on the role of educational media and technology in the learning process of handicapped persons who have three identified exceptionalities: giftedness, developmental disabilities, and deaf/blindness. The papers are actually designed to complement the demonstrations presented at the conference and represent a very interesting treatment of these three topics.
In addition, there were three special presentations, which will be of further interest to the reader. One topic was a discussion of closed captioning of commercial and educational television programs. For more than 30 years, hearing-impaired people have been deprived of this entertainment and educational media which hearing people take for granted. Although television is considered a visual medium, most telecasts depend on the narrative to carry the message. The information that this report brings to you is current and timely.

Another feature was the report on the Instructional Media Production Project for Severely Handicapped Students. This project is located at Peabody College in Vanderbilt University, Nashville, Tennessee, and is under the co-directorship of Dr. Floyd Dennis and Barbara McLean. The significance of this project is reflected in its goals and objectives for designing and producing instructional materials to teach the severely handicapped. The gap that this project plans to close is a great one. The need is recognized, and the materials are in great demand.

A special project update was presented by the Media Development Project for the Hearing-Impaired (MDPHI) at the University of Nebraska-Lincoln, the cosponsor of this symposium. MDPHI is focusing its production in two areas: concept development and decision-making skills. There are also two production classifications, namely, adaptation and development. Several existing materials (already on the commercial market) have been selected for modification or adaptation in order to make them suitable for use in teaching the hearing-impaired learner. At the present time, two products are being completely developed by the production staff.

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

The symposium was planned to give the participants a general concept of the application of educational media and technology as related to three identified special needs of the hearing-impaired learner. The program consisted of four keynote presentations (general sessions) and 24 mediated demonstrations (concurrent sessions). Although the reader will gain a wide variety of information from these papers, the most valuable part of the conference was the series of demonstrations conveying to those in attendance the actual meaning of the printed text. The technology being recommended for use in teaching the hearing-impaired was very much in evidence.

"The Hearing-Impaired Learner with Special Needs" is a timely topic. The 1981 symposium adds to the growing literature about the role of educational media and technology in teaching the hearing-impaired.

SUMMARY

The Fourteenth Symposium on Research and Utilization of Education Media for Teaching the Deaf was structured around three subtopics:

1. the hearing-impaired learner who is also gifted;
2. the hearing-impaired learner who is also developmentally disabled; and
3. the hearing-impaired learner who is also blind.

These are three timely topics to explore and analyze in regard to the role of educational media and technology in special educational programs. The conference also emphasized the fact that many acoustically handicapped students have more than one exceptionality. The instructional goals for these learners become more difficult to achieve; the methods for teaching them become more complex; and the selections of media become more crucial. When the learner is deprived of one or more sensory inputs, the instructional education plan (IEP) reaches new significance as teachers, resource teachers, specialists, and parents work together to meet the established instructional objectives. The papers collected in this publication will be of benefit to all educators who deal with the handicapped.

Giftedness

During the past few years, renewed attention has been given to identifying the gifted student. This is true also in programs for the deaf. Studies are now being conducted in many schools for the hearing-impaired to locate and evaluate the students' capabilities for accelerated and expanded instructional programs. An outstanding example is the TAG Project (Talented and Gifted) at the Texas School for the Deaf in Austin.

In discussing strategies for implementing IEPs for such students, Fleury, MacNeil, and Pflaum wrote:

> "Media can serve the creative spirit of the gifted hearing-impaired students. High verbal skills are not necessarily a criterion for creativity. Students derive satisfaction from producing their own media as it provides them with an avenue of expression to share their intellectual curiosity and excitement. Working with media gives them motivation to research and gather information, evaluate and organize it, and plan to present it in a way that is most meaningful to them.

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

> Preparing to share their interests through media is the kind of long-term goal and challenge on which gifted students thrive."

Enjoyment of good literature, of the visual arts, of drama, can be intensified. Schmitt and Winters have described the satisfactions of a student-produced media presentation of a selection of poems:

> "Poetry for bright deaf youngsters is important. Experiences in mediating poetry present opportunities for involvement in the creative process. This is an experience that is becoming increasingly more difficult to provide in this era of IEP behavioral objectives and minimal proficiency standards testing."

