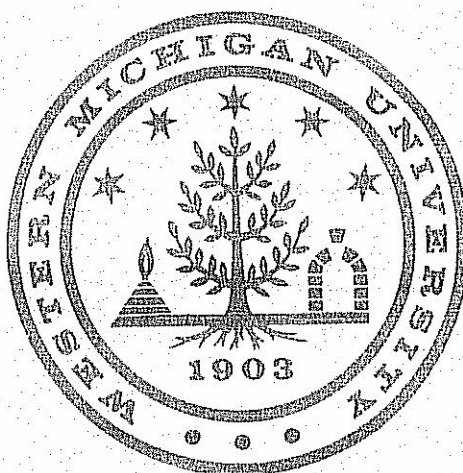


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NEW DIRECTIONS FOR DEAF EDUCATION

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Kalamazoo Valley Multihandicap Center
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Presented at
The Fourth Annual Convention
of the
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NEW DIRECTIONS FOR DEAF EDUCATION

The education of deaf children in the United States has been accurately summed up by Herbert Kohl in a report on Language and Education of the Deaf (1966). Kohl writes, "The major conclusion that can be drawn from a thorough investigation of the literature on the education of the deaf is bluntly that it has failed. None of the methods currently used in the American schools for the deaf have produced results which encourage any optimism," (p.13). This failure is exemplified by the fact that a deaf adult is considered exceptional if his or her reading repertoire exceeds the seventh grade level. There are several possible explanations for this situation, most of which concern the theoretical analysis of language. It is the function of this paper to partition out the historical as well as the current variables which seem responsible for this situation, analyze them within an operant framework, and then suggest new directions for deaf education.

Sign Language - The Main Issue

For almost 200 years the educators of the deaf (most of whom are hearing people) have been arguing over the appropriateness of the use of Sign Language as a native language for deaf persons. On one side, educators say the major objective of deaf education should be to teach the deaf person the vocal skills necessary to survive in the ever-present hearing world. Signs, they believe, will retard vocal development because of their ease of use and attempts at development will be unsuccessful. This philosophy is typically called the "oral approach" and makes extensive use of lip reading, speech therapy, amplification, pictures, written words, as well as other

visual stimuli (except signs or fingerspelling) to educate the deaf.

Other deaf educators state that deaf persons need Sign Language in order to acquire all the skills that a normal language repertoire will provide. They make the case that spoken languages (especially English) are far too complex to acquire an extensive repertoire without the benefit of hearing the words spoken in them. Signs, they say, will help the child better understand those words without decreasing the quality of articulation. This philosophy is typically called "total communication" and makes use of the same techniques as the oral approach but with the addition of fingerspelling and sign language.

It is not the function of this paper to contrast these positions or to provide an extensive review of the literature, for that has been accomplished by Amy Barmeier (1978a). Her conclusions are clear, "...There's no evidence that Sign Language impairs vocal development...Sign Language results in much higher academic skills... Sign Language provides stronger reading repertoires...and children who sign have fewer behavior (including emotional) problems." However, this rather large body of literature seems to have had little impact on the development of Sign Language and the educational practices common to the field. Donald Moores (1974) writes:

The American Sign Language remains an exotic language. It is subject to less scientific analysis than many dialects spoken by isolated tribes in the most primitive inaccessible areas of the world. There are a number of explanations for such neglect. Of primary importance has been the tendency of many educators of the deaf to treat any form of manual communication as behavior that must be repressed. During the 20th century, until the decade of the 1960's, all programs for the deaf in the United States professed to follow

an oral-only philosophy of education, at least until age 11. After this age, some programs would allow their "oral failures" to be exposed to signs in the classroom. Children were considered failures because they did not meet one criterion for success - to speak well enough to become part of the hearing world. Because the goal of education was "normalcy", i.e. speaking, a prejudice developed against signs as alinguistic, concrete and inflexible. (p. 76)

Still, for unclear reasons approximately half of the states in this country do not allow deaf children to use Sign Language in the schools. In fact, often there is some form of mild punishment (e.g. loss of privilege) for doing so. This occurs despite extensive requests by deaf students and adults.

The problem is not the educators themselves, for they have been shaped by the philosophical orientation of an elite and powerful group - the ^{psycho}linguists. Because the problems of deafness essentially concern language, the educational field has almost completely relied on ^{psycholinguistic} ~~linguistic~~ theories for the development of programs. The major position by most linguists has been an opposition to the treatment of Sign Language as a "true" language. This opposition is largely a result of the theoretical position that language is what separates man from lower organisms - that is, man is born with an innate capacity for language and this capacity is demonstrated by his ability to speak words. Also, it is said that man possesses unique internal (cognitive) language devices which accept, process, store and produce spoken words. Unfortunately, these theories have probably retarded the intellectual development of the entire culture.

