



**HEY,
don't forget
about me!**

education's investment
in the
severely, profoundly, and
multiply handicapped

a report from the cec invisible college on the severely,
profoundly, and multiply handicapped

**HEY,
don't
forget
about
me!**

education's investment
in the severely, profoundly,
and multiply handicapped



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Edited by
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The wind blows out, the bubble dies;
The spring entomb'd in autumn lies;
The dew dries up; the star is shot;
The flight is past—and man forgot.

— Attributed to Dr Henry King,
Credited to Francis Beaumont
(1600) in a periodical publication
about 1829

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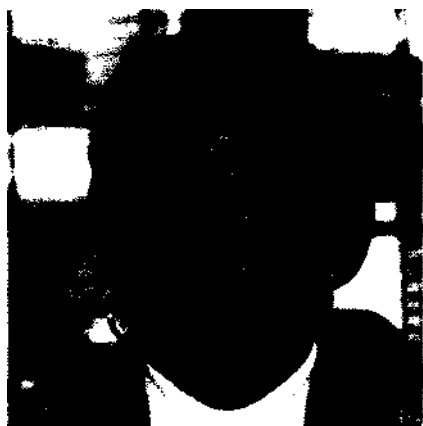
participants



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Lou Brown, Ph.D., is Professor at the University of Wisconsin. His professional career has concentrated on serving the needs of significantly retarded individuals. Dr. Brown's tenure has resulted in model programs relative to university/public school cooperative training. Dr. Brown's strong belief that every person has a vocational future has motivated him to delve into the components which make for successful work performance of retarded students.



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Lawrence A. Larsen, Ph.D., was Director of Psychology, Education and Research, Western Carolina Center, Morganton, North Carolina, and Adjunct Assistant Professor of Special Education, Appalachian State University, Boone, North Carolina, at the time the Invisible College was held. Presently he is Director of Personnel Preparation in the area of severely and profoundly handicapped, Johns Hopkins University, Baltimore. Dr. Larsen's track record of contributions to the welfare of profoundly and multiply handicapped individuals was established long before the Invisible College. In addition to publishing extensively in this area, he has served as a consultant to the Developmental Disabilities Technical Assistance System and is currently the co-editor of the Associate Teaching Personnel department of Education and Training of the Mentally Retarded.



Edward William Sontag, Ed.D., is Chief, Program Development Branch, Division of Innovation and Development, Bureau of Education for the Handicapped, US Office of Education, Department of Health, Education, and Welfare, Washington, D. C. In 1974 he received the Distinguished Alumni Award from the State University of New York College at Buffalo. Dr. Sontag knows special education from the perspective of classroom teacher, the university instructor, the state department administrator, and the national level coordinator. Contributions to the field include his reality based simulation materials for the training of special education administrators and the prescriptions for what must be done to effectively include the severely and profoundly handicapped in public school programs.



Ruth Christ Sullivan, M.A., is Director, Information and Referral Service of the National Society for Autistic Children, Huntington, West Virginia. Being the parent of a 16 year old autistic son, Mrs. Sullivan brought to the Invisible College pertinent personal insights. Through her articulate and voluntary advocacy she helped establish the New York State Society for Autistic Children, organize NSAC's first two national conferences, and secure provisions to include autistic children in West Virginia's mandatory education legislation. She founded and was the first president of the Capital District Chapter of NSAC in Albany, New York. She has been the initiator, author, and project director of numerous federal contracts and grants with HEW's National Institute of Mental Health and Office of Child Development. Mrs. Sullivan is past president of the National Society for Autistic Children.



Nancy A. Scheuerman, B.S., was a program support teacher in the area of the severely/profoundly handicapped prior to her present position as a classroom teacher of the trainable mentally retarded at Gompers Middle School, Madison Metropolitan School District, Madison, Wisconsin. Mrs. Scheuerman places importance on what the practitioner needs from the researcher and the teacher trainer in order to develop programs for low functioning individuals. She has been instrumental in designing and implementing an empirically based instructional delivery model for serving severely handicapped students.

Richard D. Sherr, Ed.D., is currently Director of Special Education Services, Lancaster-Lebanon Intermediate Unit 13, Lancaster, Pennsylvania. Dr. Sherr has served as school psychologist and guidance counselor prior to his present position, and he has also been a member of the Pennsylvania state task force on mental retardation. His professional, civic, and volunteer community activities indicate commitment to the handicapped, and his testimonies before The Council of Great Cities, the US Senate Subcommittee on the Handicapped and the President's Committee on Mental Retardation show his support of educational programs for exceptional children.

preface

- *HEY, DON'T FORGET ABOUT ME* is one visible result of an Invisible College on the Severely, Profoundly, and Multiply Handicapped conducted by The Council for Exceptional Children. Used successfully many times previously, the concept of the College expedites the dissemination of theory and practice generated by key leaders in the field. However, never before has the term been so appropriately applied. Truly, the severely, profoundly, and multiply handicapped have historically been the most invisible of all our impaired children. Conspicuous by their absence among consumers of service deliveries, the forgotten, the unserved and underserved are now included by federal mandate in public education programs.

Because of priority concern being given these individuals and the complex needs unique to this population, an Invisible College was convened. Norris Haring, Lou Brown, and Richard Sherr planned the conference and invited nine other participants with expertise in specific areas relevant to the topic. The College met in a two day closed session on January 12-13, 1976. The chapters in this book are based on the presentations made at that time. They follow a logical sequence beginning with the definition of the desired end, an ultimately functioning individual, and subsequently proceed to delineate the means to that end.

Many disciplines touch the severely handicapped person over a period of his or her life space. The need for multiple inputs in terms of early medical identification, teacher preparation, program implementation, research, and governmental assistance was taken into account in selecting the participants of the College and preparing the contents of the book. A parent was chosen as one contributor to represent those who live the vigorous role of advocate and consumer. This effort, nonetheless, is recognized as only a part in the evolution of an ongoing project. For example, vocational preparation and state plans for serving the severely handicapped are two components which the reader will find missing and which, hopefully, the reader will help us bring to fruition at a later date.

The wide array of services needed to help the severely handicapped lead fulfilling lives can result in many agencies, many professionals, and many organizations working together rather than existing in mutual exclusion. There are other positive aspects. The severely handicapped child is unlike a normal youngster who will survive whether or not he has a good second grade teacher, and different from a typical child who will bounce back from a little infection whether or not the doctor gives him the best prescription. The extreme deprivation of the severely handicapped makes it crucial that those trying to rectify their impairments take the utmost care and make the best investigation of any intervention content or technique. If this causes adults to be more precise in their modeling, clearer in their communication, and more analytical in their instructional tasks, then the whole teaching-learning process will benefit.

That is the intention of "Hey, Don't Forget about Me."

M. Angele Thomas

introduction

norris g. haring

- During the last 15 years, special educators have been participating in a revolution. It has not involved shots fired or (usually) blood spilt—at least, not in any but the figurative sense. But it has certainly produced some revolutionary effects. The revolution I am talking about has produced a transformation in the public consciousness concerning handicapped children and what could be done for them. Fifteen years ago the public was still reeling from the impact of Burton Blatt's *Christmas in Purgatory*, a photoessay on inhumane conditions in institutions for the mentally retarded. Fifteen years ago it was taken for granted that children who exhibited severe, multiple, or profound disabilities lived under sentence of exile from their families—deferred sentence, perhaps, but nevertheless an inevitable one. Even after recognition of the fact that the conditions in the Willowbrooks and Partlows *were* as bad as they were, it was some years later before public consideration was given to *alternatives* to institutionalization.

With the publication of various compilations of deinstitutionalization plans and papers, studies and prospectuses, the idea of "normalization" began to filter through to the public consciousness. The advances in behavioral sciences following the rise of a "new behaviorism" in the early 1960's made possible the shaping of undreamed of competencies even in children whose presenting disabilities were very serious; and the aroused public witnessed in the aftermath of the Partlows and Willowbrooks showed increased receptivity to the news that the severely, multiply, and profoundly handicapped could be helped. The ideal of normalization of life style, with equal educational opportunity for all children, no matter how handicapped, was one whose birth met with a highly receptive environment. Now the education of the severely handicapped is an area whose time has come. It is an area whose specialists have just begun to realize the first fruits of progress. Specialists have indeed found some answers; but answers always generate more questions. It is with this in mind that we entered into the Invisible College on the Severely, Multiply, and Profoundly Handicapped. We have attempted here to relate our discoveries—what we have learned how to do and what we have learned must still be done.

For example, we have acknowledged here the importance of the technology of behavior change in relation to this population. This technology did not exist at the time special education was born; it has grown up over the last 25 to 50 years and has truly revolutionized the art of special education. Without this technology, the effort to improve the functioning of the severely handicapped would have been a futile series of trials and errors.

But, when we look closely at the degree of application of behavioral technology to the education of the severely handicapped, we see that special educators are often ill equipped to address skill areas such as self feeding, toileting, dressing, or walking. How can even skilled behavioral technologists apply their technology to an area which, as far as curriculum is concerned, is an uncharted wilderness? They cannot easily do so, and this is one area of great concern. The need is acute for developing curricula to teach the severely handicapped in basic skill areas.

We have discovered many other such needs:

- The need to listen to parents.
- The need for skills and material resources to insure both parent involvement and the involvement of administrators and the community.

- The need for conducting a new brand of training programs to train a new brand of teachers for these children.
- The need to be aware of some potential problems in implementing programs.
- The need, before anything else, to understand what ultimate role we have in mind for these children, and thus what kinds of skills they really will require.
- The need for the earliest intervention possible, and for continuation of that intervention.
- The need for a drastic tooling up of the service delivery system to provide the intervention.
- The need for more research on all topics related to the severely handicapped.
- The need for support and commitment at all levels of government.

These are some of the topics discussed in the next chapters of this book, as they were discussed at the actual Invisible College. We have not painted a rosy, unrealistic picture. We have tried not to leave anything out. But our news comes out as basically good news, and it is our responsibility to the children to tell it as clearly as we can. We must remember one important fact: What makes society want to shut away its elderly, ill, and helpless is partly the sense of frustration that comes from believing that no real help can be given. So long as we demonstrate success with the handicapped, we will reduce society's impulse to shut doors on them—whether they be doors to opportunity, employment, or community living. The methods exist now for revolutionizing the way severely handicapped children and adults are taught. This is our message. "Hey, Don't Forget about Me" will not be the byword for the severely handicapped in the future.