Fleury, MacNeil, and Pflaum went on to say:

> "Traditionally, media for the hearing-impaired must be highly visual. For the gifted hearing-impaired, it must also allow for a high degree of flexibility, assist with vocabulary development, and encourage development of language, critical thinking, and evaluative skills. It should be highly interactive with the opportunity for gifted students to produce their own materials and hone their sophistication of technological media. The creative mind of the gifted hearing-impaired cannot be overemphasized and must not be underutilized."

Among recent technological advancements, the computer offers new avenues of learning. It requires a level of interaction, which is especially appropriate for the gifted hearing-impaired learner because the medium is predominately a visual one. There are directions and procedures to follow and a beginning vocabulary to learn. As the software is developed more and more, opportunities will open for the education of the deaf. Comden wrote:

> "We can no longer consider computer literacy as an educational frill, but as an integral part of our educational program."

In summary, Schmitt and Winters said it well:

> "When average or slow learners have difficulty grasping basic concepts, teachers hurry to employ multimedia techniques because they know through experience that such techniques motivate, clarify, and pack a wallop. We do not always make such elaborate efforts for bright students, unfortunately. They read, after all. We assume that because they can manage novels and term papers, they are, therefore, creative, imaginative, and affectively intact."

And Judith Solomon defined the challenge when she said:

> "If it is a requisite to avail ourselves of our new technologies in education of the hearing-impaired, think what an even greater challenge it is to utilize these technologies in the service of that 'minority within a minority' the gifted hearing-impaired child."

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

Developmental Disabilities

Coupling deafness and another handicapping condition creates a very different environment in which to conduct the teaching/learning process. This continues to be a challenge to teachers at all levels of instruction. Counseling also takes on a different atmosphere. Boham and Selkowitz wrote:

> "It is difficult to counsel multihandicapped hearing-impaired (MHHI) students. Severe language deficits, minimal signing skills, levels of mental retardation, extreme aggressiveness, and limited attending behaviors are characteristics found in many of these students."

These are the same problems that face the classroom teacher. To partially alleviate the circumstances, teachers, counselors, and supervisors turn to media for assistance. In selecting educational media for use with these students, there is a major decision to be made as to which sensory input is desired. Should the student's dominant sense be the channel for instruction or should the residual ability of the impaired sense be further developed? Of course, the answer is that both methods should be employed. It is highly desirable that residual hearing (for the deaf) be developed to the fullest and listening skills be continually improved. At the same time, visual skills need to be continually refined and developed. Although it is fairly obvious that the deaf student will learn more readily by visual means than any other way, one cannot assume that because the deaf student is being taught with visual materials that he or she actually understands the concepts and information being presented.

With more than one handicap, the role of media becomes more critical. Minton and Attletweed said it this way:

> "There are so many possibilities available through media for teaching functional skills to multihandicapped hearing-impaired students. It is becoming more apparent to us what a rich resource media can be as we continue to shape our curriculum."

A further comment in regard to resources was made by Dierksen and Peters:

> "A variety of materials is necessary to keep students interested and provide the repetition necessary to assure that they do assimilate the concepts presented."

Chapman reminded us to design and use media that are relevant to the student's abilities, rather than disabilities.

One important observation that came from a study of the availability and accessibility of suitable instructional materials for teaching the multihandicapped was expressed by Evans in the form of a question:

> "Why is there a need for teachers of preschool hearing-impaired children with developmental disabilities to create their own educational materials? It is their desire to reach children, not just to present curriculum."

This points up an area of expertise that dedicated teachers of the deaf need, and one, which they almost universally display—the ability to create teaching materials uniquely adapted to the needs of their

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

students. In fact, this ability must be fairly sophisticated if the full range of media is to be exploited. In addition, teachers need access to the services of a qualified media specialist for assistance in the design and utilization of some forms of media. Materials thus produced can be shared among all the professional staff who work with a given student or group of students. Continuity, a common vocabulary, and a common experiential background are thus provided. Minton and Attletweed described just such an approach in practice at the California School for the Deaf at Fremont:

> "This integration of experiences is particularly useful in working with low verbal students since they have so much difficulty telling other people of their activities and interests. By sharing media, the other staff [members] with whom the students are involved have an advantage in seeing what the students have been doing and thus are able to help the students express what is on their minds. Such sharing holds particular promise as a means of helping to better integrate the school and cottage programs."