The theoretical error is threefold; (1) their strict emphasis on vocal topographies alone, (2) their attribution of language abilities to man because of his biological structure; (3) and their treat-

ment of language as being controlled by cognitive events. These constitute the essential features of what is called a formal analysis of language which is the position (to varying degrees) of language theorists such as Noam Chomsky, Eric Lenneberg, Roger Brown, and Jean Piaget. A formal analysis can be contrasted to a functional analysis which has been developed in detail by B.F. Skinner in his book Verbal Behavior (1957). The comparisons of the two fields is available in the literature (MacCorquodale 1970, Catania 1972, Richelle 1976). The distinguishing feature of Skinner's analysis is an emphasis on language as behavior controlled by its relationship with antecedent and consequent environmental events, as well as those operations that establish those consequences as effective forms of reinforcement (e.g. deprivation, aversive stimulation). Such an analysis treats Sign Language as equally capable of verbally affecting the environment and essentially equal to vocal behavior in every way except the difference in the specific topographies (e.g. the vocal response "cup" versus the sign response "cup"). There are several other features of Skinner's analysis which clarify the nature of Sign Language and its use in language training. These have been previously dealt with by Sundberg (1978) and Sundberg, Michael and Peterson (1977).

The Historical Development of the Resistance to Sign Language

The educational resistance to Sign Language has been a theoretical and historical misconception. This began with the statements made by Samuel Heinicke, the "father" of oral-only philosophy in his series of letters to Abbe Charles De L'Epee, the "father" of the sign philosophy, and his student Abbe Stork (a total of seven letters

letters were exchanged between 1780 - 1782). Heinicke writes:

I maintain that (1) the lack of hearing cannot be replaced with the help of sight. Through sight we obtain inner impressions of colors, shapes, and surfaces which are then presented as abstracted in our imagination; yet we must not believe that because words permit themselves to be represented on paper that they therefore can be similarly presented inside ourselves. (2) Abstract concepts cannot be developed through the aid of writing and signs. (3) In a short time the signs and the words based upon them will be forgotten by the pupil. (pp. 23 - 24)

It is clear that these analyses are based on cognitive explanations of language. However, these specific issues are no longer critical to the scientific community. That is, research in deafness (American Annals of the Deaf, 1847 - present and the Experimental Analysis of Behavior, 1958 - present) provides empirical data which refute his three points. However, Heinicke's impact on deaf education remains with us. He strongly influenced a decision made by the International Congress on Deafness in Milan, Italy in 1880 which for unclear, seemingly emotional, reasons remains with us today. The Congress passed a resolution stating that the use of manual communication of any kind would restrict or prevent the growth of speech and language skills in deaf children. This is clearly a theoretical misconception, for data to the contrary are now available (e.g. Vernon and Koh 1970, Barmeier 1978).

The Current Situation

Unfortunately, the opposition to Sign Language is a powerful one in that persons with reputations for extensive scholastic achievement in the analysis of language still oppose its use. Erwing and Erwing (1964) recommend against the teaching of Sign Language as an

alternative to spoken language because they believed signs could not constitute a language. Van Uder (1970) refers to "the dehumanizing influence of the signs themselves," and states, "linguistic development may be retarded if signs are used as a means of communication." Hans Furth (1966) writes about the signing deaf person being forced to think without language.

Eric Lenneberg has further muddled the educational process for deaf persons. In a Special Study Institute held at Western Maryland College, June 28 - July 23, 1971 he stated:

The conclusions we must draw from these considerations (the biological analysis of language) is clear: we don't really know how we communicate via language and therefore we do not know what principles to impart to children if they have not begun to speak by themselves. If the child's brain functions are not yet ready to do language synthesis there is no way of making him talk. Once he is ready, the child does not imitate utterances, but develops the principles by means of which he becomes capable of producing utterances. Hence, all a teacher can do for a deaf child is to supply him with the raw materials that will, hopefully, stimulate his synthesizing activities - feed language into him, let him have as much language as possible. How to do this...that is the teacher's primary problem. (p. 40)

All of these views (Lenneberg's and others) stem from an obsolete and incomplete point of view which unfortunately, almost totally dominates the field of education. Such scholars can't understand how we communicate because they attribute it to idea, thoughts, meaning, purpose and other things we can't observe. Their positions can never be empirically demonstrated because their major emphasis is on those events which are beyond observation and measurement (e.g. internal synthesizing devices). On the other hand, a functional analysis which treats language as behavior under the control of environ-

mental variables concerns itself with subject matter which is observable and measurable, therefore, much more easily trained. Those persons who can provide such an analysis do know how we communicate and what repertoires to impart to children, as well as how to teach teachers to impart such repertoires (Sundberg 1978, and Peterson 1978).