**HEY,
don't
forget
about
me!**



criterion of ultimate functioning

lou brown, john nietupski,
and susan hamre-nietupski

Key Ideas

- *For severely handicapped citizens to ultimately function as productively and independently as possible in integrated adult environments, the services provided to them as students must be longitudinal and continuous, as opposed to short term or episodic.*
- *The least restrictive environment for severely handicapped students, such as placement in self-contained classes in regular community based public schools, fosters the development of the skills necessary to perform in a heterogeneous society.*
- *The overuse of one to one instruction, homogeneous groupings, and repeated practice strategies probably prevent many severely handicapped persons from acquiring the skills, values, and attitudes necessary to interact effectively in a variety of settings and with a variety of people.*
- *Artificial instructional materials and settings do not allow severely handicapped students to solve real life problems or provide them with the skills needed for practical functions, as much as do natural and realistic settings, tasks, and materials.*

- Not too long ago there were few, if any, educational services for mildly retarded or mildly handicapped students in American public school systems. Self contained schools and self contained classes within regular schools were generated and proliferated soon thereafter. For years self contained schools and self contained classes within regular schools were considered the most efficacious models in which to provide educational services to mildly handicapped students.

In 1968 Dunn published his now famous article, "Special Education for the Mildly Retarded—Is Much of It Justifiable?" There Dunn crystalized the judgments, suspicions, and feelings of many persons in and out of special education—namely, that the placement of mildly handicapped students into self contained schools and self contained classes was unduly restricting their general development and not preparing them to function adaptively in complex, integrated, community based postschool environments.

In the past the predominant educational service delivery models generated for the majority of severely handicapped students in this country were (a) placement in large self contained residential facilities (institutions), (b) placement in self contained schools, (c) maintenance at home, and (d) the use of private facilities such as churches or facilities supported by private associations concerned with providing services for retarded citizens.

Within the past 5 years, due to encouraging judicial, executive, and legislative reactions to the advocacy activities of many enlightened parents and other persons and groups, formerly rejected severely handicapped students are now being served in community based public schools. Unfortunately, it seems that the overwhelming majority of severely handicapped students now in public schools are being served in self contained facilities. Self contained facilities will ultimately be rejected for the same reasons that self contained programs within regular schools for mildly handicapped students have been and are being rejected.

There is no doubt that the spirit of the times requires that severely handicapped students be allowed to grow within the least restrictive developmental environments. Placement in large multipurpose institutions, sustained maintenance at home, and/or sustained placement in self contained classes within segregated schools is generally restrictive. The community must create other more educationally tenable developmental environments.

Severely handicapped students should be placed in self contained classes in regular schools. Severely handicapped students should eat, recreate, assemble, travel, ambulate or be ambulated, play, read, study, and learn with students of all developmental functioning levels. Why? Because severely handicapped students will no longer be locked up in isolated dehumanizing institutions; they will no longer be hidden in homes; they will no longer be rejected from public schools; they will no longer be sheltered from society. They have the right to be visible, functioning citizens integrated into the everyday life of complex public communities.

- One of the most pervasive, and in our view questionable, philosophic assumptions in our society is that homogeneity is a *generally* positive objective that should be approximated if not realized. This general quest to cluster according to similarities, to stratify on the basis of differences, and to realize uniform compositions is referred to here as the logic of homogeneity.

WHAT WE BELIEVE

The spirit of the times requires that severely handicapped students be allowed to grow within the least restrictive developmental environments.

Severely handicapped students have the right to be visible functioning citizens integrated into the everyday life of complex public communities.

THE LOGIC OF HOMOGENEITY
One of the most pervasive, and in our view questionable, philosophic assumptions in our society is that homogeneity is a generally positive objective.

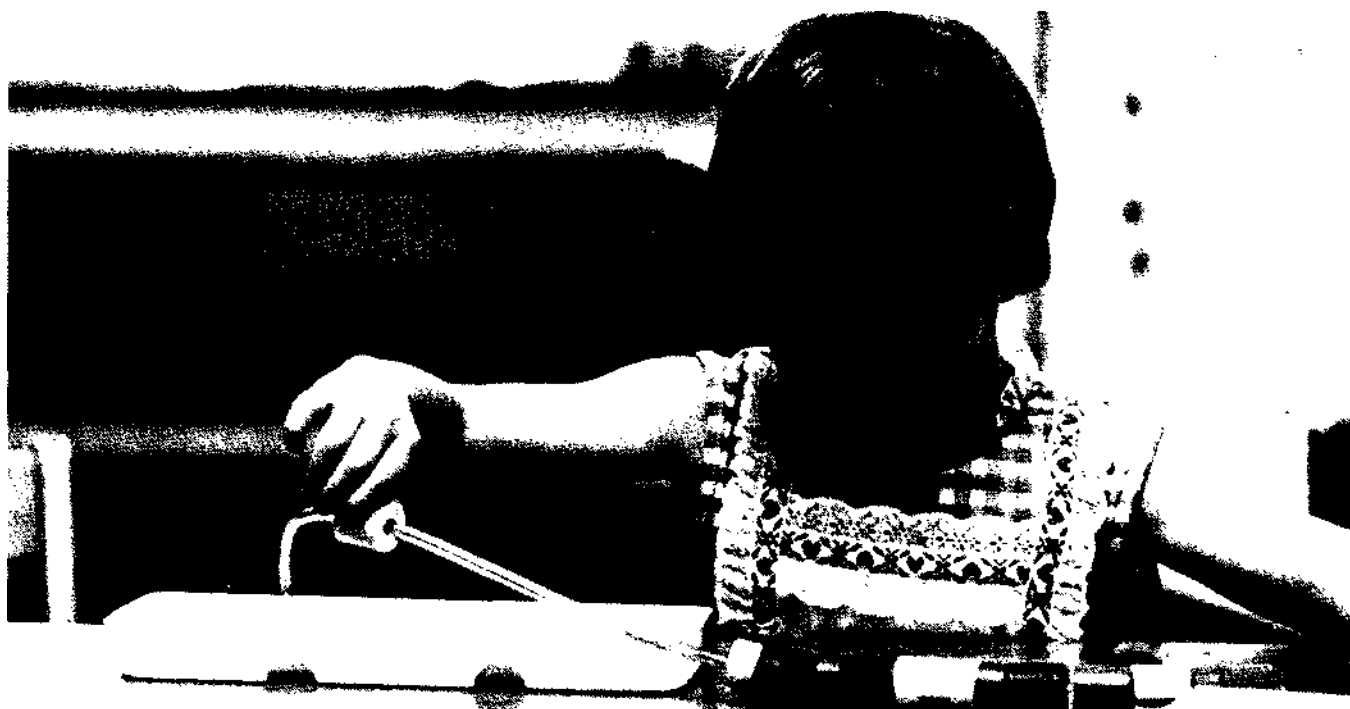
Discernible manifestations of the logic of homogeneity are prevalent in many aspects of our society. Predetermined efforts have been made to group according to skin color, family heritage, verbal accent, sex, religious affiliation, military rank, professional or paraprofessional status, wealth, and academic degree, to name only a few. These manifestations are often based on such assumptions as (a) people do better and are happier if they are with their own kind, (b) people who are different than us do not like us, (c) our cultures are too different, (d) if God wanted us to be together, She would have arranged it, and (e) overcoming the communication problem is not worth the effort.

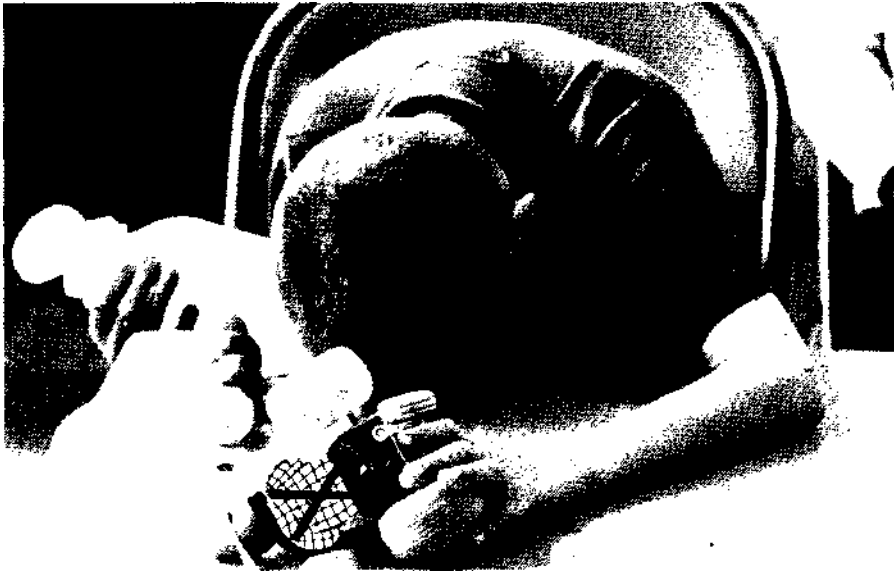
In education generally there have been many manifestations of the logic of homogeneity. For example, students have been "tracked" within and between schools and classes, males and females have been stratified in "health" and physical education classes, and parochial schools and athletic leagues are prevalent.

Educators have systematically, although inadvertently, impeded many handicapped and non-handicapped students from acquiring the skills, values, and attitudes necessary to function in heterogeneous and complex environments.

In special education, the logic of homogeneity abounds to the point of absurdity. Special educators have established self contained classes, self contained schools, groupings for the orthopedically handicapped, the blind, the mildly retarded, the emotionally disturbed, and the trainable mentally retarded, and on and on ad infinitum. By affording credence to the presumed positive properties of the logic of homogeneity within educational systems, educators have systematically, although inadvertently, impeded many handicapped and nonhandicapped students from acquiring the skills, values, and attitudes necessary to function in heterogeneous multifaceted and interpersonally complex adult environments.

Many persons concerned with providing developmental services to mildly handicapped students have rejected, or are now in the process of rejecting, the basic tenets of the logic of homogeneity. Those persons concerned with providing the best possible educational services to





severely handicapped students should do the same. However, it should be noted and emphasized that certain kinds of homogeneous groupings in selected settings for selected purposes may be educationally, medically, and socially tenable. That is, to reject the logic of homogeneity completely is probably as irrational as to absorb it completely. The point is that the logic of homogeneity as it relates to the provision of educational services for severely handicapped students is *generally negative*. Homogeneity must be scrutinized carefully and rejected in favor of heterogeneity whenever possible.

- The logic of heterogeneity leads to the position that persons of differences or dissimilarities in almost all aspects of existence should interact. Most postschool community based domestic, vocational, and recreational environments are fundamentally heterogeneous in nature. If severely handicapped students are to be expected to function effectively in heterogeneous community environments, as many preceding developmental experiences as possible should represent that heterogeneity. Every time educators make a decision affecting the longitudinal development of a severely handicapped student, they must seek manifestations of the logic of heterogeneity.