The use of instructional media and the ability to design instructional media are skills today's teachers cannot afford to be without. Individualized programs, the child-centered curriculum, demand this kind of expertise.

Deaf-Blindness

Of all the combinations of two handicapping conditions, the most severe is deaf-blindness. It is known that a very high percentage of all learning occurs from the combined sensory input of vision and audition. When one of these prime avenues of perception is impaired, learning becomes more difficult. When both of these senses are damaged, the difficulty increases exponentially. Even with these handicaps, many people lead successful lives. As was brought out in many of the papers, the instructional plan for each deaf-blind student varies according to the degree of loss of both vision and hearing. Fischer called attention to the importance of the learning environment and instructional facilities in achieving established educational goals for the student with impaired vision and hearing.

Bravin made a distinction between enhancement and substitution as methods of using instructional materials.

> "The first attempt would naturally be to try to *enhance* as much of the vision as possible. And then to try aids such as magnification or large-print material. The form can vary from a simple model like a magnifying glass to a sophisticated device such as a closed-circuit television, which enlarges regular type."

Attempts at enhancement should also include exploration of various kinds of amplification of speech if usable residual hearing remains. Bravin further explained:

> "If the deaf-blind student, even with the best of visual enhancements available is not able to read printed material, *visual substitution* should be introduced in the form of tactile 'reading.' "

Substitution methodology relies heavily on technology. The devices employed are not those to which most educators refer when the term "instructional media" is used. However, each is a highly specific

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

medium for communication, and the design of each breaks down a barrier for these severely handicapped persons. For example, Bravin described a reading machine that can be linked to a computer to generate output in the form of Braille or a synthesized speaking voice. In a real sense, today's media technology is improving the potential quality of life for the handicapped.

Grell and Howard called attention to the use of the typewriter as a means of expressive communication for the deaf-blind. They also noted the importance of a resource room and resource teacher to those students who are able to be mainstreamed for part of their educational program.

Special Reports

One of the most successful applications of technology to education, entertainment, and communication for the hearing-impaired viewer is the recently broadened development of closed TV captions through a decoder.
Caldwell said that closed captions are:

> "The greatest breakthrough since the first school for the deaf was founded in the country over 150 years ago."

More than 20 hours per week of television programming are now available, with more promised in the near future. Three television networks—NBC, ABC, and PBS—are participating in these programs. The deaf have accessibility for the first time to a medium (TV) that has been available to their hearing peers for more than 30 years and one which is largely taken for granted by the general public.

Closed captions are going to provide several indirect educational results beyond partially compensating for the deaf person's hearing loss. One by-product will be vocabulary development. The captions printed on the screen will contain, occasionally, words not in the viewer's vocabulary, even though the spoken message is edited and transcribed very carefully. In a sense, the vocabulary is defined in pictorial form by the scene in the background. The opportunity to observe good sentence structure is also a by-product, along with motivation for reading. Caldwell pointed out that:

> "It is no secret to this audience that deaf youngsters typically function in a verbally impoverished environment. Reading is their prime tool for developing independence in learning, yet reading retardation and language deficiencies have long been positively identified as prime contributors to their existing cumulative deficit in academic achievement means."

Of captioned television, Caldwell said:

> "They are forced to read more but are now more eager to do it. In the pleasant environment of television, improved reading and comprehension skills are extended beyond the mastery of content to enhanced language skills and refined thinking skills . . . Indeed, well-constructed captions can be considered a form of continuing education to improve communication skills for hearing-impaired persons of all ages."

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

A logical gain from this technique is a better-informed deaf citizenry. The deaf may now feel a sense of knowledge gained and be more inclined to enter discussions about special events, daily news, and TV personalities.
Two very interesting projects of national significance have been established at George Peabody College of Vanderbilt University and the University of Nebraska-Lincoln. These are: the Instructional Media Production Project for Severely Handicapped Students (IMPPSHS) and the Media Development Project for the Hearing-Impaired (MDPHI), respectively.

IMPPSHS has specific tasks to perform. McLean and Hughes summarized the objectives as follows:

> "The tasks of the Instructional Media Production Project are to locate, review, and classify existing educational media products that relate to the education of severely handicapped students and then to produce products to meet needs not yet filled by commercially available materials.
>
> "The two specified curricular areas of review, adaptation, and new development are 'age-appropriate response to others' and 'job preparation/skills development.' The first area refers to building verbal and social skills of severely handicapped students to bring them closer to the level of other students their own age, while the second area refers to prevocational and vocational skills that will allow severely handicapped students to take a more active role in the working world when they leave school."