However, there is a problem in the fact that the study of language is quite complex, and for the teacher or educational programmer to make use of a functional analysis, as well as learn to distinguish it from a formal analysis, help is necessary from the field of Behavior Analysis. Persons within this field have already played a leading role in the revision of traditional educational practices around the world. Their scientific technology of dealing with behavior and its controlling variables has resulted in extensive improvements in human life (e.g. Ulrich, Stachnik, Mabry 1966, 1970, 1974, and the Journal of Applied Behavior Analysis 1968 - present).

The current situation in the deaf culture can be greatly improved by a major revision of educational practices as well. This revision would largely entail making use of already well developed technology that has resulted in major advances in all aspects of education as well as business and industry, government, economics, ecology, poverty, daily life, the aged, the retarded, and virtually all human problems (e.g. phobias, aggression, marital difficulties).

The New Directions for Deaf Education

The essential feature of this proposed new direction is the use of a functional analysis of human behavior for all aspects of deafness. The body of literature which uses a functional analysis in solving human problems is a relatively new and complex one.

However, many programs have been designed to clarify the analysis for the non-scientific community (especially by R.V. Hall, 1976, as well as R.W. Malott, 1976). Once an individual acquires the basic vocabulary (e.g. reinforcement, shaping, extinction) extensive use can be made of the thousands of research reports and programs now available.

It is the function of this portion of the paper to point out research that will aid educators in providing data based educational programs for deaf individuals. These reports and research articles include areas such as: language, educational programming, educational materials, classroom management, parent training, community living, psychological and counseling services, self management, sexual behavior, and employment.

The field of deafness is greatly in need of empirical, single organism research. Such research has contributed to the effective treatment of other populations and it is long past time for the deaf to benefit from the same approach. The research areas are broken down to three major categories: (1) language (2) educational technology (3) social behavior.

Language

Language has been, of course, the main theme of this paper. The formal analysis of language has resulted in major misconceptions in language instruction (even more so for the deaf person due to being forced to acquire language orally and with inadequate programs.). The new direction in language instruction for the deaf persons involves teaching what Skinner (1957) calls the "verbal operants" (Skinner includes signs as verbal behavior - "verbal" should not be

confused with "vocal"). Skinner's analysis may be acquired by consulting Peterson's programmed text (1978). A functional analysis of Sign Language and its applications may be found in Sundberg, Michael and Peterson (1977). A program for teaching the verbal operants may be found in Sundberg (1978), and the language areas in need of an experimental analysis may be found in Sundberg, Ray and Reuber (1978). It is interesting to note that Prickett and Hunt (1977) in their article, Education of the Deaf - The Next Ten Years, cited "a major breakthrough in language instruction," as being ranked second, only to medical advances, as highly desirable - but unlikely to occur. Comments by some of the deaf educators consisted of, "... though desirable, there's no ongoing research that indicates such a possibility...educational techniques and linguistic research will bring this about."

EDUCATIONAL TECHNOLOGY

The Journal of Applied Behavior Analysis (1968 - present) contains the main body of research which utilizes a functional analysis of human behavior. The areas range from classroom management to toilet training, with numerous articles on educational programming and behavior problems. Several other books and articles contain useful information and will be cited when appropriate. The areas which seem most relevant to deafness will be listed and a small sample of articles will be cited. One may obtain more information by consulting the reference sections of the individual articles.

Academic Behavior

An extensive amount of research has been conducted on various topics. Some are the use of token economies, report cards, concept programming, homework, peer tutoring, prevocational skills, teaching strategies, contingency contracting, attitudes, spelling, writin, and arithmetic (reading will be covered separately). The articles and authors are too numerous to mention for this section. The reader is asked to consult the Journal.

Classroom Applications

Programs have been developed which greatly improve the current technology for educating persons at all levels. For preschool, see Bushell, Worbel, and Michaulis (1968), for primary, see White-Blackburn, Semb, and Semb (1977), for junior high, see Main and Munro (1977), and for high school, see McAllister, Stachowiak, Baer, and Conderman (1969). An extensive body of literature may be found on college education (Keller, 1968; Skinner, 1968; Michael, 1974; and the Journal of Personalized Systems of Instruction, 1977 - present).