If educators had ascribed to the logic of heterogeneity in the past, they would not now be confronted with ways in which to dismantle "state schools," self contained public schools, and other forms of segregated instructional settings. At this time it appears that one of the most realistic manifestations of the logic of heterogeneity would be to encourage comprehensive and longitudinal involvement with non-handicapped persons in a diversity of constantly changing community environments.

- Most teachers assume varying degrees of instructional inference when relating to students, regardless of their functioning levels. Generally, the less handicapped the student, the higher the degree of inference regarding the performance of that student. For example, teachers of nonhandicapped students often teach the rational counting of wooden pegs. After a student has performed at criterion on this task, it

THE LOGIC OF HETEROGENEITY

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DEGREES OF INSTRUCTIONAL INFERENCE

don't forget about me!

is usually inferred that the student can also rationally count eating utensils, money, and completed work units. This, of course, represents a relatively high degree of instructional inference. Implicit in relatively high degrees of instructional inference is the assumption that from specific training on circumscribed or core tasks, students will abstract the *critical factors*, strategies, rules, and concepts from the training environment, and apply them in new and varied environments.

Teachers of severely handicapped students can rarely, if ever, infer that because a student performs a particular skill in an artificial setting, he or she can also perform that skill in other more natural settings.

At this stage in the evolution of instructional technology, critical factor strategies can be afforded little educational credence. That is, to our knowledge, it has not been empirically demonstrated that the teaching of a few critical skills has resulted in substantial increases in the general developmental functioning levels of many severely handicapped students. Thus, teachers of severely handicapped students can rarely, if ever, infer that because a student performs a particular skill in an artificial setting he or she can also perform that skill in other more natural settings.

Unfortunately, it may be necessary to teach severely handicapped students all the skills, concepts, actions, and responses required for adaptive performance in all the postschool environments to which they will be exposed. Such an instructional possibility is referred to here as a *zero degree inference strategy*. That is, no inferences are made that training to a criterion on any task in one situation will result in criterion performance in similar but different situations requiring similar or slightly different actions. Each time a situation changes for a severely handicapped student, it will be necessary to empirically verify that he or she can perform the skills required by that new situation.

Occasionally it has been demonstrated that severely handicapped students can acquire relatively complex skills. However, rarely have severely handicapped students, taught to perform complex skills in artificial instructional settings, been able to perform relevant versions of those skills in natural community settings. Thus, until such time that critical factor strategies are demonstrated empirically effective in developing the skills necessary for severely handicapped students to perform a variety of skills in a variety of community settings, with a variety of persons, language cues, and materials; it appears that approximations of zero degree inference strategies offer higher probabilities that students will be able to perform acceptably in less restrictive environments as adults.

EDUCATIONAL SERVICE CHARACTERISTICS

- As large numbers of severely handicapped students enter into less and less restricting community environments, the current performance differences between them and their nonhandicapped age peers will be quite dramatic. Initially such dramatic differences will engender fear, frustration, rejection, and hopelessness in many sincere and well meaning individuals, both in and out of the human services movement. In time, the initial negative emotional reactions will abate and the collective consciousness and energies of the community will be redirected toward providing the best possible developmental services.

In some school districts attempts will be made to maintain as much physical distance as possible between severely handicapped and non-handicapped citizens: Old school buildings will be opened or renovated and *only* severely handicapped students will be assigned to them; new school buildings will be constructed under the guise that the students of concern are in need of "special A, B, or C." However, as educators realized when they attempted to provide specialized services to mildly

handicapped students, segregating procedures impede achievable approximations of human potential.

At least one major question should be addressed: Over long periods of educational time, what are some of the fundamental characteristics of the most creditable educational services based upon the best available information? The position taken here is that in addition to the constant quest to realize the criterion of ultimate functioning and to manifest the logic of heterogeneity, there are at least three additional factors that must be considered basic characteristics of educational services for severely handicapped students.

First, specialized educational services should be provided as soon after birth as possible. The reasons for early educational intervention as it relates to the involvement, acceptance, and training of parents, and longitudinal human development are obvious. The point of emphasis here is that if any child is identified as, or is at risk of becoming, severely handicapped on Monday and a public school contact is not made until Wednesday, it is one day too late.

Specialized educational services should be provided as soon after birth as possible.

Second, educational services for severely handicapped students must be comprehensive and coordinated toward educational development. Severely handicapped students manifest a variety of developmental delays and require at least the expertise of physical, occupational, language, and medical therapists, persons capable of providing visual and auditory assessment and habilitation, as well as the general resources of the educational community. On the other hand, it is also obvious that, although the multidisciplinary team is a "sound good" phrase, such a concept rarely produces coordinated and empirically verified educational outcomes. Indeed, a challenge educators must confront and meet is the design of systems to both articulate and harvest the contributions of varied persons and disciplines and filter the persons and/or disciplines that detract from the development of empirically tenable educational services.

Although multidisciplinary team is a "sound good" phrase, such a concept rarely produces coordinated and empirically verified educational outcomes.

Third, the services that are provided for severely handicapped students must be longitudinal as opposed to episodic. An episodic intervention refers to the brief involvement of a professional in the developmental lifestyle of an individual. There are thousands of instances when episodic interventions are empirically tenable, particularly when non-handicapped persons are the recipients of such interventions. For example, if an individual contracts an infection, he or she can spend a few minutes with a physician, receive an injection and the problem is solved. If a muscle around an eye contracts, one can visit an optometrist and after a brief examination and a change of glasses, the problem is solved. The availability and functional validity of episodic interventions are perhaps some of the most positive aspects of this society.

Services for severely handicapped students must be longitudinal as opposed to episodic.

The general functional *invalidity* of episodic interventions is a critical source of frustration for parents and professionals who relate to severely handicapped students. Parents can take their severely handicapped child for a vision examination, but in fact the professional may not be able to provide a valid diagnosis and an empirically verifiable prescription. As a result, many severely handicapped students function with uncorrected visual problems. A longitudinal approach to the problem, although requiring more time and money, obviously is warranted. The sustained coordination and ingenuity of *many* persons will be required before the most effective visual prescription can be empirically determined.

don't forget about me!

A similar situation exists when parents take their severely handicapped children to the standard multidisciplinary team of experts. About 2,000 professionals representing 1,400 disciplines at an enormous cost spend from 30 to 37 minutes each with a severely handicapped student. After this series of episodic interventions, programmatic recommendations are then made to parents and teachers. Generally, few followup efforts are attempted to ascertain the empirical value of the recommendations and/or to suggest changes in programming based on the progress of the child. The educational outcomes are unfortunately predictable.

THE CRITERION OF ULTIMATE FUNCTIONING

Large multifailure residential facilities will be replaced by complex, integrated, developmentally facilitative community models.

If severely handicapped adults are longitudinal and comprehensive exposure to one another. Such exposure will enhance the probability that the skills, attitudes, and values so necessary for tolerance, understanding, and absorption will be realized.

Large multifailure residential facilities and other segregated facilities for adult severely handicapped citizens will be replaced by complex, integrated, developmentally facilitative community models. Thousands of severely handicapped citizens will attend church, shop, wait in the offices of physicians, ride public buses, wash dishes, attend movies, use restrooms, cross streets, and cheer at football games with less handicapped and nonhandicapped citizens. If severely handicapped adult citizens are to function effectively in heterogeneous community environments, both handicapped and nonhandicapped citizens will require longitudinal and comprehensive exposure to one another. Such exposure will enhance the probability that the skills, attitudes, and values so necessary for tolerance, understanding, and absorption will be realized. The criterion of ultimate functioning refers to the ever changing, expanding, localized, and personalized cluster of factors that each person must possess in order to function as productively and independently as possible in socially, vocationally, and domestically integrated adult community environments. Since severely handicapped citizens will ultimately function in settings which contain less handicapped and nonhandicapped citizens, the majority of the developmental environments to which most severely handicapped citizens are now exposed will require substantial changes. Longitudinal segregation, whether manifested in residential institutions or self contained schools, homes or classes will not culminate in the realization of the criterion of ultimate functioning.

The position taken here is that the requirements of the criterion of ultimate functioning should be the standards by which educational



activities are judged as they relate to severely handicapped students. Any activity, however episodic or apparently inconsequential, must be related to the criterion of ultimate functioning, or that activity should be terminated. Thus prior to the initiation of any interaction with the severely handicapped students we must at least ask the following questions:

1. Why should we engage in this activity?
2. Is this activity necessary to prepare students to ultimately function in complex heterogeneous community settings?
3. Could students function as adults if they did not acquire the skill?
4. Is there a different activity that will allow students to approximate realization of the criterion of ultimate functioning more quickly and more efficiently?
5. Will this activity impede, restrict, or reduce the probability that students will ultimately function in community settings?
6. Are the skills, materials, tasks, and criteria of concern similar to those encountered in adult life?

In the following pages attempts will be made to communicate the idea that many educational assumptions and practices currently in operation or in proposal, although appearing educationally sound and expedient, actually interfere with the realization of the criterion of ultimate functioning.

- For the past several years we have made attempts to develop instructional programs for severely handicapped students in community based public school zero exclusion educational settings. In addition, we have had the opportunity to visit many educational programs around the nation in an attempt to both provide and receive technical assistance. As a result of our experiences we have modified many of our attitudes, techniques, assumptions, and instructional practices as they relate to educational strategies that are typically used or advocated for use with severely handicapped students.

As we tried to relate many of our instructional practices to the standards of the criterion of ultimate functioning, many inadequacies and failures surfaced. In this section we will describe some of the instructional practices we formerly recommended for general use, some of the difficulties we have encountered with those practices, and some of the adaptations we are currently entertaining.

- It has often been proposed that severely handicapped students need one to one instruction. Undoubtedly, one to one instruction has educational validity. In fact, all children, whether or not they are handicapped, are probably in need of, and should receive, the undivided attention of an adult during some portion of their school day. The salient issue here is related to the proportion of the school day that should be consumed with one to one instructional interactions as opposed to larger ratio interactions.

It is generally assumed that the more one to one instruction a student receives, the more educational advancement can be expected in the long run. However, after a considerable number of failure experiences over a long period of time, we have rejected that assumption. It now seems reasonable to provide fewer one to one instructional arrangements and more arrangements that involve (a) group instruction,

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Many educational assumptions and practices, although appearing educationally sound, actually interfere with the realization of the criterion of ultimate functioning.

THE VALUE OF CERTAIN INSTRUCTIONAL PRACTICES

ONE TO ONE INSTRUCTION

It now seems reasonable to provide fewer one to one instructional arrangements and more arrangements that involve group instructional arrangements.

(b) clustered individualized instruction in which one teacher engages in individualized interactions with a cluster of three, four, or five students, and (c) instruction that generates adaptive interstudent interactions in the absence of the direct involvement of persons in authority.