MDPHI has similar functions to fulfill in this project. Propp and staff explained these plans as follows:

> "The broad goals of the MPHI are to adapt existing materials or develop new materials for the hearing-impaired in areas where there is an identified need. Materials to be adapted or developed are identified by an extensive search and locate effort. A requirement of the contract is that all materials must be validated. Thus, all project functions are described as search and locate, adaptation, development, evaluation, marketing and dissemination, symposium, and liaison."

Both of these projects are funded by Captioned Films and Telecommunications Branch, Division of Educational Services, Office of Special Education, Department of Education.

CONCLUSION

Several of the papers discussed the effect and usefulness of multimedia packages. Owner and Ulissi, in their presentation of "Conflict Resolution Training," described the use of a multimedia and team approach to assist in solving behavioral problems. Coyle wrote about the multimedia package he developed to teach an understanding of lens curves. Kessler used media in an interesting way to prepare students for an "Outdoor Experiential Education Program." He explained that:

> "As an integral part of the experience-based instructional process a six-projector, multi-image slide presentation was developed in order to motivate students, reduce anxiety, and use the motivation and enthusiasm to teach

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

technical skills and focus on interpersonal relations in an experiential activity known as a 'wild walk.' "

Carefully selected materials in a variety and combination of modes can provide an impact, which helps the handicapped person, learn in spite of his/her handicapping condition(s).

An excellent example of out-of-classroom use of media is the program at the North Dakota School for the Deaf. Gillette described the program as an "attempt to remediate part of the students" language and vocabulary deficiencies. These deficiencies are due to the students' deafness, other handicaps, and not living at home. By not living at home, the residential students miss out on a multitude of necessary learning situations that usually occur in the home. In this case, media are used to synthesize experiences and situations that occur in ordinary family living, in order to provide students with informal vocabulary lessons, bases for conversation and group discussion away from a classroom atmosphere.

The papers cited briefly in this summary, and all the presentations at the symposium, gave heartening evidence that a great deal of ingenuity is being brought to bear in schools for the deaf around the country in the common effort to educate hearing-impaired students, whatever their personal circumstances happen to be. Instructional media provide tools that can serve creative teachers in their efforts to tailor each child's program to fit his or her individual needs, strengths, disabilities, interests, and ambitions. Technology is continually improving, refining, and adding to the media arsenal.

The challenge to educators is to reinforce their own ingenuity by keeping abreast of what is available and by sharpening their skills of *selection*, so that they choose the instructional vehicles that will best serve the needs of a particular student or group of students, whether those needs be for motivation, communication and self-expression, social development, academic growth, or whatever purpose.

Several messages came through at this symposium. First is that identification of giftedness should not be based on intelligence testing only. There are many areas of participation and performance that will demonstrate creativity and excellence in students whose cognitive development may not be outstanding. The hearing-impaired learner must be offered more than one form of response to instruction.

Second, the profession needs to explore a broad range of instructional materials for the multihandicapped learner. Although materials designed for a specific handicapping condition may be readily available, it is difficult to find suitable materials for these special learners with a combination of handicaps. Sometimes existing materials can be modified so as to make them appropriate.

Third, the hope of the future for the deaf-blind student is application of advanced technology and science.

Fourth, among recent advances in technology, there are four—all related electronically—which are significant in the education of the hearing-impaired. These are videotapes, videodiscs, closed captioning, and computers. They are all comparative newcomers in the field, but their potential is exciting.

Fifth, one theme that repeatedly occurred was that instruction for handicapped students must be interactive, particularly for the hearing-impaired. The design of the media must involve and require a response from the student. It is desirable that the student be offered an option as to the mode of

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education

his/her response, but it is no longer feasible to expect or allow the learner to play the role of passive receiver of instruction. Forsdale wrote:

> "We in the instructional materials field have a resource we have underutilized: the learner himself. Although his *needs* have long guided us in the content of our materials, his *capabilities* have frequently been largely ignored."

Today's instructional media can give hearing-impaired students the opportunity to be active participants in their own education.

Funding for the Described and Captioned Media Program is provided by the U.S. Department of Education