Educational Materials

It is commonly thought that the deaf person has exceptional visual skills. This is somewhat true, but not for the reasons commonly cited (e.g. the loss of one sense biologically strengthens the other). The deaf are simply forced to acquire most of the verbal as well as non-verbal behavior through visual discriminations, which due to the contingencies become a strong repertoire. Traditional programs have far overlooked the complexities of visual stimuli and fail to adequately program material. Work in the area of visual errorless learning (Schoemuller, 1977; and Touchette, 1971) can

have a major impact on the development of educational materials. Also, the field of Programmed Instruction can greatly contribute to current technologies used for developing educational materials (Skinner, 1968; Holland, 1967).

Parent Training

The problems of deafness are usually quite novel to the hearing parent, yet virtually no data based programs are available for such parents. Also deaf parents with hearing children need carefully programmed instruction. Research in parent training is very critical to the development of the deaf culture, and the technology may be found in Patterson (1971) and Budd, Green, and Baer (1976).

Teacher Training

The technology required to adequately educate the deaf person is quite complex. The ideal teacher must (1) be fluent in the American Sign Language, (2) be knowledgeable with regards to verbal behavior and how to teach it, (3) be knowledgeable of the psychology of deafness, (4) have good classroom management skills, (5) and have an area(s) of specialization (e.g. mathematics, physics, literature). These constitute an incredibly complex set of repertoires, yet for the deaf person to be adequately educated such training is necessary. An extensive body of literature on teacher training is available, but (as most other areas in deafness) specific programs need to be developed for deaf teachers. The technology is well developed, but the applications to deafness have not occurred. One may consult Clark and Macrae (1976), Skinner (1968), and Andrasik and Murphy (1977). Also, evaluation of teacher training is also necessary (Parsonson, Baer, and Baer, 1974).

Self-Management

The deaf person, like other people, needs good self-management, yet there are no programs which deal with the personal problems of being deaf. Programs for the management of such events need to be developed specifically for deaf persons. An excellent book by Carol Foster (1974) can be used as a base as well as research by Ballard and Glynn (1975). Self-government is a related issue and also is critical within the deaf world, (Fixen, Phillips and Wolf, 1973).

Community Living

The problems of the deaf person in the natural environment are very unique to deafness. There is a tremendous need for research which will help develop the technology for better community programming. The basis for such work has been done by Page, Iwata and Neef (1976) and Fawcett and Fletcher (1977). Their research projects need to be extended to deaf populations.

Employment

Programs need to be developed for teaching the deaf person how to find a job. Such a technology is available in the article by Jones and Azrin (1973). Again, more research is necessary to develop the technology for deaf persons. Other techniques for management of employees and interactions with superiors must be developed (Herman, de Montes, Dominiguez, Montes and Hopkins, 1973; Schroeder, 1972).

Community Education

Currently, there is little opportunity for the deaf adult to acquire more complex repertoires. Programs need to be developed which will maintain as well as advance the intellectual skills of all levels of adults. A technology is available in Fawcett and

Fletcher (1977).

SOCIAL BEHAVIOR

Cooperation, Sharing, and Social Interaction

Teaching persons to interact with others in a positive manner is a complex task. Several experimental studies have been completed by Hake and Vukelich (1972), Hake, Vukelich and Olvera (1975), as well as Matthews (1977), and Rogers, Warren and Baer (1976). The application of these procedures to deafness can greatly improve the social interactions of students.

Addictive Drugs

There is a body of research on the reduction of drug and alcohol abuse which needs to be developed for the deaf culture. A review of the findings and current research on this topic has been completed by Stoltz (1973). Also, a body of research exists on the reduction of smoking (Azrin and Powell, 1968) and alcohol consumption (Garlington and Daricco, 1978).

Sexual Behavior

There is a need for the development of programs for dealing with sexual problems. The technology for such programs has been implemented and reviewed by Barlow and Agris (1973) and Rekers (1977).

Aggressive Behavior

Deceleration of socially inappropriate behaviors is a difficult and complex task. Programs have been developed which effectively control children's aggressive behavior while simultaneously increasing more socially acceptable behavior (Bostow and Bailey, 1969 and

Zeilberger, Sampsen and Sloane, 1968).

Counseling

The problems of deafness are unique to the handicap. Effective counseling is critical for the development of the culture. The technology has been designed by Schumaker, Hovell and Sherman (1977).

Delinquents

The development of better programs for the incorrigable deaf youth are necessary. The technology has been developed by Fixen, Phillips and Wolf (1973) and Williams, Barackmann and Kirigin (1977).

In conclusion, all of these areas need to be specifically designed to deal with the problems of deafness. Such research should constitute major changes in the current status of the deaf culture - a long awaited direction.

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