Obviously, one to one instruction is enormously expensive in terms of personnel, time, and money. If the only issue was expense and not educational development, educators would be morally bound to provide such instruction. However, in addition to expense there are other more significant educational reasons for minimization of one to one instructional arrangements.

First, one to one instructional arrangements typically include a teacher providing a cue to which a student is required to respond. When the criterion of ultimate functioning is considered, extensive longitudinal use of teacher cue/student response paradigms prevents or interferes with the acquisition of self initiation skills. Educators have inadvertently developed students who will perform well if a specific teacher provides certain cues but who fail to perform in other settings, with other cues or other persons. Thus, one potentially negative outgrowth of the extensive use of one to one instruction in which teachers provide cues to act is that students become too stimulus bound to those cues. Instruction using additional arrangements may help prevent such problems and thus assist students to function in a variety of adult environments.

Second, one to one instruction where teachers provide cues to students and where students become bound to those cues impedes the development of adaptive interstudent interactions. Situations are continually reported in which students play a game effectively with a particular teacher, parent, or university student in training, but cannot or will not play with an age or developmental peer. This, of course, is a developmentally unsound outcome in that the student is supposedly preparing to ultimately function in an environment where a substantial amount of his life will be spent relating to, enjoying, and learning from and with a variety of age and developmental peers.

Third, it is often hypothesized that a particular student is "not ready for group instruction" due to a variety of medical, behavioral, and educational deficiencies. Thus, teachers often enter into one to one instructional arrangements assuming that the skills the student develops in one to one settings are necessary for, and will culminate in, adaptive performance in group settings. In a large number of situations this has proved to be a false assumption. Indeed, just as teachers learn to function in one to one instructional settings and malfunction in group instructional settings, so do students. The strategies that we are attempting to develop currently require that all students, *no matter what their level of functioning*, receive some instruction in group instructional arrangements.

There seem to be at least two additional difficulties that might arise from the overuse or misuse of one to one instructional arrangements. First, teachers who develop one to one instructional skills often do so at the expense of the development of group instructional skills. In the past, when attempting to train teachers to work with severely handicapped students, we would begin the training sequence by placing university students in one to one situations on the wards of a residential institution. Often this was an ineffective training experience even though many trainees became quite effective teaching one child to perform one skill. Many of the teaching skills necessary to do so were

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incompatible with the clustered individualized teaching of groups of 3, 4, or 5 students in public school classrooms who manifested varying degrees of behavior management problems and who required different instructional materials, interaction styles, and response consequences.

Second, in many educational settings in which one to one instruction is emphasized, the situation ultimately arises in which (a) there are more students than teachers and (b) the students do not have appropriate self regulated play, work, or social skills. Thus, an unfortunately typical scene is to witness a teacher, an aide, a parent, and a practice teacher working in one to one instructional arrangements with four students on one side of the room, while the remaining students are restrained to chairs, roll on floors, self stimulate, or self mutilate in other parts of the room or "watch TV."

Obviously, there are a substantial number of technical problems related to larger ratio instructional arrangements. However, it appears more developmentally tenable at this point to attempt to generate instructional procedures that solve the problems that accrue from larger ratio arrangements rather than to revert to an inordinate use of one to one instruction. *It seems more tenable at this point to solve the problems that accrue from larger ratio arrangements than to revert to an inordinate use of one to one instruction.*

Group instruction, as the term is used here, refers to a teacher attempting to teach more than one student at a given time in the same manner using the same words, materials, and so on. In our experience, group instructional arrangements are often inefficient in that (a) teachers tend to teach to the more responsive students in the group, (b) it is extremely difficult to evaluate individual progress in that it is quite cumbersome to verify that each student is performing the skills of concern, and (c) it is the rare group of severely handicapped students who progress through educational curricula at the same pace. On the other hand, the limited and carefully selected use of group instructional arrangements has enormous longitudinal practical value. Sustained attempts must be made to insure that students acquire the skills necessary to secure information from group arrangements.

In summary, the criterion of ultimate functioning requires that individuals perform in complex community settings which demand multiple person cooperative and interactive skills. Extensive use of one to one instructional arrangements over long periods of time results in few of these skills. Thus, where we once recommended the extensive use of one to one instruction, we are now recommending that students also receive a substantial amount of instruction in group and clustered individualized arrangements and in arrangements that allow them to teach and learn from each other. The amounts of time allocated per day to each arrangement, of course, should be determined empirically. *The criterion of ultimate functioning requires that individuals perform in complex community settings which demand multiple person cooperative and interactive skills.*

• Repeated practice strategies are teaching strategies that generate large numbers of direct instructional trials in relatively short periods of time. As severely handicapped students typically require relatively large numbers of direct instructional trials in relatively short periods of time in order to attain criterion performance on many tasks, repeated practice strategies are of enormous practical value and their proliferate use is understandable. **REPEATED PRACTICE STRATEGIES**

There are probably thousands of tasks that have been taught through repeated practice strategies to handicapped and nonhandicapped students. Solving simple mathematical equations, rote counting, differentiating colors, recognizing polar opposites, and verbally labeling flash cards are but a few examples. Repeated practice strategies might be

most useful when it is important for a particular skill to be taught, but there is an insufficient amount of naturally occurring instructional trials during the school day. For example, assume that a teacher intends to teach a student to put on and remove cold weather gloves. Under natural instructional conditions, the teacher may be able to provide the child with three or four teaching trials per day. However, under artificial training conditions a teacher might arrange for 20 or 30 repeated practice teaching trials per day until the child reaches criterion on the task in the repeated practice arrangement. Subsequently, the student can be taught to perform the skill under natural life conditions. In this situation, and in many similar situations, there are relatively few differences between the actions taught under repeated practice arrangements, and the actions required in the natural environment.

Repeated practice strategies have been and will continue to be used to teach many valuable skills to severely handicapped students. However, although there is little that is inherently questionable about repeated practice strategies, the proliferate use and subsequent teacher reliance upon such strategies tends to foster the use of artificial instructional materials, tasks, and settings and the formulation of questionable educational objectives and performance criteria.

In an attempt to minimize or avoid the potentially deleterious effects associated with the sustained overuse of repeated practice strategies, at least three alternatives seem reasonable. First, teachers can include a substantial number of functional, as opposed to artificial, tasks in the curriculum. Second, teachers initially can utilize artificial tasks and criteria and then teach students to perform the developed skills in natural settings. For example, touching polar opposites as they are presented via a teaching machine can be considered tenable only if criterion performance on that artificial task is followed by empirical demonstrations of the functional use of polar opposites in natural settings. Third, teachers can increase the number of single person and multiple person peer game skills. Games are crucial educational vehicles in that they are generally more intrinsically interesting than two dimensional two choice discrimination tasks requiring touch responses. They can be used to develop and maintain valuable interstudent language, reading, math, and social skills. Finally, they can enhance the probability of performance across places, persons, and materials in that students can readily engage in games in settings away from school. Again, the point here is that criterion performance of a skill as a result of a repeated practice strategy in an artificial setting does not often result in the acceptable performance of that skill in natural environments.

SYSTEMATIC VARIATION

- Teachers have often been confronted with a student who does well interacting with one adult, but does not interact with others. For example, Johnny may perform for Ms. Jones, but not for anyone else. It might be argued that since it is crucial for Johnny to perform, Ms. Jones should be encouraged to work with him until some time in the future. However, when this strategy is referenced against the standards of the criterion of ultimate functioning, the potential deleterious effects become readily apparent. In heterogeneous adult environments, citizens are required to respond to, and in the presence of, a wide variety of persons. By arranging such circumscribed actions and reactions, a teacher is systematically impeding the development of the skills necessary for independent survival in heterogeneous adult communities. In an attempt to minimize the development of such circumscribed

By arranging circumscribed actions and reactions, a teacher is systematically impeding the development of the skills necessary for independent survival in heterogeneous adult communities,



interactions, many strategies are no doubt possible. However, there are several strategies that seem to offer reasonable promise.

Each time a student is taught a functional skill or game, it might be required that the skill be performed (a) in reaction to, or in the presence of, at least three different persons, (b) in at least three different natural settings, (c) in response to at least three different sets of instructional materials, and (d) to at least three different appropriate language cues. To illustrate, assume that a student is taught to play a game with a ball in a classroom. The teacher then must either teach the student to, or empirically verify that the student can, play ball (a) at the playground, (b) at home with a peer, a parent, and a sibling, (c) in response to such verbal language cues as "throw it," "hit me," "zip it over here" and (d) with basketballs, baseballs, and colored plastic balls.

The verbal language cue component of any strategy is particularly crucial in that teachers often inform parents that a student reached criterion on a specific task. Parents often attempt to induce the performance of that skill at home, but fail. Further analysis often reveals that the teacher used one verbal language cue (e.g., "Go find your") and the parents used another (e.g., "Get me"). Attempts to *standardize* the verbal language cues so that both the teacher and the parents use exactly the same words are longitudinally questionable in that in heterogeneous adult community environments different people use many verbal language cues that require the same response. The standardization of *variation*, on the other hand, may enhance performance across verbal language cues. Thus, when a student is taught to perform specific skills in response to a particular verbal language cue, the task should not be considered mastered until the student performs the task in response to the other verbal language cues used in his natural environment that require the same response.

It seems that teachers have several available options to insure that students perform accurately and consistently to varying cues. For example, assume that four verbal language cues are used in the natural environment in relation to a particular skill. A teacher could use a consecutive strategy and teach appropriate responding to the first, second, third, and fourth verbal language cues respectively until the

When a student is taught to perform specific skills in response to a particular verbal language cue, the task should not be considered mastered until the student performs the task in response to other verbal language cues.

Instructional environments should be "consistently inconsistent" or systematically varied.

TOWARD NATURALIZED CURRICULA

Commercial kits and irrelevant paper and pencil tasks should be faded out; real money, real streets and cars, real people, real stores, real world settings must replace them.

There are situations in which it is feasible to start with rudimentary movements, limited or isolated instructional sequences, and artificial materials, but education should never stop there.

Since we are preparing students to function in heterogeneous adult environments, most of the necessary training experiences should be conducted in extra-school building environments.

students respond appropriately to all four cues when they are presented randomly. A teacher could use a concurrent strategy in which students receive training on all four cues at the same time until they respond appropriately to all four cues when they are presented randomly. A teacher could use a combined or a different strategy. Regardless of the particular strategy, students must be prepared to perform in complex natural environments that are constantly varying and evolving. Thus, rather than support the orientation that the instructional environments of severely handicapped students should be standardized, we are suggesting that their instructional environments should be "consistently inconsistent" or systematically varied.

D The instructional materials, tasks, consequences, objectives, and criteria to which severely handicapped students are exposed in educational settings should resemble those that students will encounter and need in community domestic, social, leisure, and vocational settings. However cumbersome, time consuming, inconvenient, or expensive it may be to do so, the pegs, felt squares, pictures of money, tokens, pictures, edible consequences, and many, if not all, of the commercially available kits and irrelevant paper and pencil tasks should be faded out. Real money, real streets and cars, real people, real stores, real sounds and smells, real tools and objects, real group homes, real world settings, real appliances and utensils, real motor skills, and real ridicule, rejection, and disappointment must replace them. An empirically verifiable naturalized life space curriculum designed to teach the skills required in heterogeneous community environments is the order of the day.

There are at least three major reasons why curricula for severely handicapped students should be naturalized. First, artificial materials and settings seldom provide students with the information needed to solve practical problems in natural settings. Because a severely handicapped student can solve the problem " $2 + ______ = 4$ " on a commercial worksheet in a classroom, it does not necessarily follow that he will be able to respond correctly to the problem in which four people will be eating dinner and there are only two chairs at the table. Crucial information contained in the latter functional task is not present in the former artificial paper and pencil task.

Second, the actions and criteria required by many of the most popular artificial tasks and materials are often not the crucial actions required in more functional environments. Artificial tasks and materials often require touching, marking, and verbally labeling actions. Functional tasks, materials, and criteria, on the other hand, require picking up, getting, showing, assembling, distributing, responding motorically to printed stimuli at community accepted rates, latencies, and durations. Certainly there are situations in which it is feasible to start with rudimentary movements, limited or isolated instructional sequences, and artificial materials, but education should never stop there. It should not stop until the teacher has demonstrated empirically that these students can function as independently as possible in the most open, positive, and actualizing environments imaginable.

Third, since we are preparing students to function in heterogeneous adult environments, most of the necessary training experiences should be conducted in extra-school building environments. The school as manifested by a building may be necessary, but it is *not* sufficient as the major or only facility needed to prepare severely handicapped students to reach the criterion of ultimate functioning. These students

need schools with small permeable walls. Instead of bringing sheltered workshop tasks into a school workshop, instructors should disband the school workshop and teach the students the required skills at real workshops. Instead of using a "home economics room" in a public school, teachers should use real natural homes, foster homes, and group homes as the locations for the development of crucial self help, grooming, social, and domestic maintenance skills. Similarly, other vocational, shopping, service procurement, and leisure skills should be taught during and after traditional school hours, at real bowling alleys, theatres, stores, restaurants, swimming pools, office buildings, laundries, and motels.

- Perhaps it is appropriate here to relate to the relative merits of simulated training experiences. There is no doubt that criterion performance on simulated tasks can be a valuable adjunct to the development of many crucial developmental skills. In fact, under certain circumstances it may be construed as almost mandatory that simulated experiences be utilized (bus riding and street crossing seem reasonable examples). However, severely handicapped students do not allow the degree of inference necessary to assume that criterion performance on a simulated task *guarantees* criterion performance in the environment in which the skill will ultimately be required. There can be no substitute for empirical verification of the performance of a skill in the natural environments in which the skill is required.

If we now had available to us the most tolerant of all possible communities, an unlimited budget, the collective use of the best professionals in existence, all necessary enabling legislation, the most advanced service delivery models, ideal parents, and excellent medical care, we still would not be able to provide severely handicapped students all needed services. The skills of our students are limited by the information we have within our grasp. The information we have within our grasp is tragically meager. If substantial improvements in services to severely handicapped students are to accrue, new information must be generated. As educators we must realize that we are infants in this area, that most if not all of our pet theories must be revised, and that we need to expose our ideas and practices to the scrutiny of all. We must now confront our weaknesses, failures, and insecurities and set about the long hard task of demonstrating, rather than inferring, the best possible services for a most deserving group of citizens.

CONCLUDING COMMENTS

The skills of severely handicapped students are limited by the information educators have within their grasp, and that information is tragically meager.

As educators we must now confront our weaknesses, failures, and insecurities and set about demonstrating, rather than inferring, the best possible services for a most deserving group of citizens.

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REFERENCE



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infant identification

norris g. haring

Key Ideas

- *Early identification of severely handicapped infants makes it more possible to program an environment that maximizes their opportunities for growth and development.*
- *Assessment of an infant's probable neurological /behavioral normality or handicap made in the first week of life tends to correlate highly with the child's functioning at a later age.*
- *The characteristics of good assessment are: (a) it can be administered by personnel who are readily available, (b) it measures small increments in an evolving sequence of development, and (c) it leads directly to intervention efforts.*
- *In intervention efforts, parents should be considered the infant's primary program managers, and their active involvement in the remediation process should be facilitated by educators.*

• At the present time, assessment of neonates is being done with increasing accuracy both as to neurological status and behavioral functioning or, in Brazelton's (1973) term, adaptive functioning. Some of the newer and better scales in use are the Brazelton Neonatal Behavioral Assessment Scale (1973), the Rosenblith/Graham Scale (a modification of the Graham Scale) (1961), and—for neurological assessment—the Prechtl Neurological exam (Prechtl & Beintema, 1964). Such assessment would more properly be called screening, in that it produces primarily *predictive* information; that is, an infant's functioning on various responses to stimuli is noted and compared with the functioning of other infants to produce a prediction of what that infant's later behavior will be like—normal, or impaired.

ASSESSMENT/DIAGNOSIS OF SEVERELY HANDICAPPING CONDITIONS

Assessment of neonates is being done with increasing accuracy.

The newer assessment scales are showing increased predictive value: The assessment of the infant's probable neurological/behavioral normality or handicap which is made in the first week of life tends to correlate highly with the infant's functioning at 8 months (Rosenblith, 1975) or even as late as 7 years (Tronick & Brazelton, 1975).

Has the introduction of responses to natural environmental "interventions" (such as placing a hand on the infant's belly to sooth him or talking to him to quiet him after he has aroused to a crying state) perhaps produced this more accurate picture of the baby's capacities than assessment with stimuli common to traditional neurological scales? It is worth asking what aspects of the assessment have accounted for this improved prognostic accuracy. Several possibilities suggest themselves, after even a brief review of the assessors' scales, instructions, and results:

1. *Familiar responses are assessed.* The infant's responses to light or to a human voice are responses that would normally be evoked in the environment, and the new scales contain many more of such items than they do of responses to pinpricks or extremely intense stimuli.

New scales contain many more naturally occurring stimuli than artificial stimuli.

2. *The infant's best responses* (Rosenblith, Brazelton) *are recorded*, and in some cases (Brazelton) the examiner is instructed to explore what supportive tactics or positions, what conditions of physical holding, warmth of dress, or light will allow the infant to give his best responses. In other words, the response the infant is capable of when *optimally supported* by the environment is apparently of **greater predictive value.**

Recording the infant's best responses has been found to be of greater predictive value.

3. *Assessments are repeated*, and assessments following medicated deliveries are particularly followed up because of the depressing effects of premedication on the infant's functioning. The value of repeated assessment would have been predictable, since the fallibility of one-shot assessments has of course been known for years, but as the measurement strategy has been refined with infants, certain *test artifacts* of interest have emerged: For example, if any single assessment has value, it is one performed on the third or sixth day after delivery; second, an even more valuable predictive indicator is the *curve of improvement*—a fairly pronounced improvement in functioning is of more diagnostic significance than is an initially depressed assessment (Parmelee & Michael is, 1970).

A fairly pronounced improvement in functioning is of more diagnostic significance than is an initially depressed assessment.

If the following criteria are taken as the standard for a good screening device, one can see that great progress is beginning to be made. A good screening device can be administered by minimally trained personnel, quickly, at low cost; is amenable to pass-fail scoring; is repeatable, but if administered only once in the first week of life, will give good

predictive accuracy—minimizing false negatives and false positives and correlating positively with later developmental assessments.

There are assessment (screening) instruments whose items are valid and can be reliably scored, and which predict *gross* behavioral status with some accuracy as far as 7 years into the child's future (particularly for children at the extremes of the spectrum). And researchers are refining these screening devices constantly.

CURRENT RESEARCH: EARLY SCREENING

Aspects of premature infants' sleep/waking patterns are highly diagnostic so far as developmental delay is concerned,

Some fascinating research is beginning to tell educators in more detail what to look for. For example, at the University of Washington, Barnard is discovering aspects of premature infants' sleep/waking patterns that are highly diagnostic so far as developmental delay is concerned. Facilitating alert/sleep state changes and durations may prove to avert many developmental problems; at any rate, the discovery that these patterns have diagnostic implications is of importance.

Also, at the University of Washington Child Development and Mental Retardation Center, Kogan is pursuing a line of inquiry which Rheingold and others originated in the 1950's. She is doing careful observational studies of the infant's responses to visual and auditory stimulation; these studies should lead directly to fine focus sequences of development.

The realization of the benefits of a more stimulus rich environment in the first weeks of life has produced the changes now seen in newborn nurseries, The realization that simply providing the infant with a more stimulus rich environment in the first weeks of life is beneficial (Scarr-Salapatek & Williams, 1971; Barnard, 1973) has produced the changes now seen in newborn nurseries (especially for the premature): Whereas they were sterile, antiseptic places a few years ago, they now have patterned sheets, colored mobiles, and often piped music or recordings of the sounds a baby hears in the womb—with remarkably quietening effects in this last case. Even incubator babies are cuddled, talked to, and given what stimulation is possible, in the knowledge that stimulus deprivation can permanently stunt the physical growth of an infant.

PITFALLS IN SCREENING AND ASSESSMENT

- Some of the common traps that can virtually set themselves for those who attempt to conduct screening and assessments are these:

First, there is the failure to consider the burden that the screening effort will place on the staff of a hospital/child development center. The simple test for phenylketonuria (PKU) developed some years earlier is a classic example of an easy to administer screening device, which any hospital can do with the aid of a urine soaked diaper (easily obtainable from most new babies) and the simple paper test. But according to officials of the Washington State Department of Social and Health Services (1975), this test is administered in only 60% to 80% of the cases.

Some motivational incentives may be required to get wide scale screening under way. The Brazelton Scale is perhaps the simplest test of behavioral functioning, and yet it takes at least 20 minutes to administer and considerable training before the observer has a high reliability rating in scoring the items on the 9 point scale. If economy of effort alone is not sufficient to guarantee performance of a screening test (witness the PKU story) then some motivational incentives may be required to get wide scale screening under way.

The significance of a delay can only be determined in relation to the expected performance of the individual child, Second, there is the failure to account for "small for date" babies. Occasionally (and this would be the case mainly where screening is delayed into the sixth or eighth month of infancy), a child is scored "developmentally delayed" without reference to his prematurity when born. The significance of a delay can only be determined in relation to the expected performance of the individual child. That is, even though

there has been emphasis on the need for fine focus sequences of learning to use in assessing infants' development, the need for projecting each individual's own expected line of progress should also be emphasized. There *will* be some individual variation in the time of appearance of some skills; what the sequences will tell is what skill will appear next, and, given the starting point and expected trend line for an individual child, whether there is substantial developmental lag.

The third pitfall is a reluctance to alarm parents. Even now, the "let him grow out of it" or "no need to set off a false alarm" attitude prevails among physicians. And, in one sense, there is justification for this, since the lack of adequate programing for young babies leads naturally to a feeling that notifying parents of the child's risk status will lead to despair, and perhaps to a Rosenthal effect, a "self fulfilling prophecy." What educators must do is to stop talking to themselves, and start shouting at others: at doctors, at legislators, and primarily at parents. They can do something for the severely handicapped if they can get at these children early, and that means knowing that they exist and need help. Physicians, once informed, will be educators' primary allies in motivating parents to getting children to programs; but educators must have those programs.

Such programs are beginning to proliferate today, and the proliferation has been rapid and extensive. Some authors estimate that there are approximately 200 to 300 infant programs nationwide. Keogh and Kopp have reported (1976) that in the Los Angeles area alone there are 50 *new* programs. In general, programs seek to remediate handicapping conditions of high risk or handicapped infants by teaching the primary care giver, usually the parent(s), certain intervention skills. Many of the programs are data based, by which I mean that the behavioral objectives established during training sessions are determined by the infant's progress within a developmentally appropriate sequence. Specific operating procedures vary from program to program: For instance, some of these intervention strategies are home based, others are implemented at centers, and some programs combine the two procedures.

To name only a few of the infant programs now in operation throughout the country, there are: the Down's Syndrome Programs at the Model Preschool Center for Handicapped Children and the Infant Program of the Center for the Severely Handicapped, both at the University of Washington's Experimental Education Unit; the Early Intervention Project for Handicapped Infants and Young Children at the University of Michigan's Institute for the Study of Mental Retardation and Related Disabilities; the Teaching Research Infant and Child Center, Teaching Research Preschool (Monmouth, Oregon); United Cerebral Palsy of the Bluegrass, Lexington, Kentucky; Preschool and Infant Developmental Programs and Research, Institute of Rehabilitation Medicine (New York, New York).

Educators must recognize that for the severely handicapped child, programs that begin in infancy are very nearly the main hope: They should be our first priority from today onward.

- What educators lack is the widespread application of the technology available to screen infants and identify those at risk. Educators still fail to identify many severely handicapped infants, despite the fact that *the severely handicapped are among the most clearly identifiable of all at an early age*. Their behavioral status, particularly in respect to muscle tone and "irritability" are highly discriminatory variables for diagnosis

The "let him grow out of it" attitude prevails among physicians.



Educators must recognize that for the severely handicapped children, programs that begin in infancy are the main hope.

**NEED FOR WIDER APPLICATION
OF SCREENING AND
ASSESSMENT PROCEDURES**

Educators still fail to identify many severely handicapped infants, although they are the most clearly identifiable.

(Rosenblith, 1975). And, although neonatal assessments of auditory functioning may or may not have a relationship to functioning at the 3 year testing, inability to "follow" or track visually in the neonatal stage does have implications for later visual patterning, leading to the conclusion that at least some sensory systems can also be assessed in infancy.

Severely handicapping conditions tend to be concentrated in no particular social stratum.

It is regrettable that there is not yet a high risk registry system like that in Great Britain (Robinson & Robinson, 1972) which would greatly facilitate followup of infants. Early and Periodic Screening/Diagnosis/Treatment (EPSDT)—an effort to locate those infants in need of further medical/health assessment and followup—began about 2 years ago. It was directed primarily at those eligible for Medicaid. It is a tremendous step in the right direction, but is flawed by its exclusive concentration, for the present, on low income groups (and its primary emphasis on physical health). For those interested in the severely handicapped, this class emphasis is especially disheartening, because severely handicapping conditions tend to be concentrated in no particular social stratum. They are, because of their more frequently genetic or organic causes, rather evenly distributed across social classes.

Unless there are legal obligations tied to early screening and programing efforts, there is no hope that the service delivery gaps can be closed.

Further, as shown by the fine levied against the state of Montana last year for failure to provide information about the EPSDT program to low income families, there is not adequate communication about even those services that do exist. Again, however, there is an encouraging trend, a step in a right direction: For unless there are legal obligations tied to early screening and programing efforts, there is no hope that the service delivery gaps can be closed.

Rogers's diagram (shown in Figure 1) of Great Britain's service delivery system can serve as a model of what might follow initial assessment in this country. The United States has very little resembling such a system now. There is no mandatory registry of the high risk infants and no subsidized, obligatory followup care as in the Scandinavian countries. Also, as I will discuss in detail on the question of remediation, the United States does not have the best basis for programing once the child is found and tracked into a service delivery system. Our society could hardly be expected to have all of these components yet. But this sort of delivery system should be our society's goal.

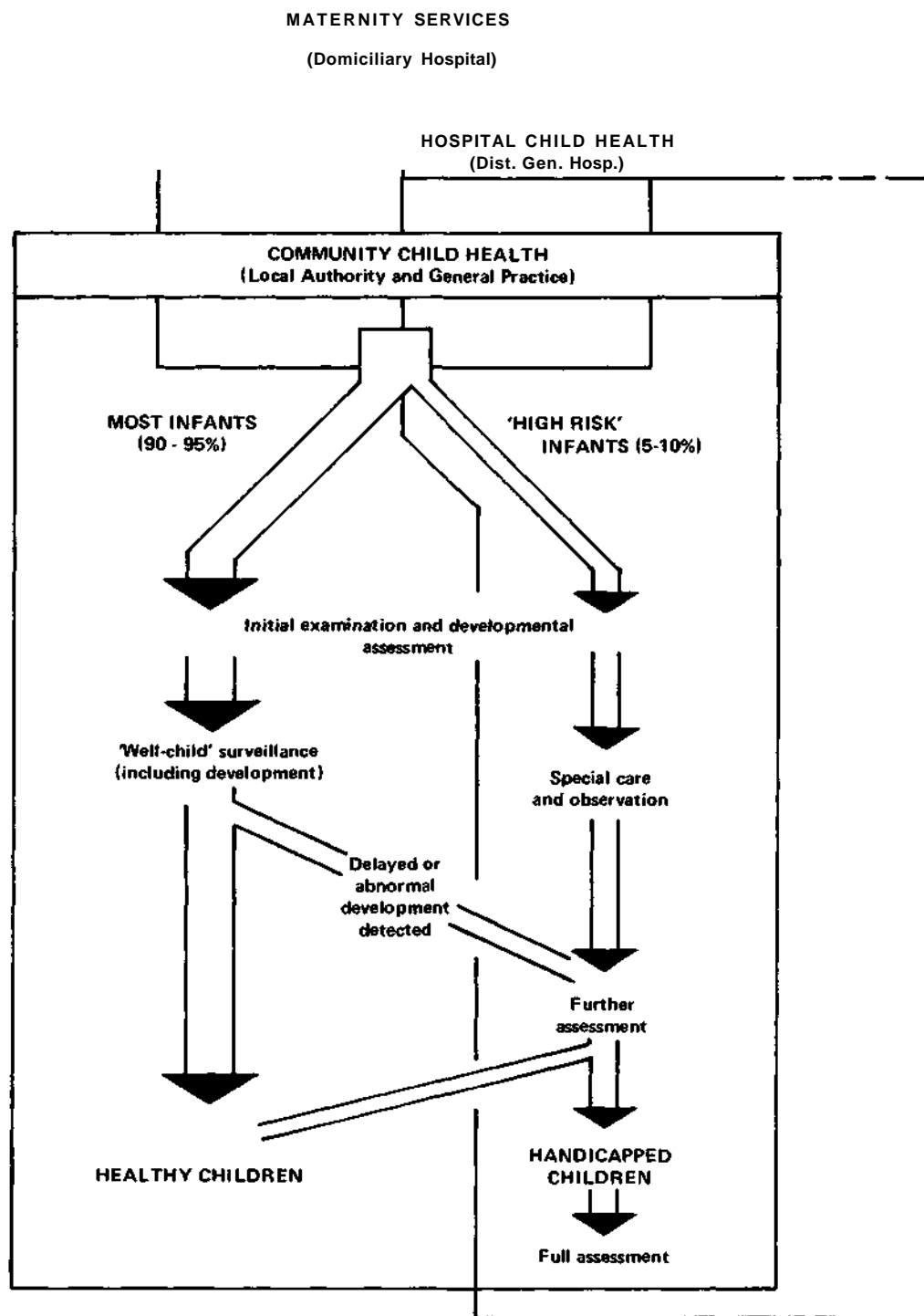
NEED FOR CONTINUED DEVELOPMENT OF SCREENING AND ASSESSMENT

There is a need for going beyond mere gross screening once a delay is identified.

- If an educator could be provided with two "assessment/diagnosis" wishes through the agency of some magic wand, the first would be for continued development of the scales for infant assessment (such as Brazelton's) which already enable a paraprofessional worker with minimal training to screen an infant completely in 20 to 30 minutes time. The second would be for a public health effort that would make such assessments a matter of legal requirement for all social classes and income groups. There would still be problems with gaps in delivery, owing to the rapid increase in home deliveries of infants and the difficulty of providing medical/health care in any rural remote area.

There is also the problem of the need for going beyond mere gross screening once a developmental delay is identified and doing a thorough assessment based on detailed, week by week sequences of learning. But these two additions would be a beginning. After that beginning, educators could address the need for improved sequences of learning in infancy.

Figure 1. Early recognition of handicapping conditions. Areas of responsibility of the various services are represented. Overlap of these areas indicates combined responsibility, and implies coordination of services, and flow of information From "The early recognition of handicapping disorders in childhood" by M. G. H. Rogers, *Developmental Medicine and Child Neurology*, 1971, 13, 80-101 (cited in Meier, 1973).



NEED FOR IMPROVED
SEQUENCES OF LEARNING
IN INFANCY

Once educators know that an infant has developmental delay or deficit, they need to intervene immediately. They no longer seriously debate the matter of whether early intervention is desirable. But how do educators intervene? With what curriculum? What frequency? The neonatal scales used to screen infants signal that a child may be developmentally at risk—and, it should be strongly emphasized, they can do so at birth or in the first days of life. But what about the child who is obviously at risk, and whose parents or therapists begin to intervene? How do the interventionists know that they are being successful? After initial screening and assessment, what next?

NEED FOR WEEK BY WEEK
FOLLOWUP

Whatever else intervention is, it is an ongoing process of taking careful observational data on the child's responses.

- The pediatrician has usually seen the infant for assessment only at one month intervals after the first week of life. This schedule is too infrequent to catch developmental delays in time for the infant who is already known to be at risk. The handicapped child should be seen weekly for assessment, probably by a developmental specialist who is at the same time conducting a remediation program. Assessment after an initial stage of pinpointing exactly which children are at risk, and in what areas, is something which must become part of intervention—as a check on the success of the intervention itself. Whatever else it is, it is (or should be) an ongoing process of taking careful observational data on the child's responses.

Educators know that they need certain things in order to make a response meaningful in a behavioral assessment. They must first know what to look for: What precisely pinpointed behaviors, in what degree of latency, duration, etc., are to be expected in an infant of 5 weeks, 6 weeks, 10 weeks? If educators fail to find what they are looking for, they must have some idea what can be done to promote its occurrence. Here they are primarily operating on the basis of known prerequisite responses and the principle of successive approximation.

But educators can and must draw also from developmental therapists in other fields. In our own Child Development and Mental Retardation Center, we have physical therapists in the Clinical Training Unit who tell us that they do know what muscle groups, and what mouth movements produced by those groups, have to be involved before an infant is ready to master the swallowing of textured foods. We as educators can know whether or not an infant exhibits that response; physical therapists can tell us what physical status is prerequisite to its appearance, and (they tell us) what exercises are likely to promote the prerequisite responses. We know, too, the consequences of an inadequate diet and therefore some of the reasons *why* we need to get such a feeding response from the child.

Educators must know what to look for, must know how to promote it if it does not appear, and must intervene to get it.

The sequence outlined above applies to other behaviors as well: Educators must know what to look for (what is next in the developmental sequence), must know how to promote it if it does not appear, and must intervene to get it. (The actual intervention process will be discussed later, under "Remediation of Severely Handicapping Conditions.") Educators can even specify in detail the characteristics of a good assessment:

- It can be administered by personnel with developmental expertise (such as a pediatrician, neurologist, or practitioner) who are readily available in most communities.
- It is amenable to *quantified* scoring, with high interrater reliability.
- It is keyed to a fine focus sequence of development, so that items are

not mere repetitions.

- Week by week it will show the examiner an *evolving* picture of developmental status.
- In addition it leads directly to remediation or intervention efforts (implies a programming sequence).

• The problem with assessment is that it does not lead directly to remediation, given the present state of the art. (I'll elaborate on this later.) Let me give an example of what educators lack and must supply —one taken from work done in our Infant Program at the Experimental Education Unit, Child Development and Mental Retardation Center, University of Washington, Seattle.

PROBLEMS IN KNOWING WHAT TO LOOK FOR

The problem with assessment is that it does not lead directly to remediation, given the present state of the art.

At the moment, we have sequences of normal child development which tell us, for example, that at 1 month of age an infant who is pulled to a sitting position will show head lag as he is brought up to vertical position, his head will sag forward on his chest when sitting, and his back will be rounded. By 3 months this picture has undergone marked changes: The infant shows little or no head lag, managing to hold his head upright from horizontal to vertical position, can tighten his shoulder muscles and straighten his thoracic region with only moderate rounding of the lumbar area; and although his head may bob with slight movement, he can hold it fairly steadily when sitting. What an achievement! But consider the infant who arrives for a 3 month check at the pediatrician's office displaying the behavioral patterns of a 1 month old? He has lost 2 valuable months which will have to be made up. Could this loss have been prevented? We think so.

What is needed, clearly, is some way to assess the fine focus behaviors that were appearing during the 8 weeks before the sitting test was repeated and the infant was found to be delayed. Then, the minute a tiny lag began to show up, the interventionist could have begun treatment to prevent it from snowballing into a 2 month delay.

What is needed is some way to assess fine focus behaviors so that when a tiny lag begins to show up it can be treated immediately.

Again, educators know today only too little of what to look for. They would need to study the fine focus behaviors of thousands of infants in each culture (since some cultural differences do show up on scales such as the Brazelton); they would then have a cross sectional view of development that would illuminate a fully detailed developmental sequence. It could not be too rigid; it could not include items which did not validly get at the developmental picture, but it would be more helpful than the extremely gross sequences now available.

We are developing a fine focus sequence in our Infant Program for the sitting problem. The program manager, who formerly taught kindergarten children and used to draw silhouettes of her pupils' heads as Christmas gifts for them, devised a related technique of holding an infant in a sitting position before a piece of white paper taped to a wall. With a light shining at the infant, a shadow would be cast on the wall which she then traced onto the paper. The paper was marked with a grid so that the degree of vertical, the angle of the baby's neck, and the relative roundness of the back could be plotted.

Here was a quite graphic visual display of the infant's gradual progress to a head-steady, upright position. We still have not standardized this on enough infants to know what we should expect week by week, and we still have to consult with the physiotherapists and the physicians in order to know what exercises to prescribe when we think we are not getting a good trend line of progress.

hey, don't forget about me!

We are on the threshold in our work with infants in many ways. This is as it should be, perhaps: We are after all on the threshold in our work with infants in many ways. It is nearly unheard of among most lay audiences that an educator would even think of working with an infant. One day our sequences *will* tell us what to do next, especially in the case of a severely handicapped child who needs help—without quite so many trips to the phone or across the street to the Clinical Training Unit people. (Of course, we will always need to interact, to some degree. We cannot hope to have the expertise of 11 different disciplines under one hat.)

THE PHYSICIAN'S ROLE As noted, the primary care physician should see the severely handicapped child more often than the usual once monthly pediatric schedule demands. The physician should assume the primary responsibility for identifying children at risk during the first weeks of life, for steering the family immediately to developmental-facilitating resources in the community, and for monitoring the child's progress in a week by week fashion for as long as close surveillance is indicated. *The physician should assume the primary responsibility for identifying children at risk during the first weeks of life, steering the family to resources, and monitoring the child's progress.* Since a few severely handicapping conditions do not show up immediately even with highly sophisticated screening (e.g., hearing is an especially difficult matter to screen, partially owing to the problems presented by severe but selective hearing loss), physicians should conduct repeated screenings during the early years, even of those children who are not apparently at developmental risk in the first weeks.

THE EDUCATOR'S ROLE • The educator will soon become, in all probability, the person with the primary legal responsibility to facilitate development in the infant; with the passage of Public Law 94-142, provision was made for the handicapped child down to the age of 3 years. Burton White and many others have already begun to protest that this age is far too late for most developmentally delayed youngsters:

At three years, the developmental fate of the child is already largely sealed. You can't turn around a child who is handicapped to any great extent after that time; in fact, the main groundwork for development is laid in the first two years of life. (Television broadcast, ABC-TV, January 5, 1976.)

The educator's role is likely to expand, broaden, and become infinitely more demanding in the next decade, This means that the educator's role is extremely likely to expand, broaden, and become infinitely more demanding in the next decade. Looking back at the past 10 years, one can see an unmistakable trend line: In 1965, it was recognized that for many children, age 6 for beginning school was too late, thus evolved Project Head Start. In 1968, there was the emphasis on the 0 to 3 group.

Before anything else, the educator should facilitate the parent's active involvement, In intervention programs, the educator's role or that of any other developmental specialist in the child's early life should be primarily that of *facilitator*. Before anything else, it is the parent's active involvement as the primary program manager that should be facilitated. There is a remarkable tendency for the parent in the early stages of an infant program to model his/her behavior very closely on that of the educator. If the educator pulls the infant to sitting in the course of an examination or talks to the infant, the parent almost invariably will pull the infant to sitting during the next interactions—and will talk to the infant if talking has been modeled, using the identical words used by the educator.

This indicates two things: First, the parent is unsure of the proper way to handle the baby, particularly a handicapped baby. Second, this uncertainty and a desire to do well for the child combine to produce a



great dependency on the only model of good performance in sight—namely, the educator. This dependency is useful in the early stages of the infant program, since it fosters excellent skill acquisition. Like the baby, however, the dependent parent must eventually be weaned; the educator's role is to transfer responsibility for the program's management to the parent so that eventually the educator is used primarily as a resource to help the parent identify new behavioral goals or to supply strategies.

- When an educator looks at a severely handicapped infant with a view to planning remedial interventions, his or her only certainty is this: There are no easy answers or solutions, no perfect remedial programs. If the search for the perfect assessment instrument has been frustrating and has produced no single instrument that pleases everyone or serves everyone's purposes, the frustration is all the more acute in the search for predictable, foolproof interventions.

That there *is* frustration should be no surprise, however. Intervention is so explicitly related to assessment that imperfections tend to be infectious between the two. Meier (1975) stated the interdependence very well: A screening or assessment procedure, according to Meier, should lead to identification of children so accurate that "description of their problems is sufficient for institution of remediation and/or prevention" (p. 663). Further, Meier noted that "when a satisfactory, comprehensive, developmental screening system has been field tested and thoroughly debugged, it will be useful *only* if it plugs into practical intervention programs" (p. 644, *italics added*).

As was noted earlier, the perfect assessment instrument should so clearly pinpoint and define a child's requirement for remediation that it virtually spells out the contents of a remedial program. The assessment instrument would not merely predict what a child's abilities will be at some undesignated future time, but would also tell the interventionist what must be *done right now* to improve the child's functioning.

Educators' inability to give definitive answers to many questions comes not only from their lack of a perfect assessment instrument, however. There is also this to consider: We are all so new at caring for

REMEDIATION OF SEVERELY HANDICAPPING CONDITIONS

Intervention is so explicitly related to assessment that imperfections tend to be infectious between the two.

We are all so new at caring for severely handicapped children, that it is small wonder we are still searching for answers.

severely handicapped children in places other than hospitals or institutions and are still such beginners in the effort to provide meaningful interventions with *infants*, that it is small wonder we are still searching for answers. Lambie, Bond, and Weikart (1975) remind us that "only five years ago when infant education was first proposed as a serious project, the frequent response was 'What would you ever do with an infant?' " (p. 271). Indeed, in 1976 that question is still heard, and in some respects it is not the naive question it first appears to be.

When educators talk about infant intervention programs, they do not mean those essentially "compensatory" programs in which a baby from a culturally disadvantaged environment is bombarded with "enrichment" stimuli. Nor do they mean those infant programs that are merely extensions downward of day care programs offering primarily custodial or babysitting services. Rather, they are talking about programs that are conceptually far more complex and ambitious as they seek to remediate—or help the infant to overcome the effects of—insults far more sweeping than mere cultural deficit: prenatal, perinatal, and postnatal assaults on the central nervous system.

In discussing this complex topic for which there are no simple answers, it might be useful to invoke one of the oldest writing conventions: to sort out the issues and problems by asking and offering answers to the basic journalistic questions—the why, when, where, who, and what of intervention. This seemingly simplistic tactic may focus this discussion on some rather important issues that might otherwise elude us. Some questions are easier to answer than others. What are offered below are by no means the "only" answers; they are merely my own view of remedial intervention with severely handicapped infants.

WHY INTERVENE? *D* This is the question that one might almost choose not to answer, on grounds that it is unnecessary. Educators accept the legal mandate to provide education for all children. They accept the humanitarian and ethical view that one is obliged to intervene—that to fail to intervene is the unethical course. But aside from these fairly obvious philosophical issues and answers, there are some legitimate practical considerations associated with the basic *why* question, and they deserve answers. Educators know that they do not have a perfect assessment instrument on which to base the perfect intervention. They also know that they do not yet have a complete sequence of expected infant behaviors on which to build the curriculum for intervention. Therefore, might not more harm than good be done by intervening with less than perfect instruments?

Waiting for the acid tests that "prove" that interventions have been appropriate is an error of extreme caution, Waiting for the acid tests that "prove" that interventions have been appropriate, waiting for the results of longitudinal studies, or waiting for someone to develop perfect instruments—these are errors of extreme caution that would be, in my view, altogether counterproductive. I think educators need to take risks, to work with instruments that they know to be incomplete yet useful, to utilize whatever resources are available—in short, to do the work before the answers are in.

It is better to do something than to do nothing-if only to draw parents into remediation efforts. I propose as a general rule that it is better to do something than to do nothing, if for no other reason than the following: The parents of severely handicapped infants must be drawn into the care, the education, and the remediation early. It will be virtually impossible to expect intelligent participation on the part of parents if everyone else in the picture chooses to "do nothing."

- It is not enough merely to assert that the earlier the intervention, the better it will be. Educators tend to accept that view almost as a matter of blind faith; that is, if the results of intervening when a child is 1 year old are good, the results of intervening when he is a newborn are bound to be better.

I am not so sure that there are definitive facts to support that argument. Further, many critical questions have been raised about optimal timing of intervention. To give merely one example, some writers ask whether certain visual discrimination tasks might not be accomplished faster and with less stress if one waited for children's fully developed visual acuity—in other words, "don't hurry the intervention." Rynders and Horrobin (1975), in another example, wonder whether the daily tutoring of very young Down's syndrome children will lead to "too early plateauing" among these children (p. 174).

But as noted above, intervention programs have increasingly in the last decade been aimed at younger and younger children: The effort to modify the (postnatal) environment in order to make it more responsive to the needs of at risk children has extended into the newborn and premature nurseries, for instance, in the extraordinary interventions of investigators like Barnard (1973), Scarr-Salapatek and Williams (1972), and others. White has pointed out that the compensatory early programs have also aimed increasingly downward: from 4 years to 3 in the first shift and then, in 1968, to include children in the 0 to 3 years range. It is hard not to agree with Bruner (1970), who stated,

We are at a stage now where we believe that it is necessary to intervene publicly in the early years of life where necessary, and *I think now it would be fair to say that the early years of life begin at birth*, (p. 109, italics added)

I take the view—arbitrary as it may be—that there are critical reasons for beginning an intervention as early as possible.

The first of the reasons for intervening early is one I have mentioned already in another context: Apart from the benefits to the child, there are important benefits to be reaped by the child's care givers who need to be drawn into this picture early. Parents or other care givers need the time to adjust to their child's handicapping conditions (see, for instance, Fraiberg, 1975; Neilsen, Collings, Meisel, Lowry, Engh, & Johnson, 1975) and to come to grips with their own needs. They must begin to develop their own confidence; if they do not have the confidence to establish a nurturing relationship with their child early, they may withdraw from an overbearing and frightening situation. That is one reason for supporting the earliest possible intervention.

But there is another reason, and it is spelled out quite compellingly in a recent article by Dobbing (1975), an English specialist in brain development. According to Dobbing, there are

periods of special vulnerability during brain growth which represent once-only opportunities to grow the brain well; . . . if the opportunities are missed or conditions poor at these times, there will be lasting, irretrievable deficit and distortion of the adult brain, (p. 3)

Dobbing's research with rats has clearly borne out this contention. While the dangers of extrapolating from animal research to humans is recognized, the research reported is particularly important because, as Dobbing stated, "There is no great difference between mammalian

WHEN TO INTERVENE?

Many critical questions have been raised about optimal timing of intervention.

Intervention programs have increasingly in the last decade been aimed at younger and younger children.

Early intervention gives parents the needed time to adjust to their child's handicap.

species in the pattern of brain development" (p. 9).

The special period of vulnerability studied by Dobbing is the particular growth spurt that occurs when the glial cells multiply and make myelin, when the most rapid phase of myelination occurs, and when the arborization of the nerve cells occurs, thus establishing the brain's electric circuits through the dendritic connections. In other words, this is a period when a lot is happening. In rats, this period occurs after birth, during the suckling phase. In Dobbing's study, growth restrictions imposed on the rats during this period, through undernourishment of their lactating mothers, produced irreversible deficits in the brain and in total growth, as well as structural and functional distortions in growth. Deficits were found in the cerebellum (the part of the brain that plays an important role in motor coordination) and in synaptic connections. There were biochemical distortions and permanent alterations of behavior. The effects of undernourishment during other, noncritical periods were reversible.

Through post mortem studies of brains from fetuses and dead children, Dobbing and his colleagues have been able to pinpoint the period of such special vulnerability in humans, and this information runs contrary to older ideas about brain growth.

Research indicates that most of the human brain growth spurt is postnatal.

It has been clearly shown that although the human brain growth spurt begins in fetal life, about the middle of gestation, it continues at least until the second birthday and probably beyondThe recent finding that the human brain growth spurt occupies a long period of development, *and that most of it is postnatal*, has practical implications. It is during this period that good brain growth should be actively promoted by ensuring good environmental conditions during its only opportunity to grow properly, (p. 9)

These findings are consistent with what Mason (1970) has described as deprivation effects in which, without appropriate input, there are structural and biochemical changes in growth, "not merely developmental arrest but also functional disintegration of established systems" (p. 36). For instance, withholding visual stimulation leads to permanent impairment of the retina, "cellular changes in the visual fields of the central nervous system," and so on (p. 35). Finally, the Dobbing findings and their implied message about the importance of intervention during critical developmental phases in the first 2 years would seem to mesh with the known importance to language development of intervention in the child's second year (Schaefer, 1970).

WHERE TO INTERVENE?

Intervention should occur wherever the nurturing environment exists.

Most investigators call for any one of several combinations of home and center programs.

- At one level, the answer to this basic question is simple: Intervention should occur wherever the nurturing environment exists. There are few hard and fast findings favoring either a home based or center based program. Most investigators, and I am among them, call for any one of several permutations or combinations of the two. There have been reported rather imaginative programs designed to supplement a basic home program or delivery systems designed to compensate for difficulties in population distribution. Such alternatives as itinerant teachers, respite care, day care activities, and a mobile unit are suggested by Rynders and Horrobin (p. 185). The mobile unit concept is timely indeed. In a Seattle newspaper on January 7, 1976, there is an article describing the use of two mobile classrooms to reach children in Washington's migrant labor camps who have "fallen through the

cracks' of education because their families are on the move" (Wright, 1976, p. A4).

But at another level, the administrative rather than the physical "where," the answer is also simple and allows little room for disagreement. Legislative and judicial mandates regarding education for all have unmistakably placed responsibility for eventual if not present management of infant programs on the public schools. This represents a philosophical as well as physical shift in emphasis and place of responsibility. This change is still in process here but has already been accomplished elsewhere. For instance, in England, administrative responsibility for handicapped children was recently transferred from the health services to the education branch of the government. I feel that the public schools are the logical place to begin serving children who will very likely need lifelong comprehensive care; the public schools are the community resource that can best coordinate that care.

- This critical question can at least partially be answered by what I have just said. If the schools are the obvious places to run infant programs, it stands to reason that educators are going to be part of the intervention. It is also important to note here that educators are in fact the only professionals who are required by law to concern themselves with interventions with severely handicapped children. But they will be only a part of the intervention—it is important to reiterate that. Without exception, every writer who addresses the issue of intervention with infants cites the parents as interveners, often the primary interveners. Writers disagree somewhat on the particular role of the parent, and the amount or special quality of activity are matters of legitimate disagreement. Yet the agreement on the importance of the parents as change agents, interveners, remediators, participants—or whatever term one chooses to use—is so striking that one must remember that this receptivity to parents has not always existed. What AS truly incomprehensible is how long it took professionals to appreciate the critical importance of parents' contributions.

But educators and parents are not the whole story, either. Most of the writers who discuss intervention with infants pay homage at least to the concept of the interdisciplinary team: Here again, names and particular roles cover the whole gamut. (For instance, one group of writers calls such a team approach the "trans-disciplinary model" (Neilsen et al., 1975). The point I want to stress is that educators are now coming out of their narrow professional homes and are finding it mutually beneficial to share responsibility with specialists from other disciplines: pediatricians, developmental specialists, and so on.

As it works in our Infant Program at the University of Washington, parents are in fact *the* remediators. We find that the pediatrician can assess the infant's performance and can contribute special expertise to diagnoses; the developmental specialist in our program acts as a facilitator. But it is definitely the parents, primarily mothers in this case, who do the actual work of remediation. As indicated earlier, we have found that parents use the developmental therapist as a model. Even behaviors about which the therapists have said nothing are copied by parents—the way a baby is picked up, the way a baby is examined or dressed.

Consider the "logic" of this situation: Routine well-baby pediatric care is usually provided once a month. When one realizes the numbers of changes occurring in an infant's development during the course of that month it seems absurd to restrict examinations and prescriptions

The public schools are the logical place to begin serving children who will very likely need lifelong care.

WHO SHOULD INTERVENE?

Educators are the only professionals who are required by law to concern themselves with interventions with the severely handicapped.

It is incomprehensible how long it took professionals to appreciate the critical importance of parents' contributions.

Professionals are now coming out of their parochial homes and finding it beneficial to share with other specialists.

, don't forget about me!

An on the spot observer/intervener is needed to monitor changes and respond to them immediately.

Training parents to observe and intervene increases the likelihood that the response will be timely and nurturing.

A parent who is immediately responsive to the infant's needs, but who lets the infant try tasks for himself first is likely to produce a healthy child.

to such gross intervals. Clearly, one needs another observer/intervener on the spot—someone to monitor systematically and directly the daily or even more frequent changes that tell about an infant's functioning and to respond to those changes instantly. With parents trained as observers, the importance of their responses is increased. By training parents, by using their observations, and by enabling them to intervene, educators have established a *dynamic* process for assessment and intervention. This process is responsive to the infant's changing needs and therefore increases the likelihood that the response will be timely and nurturing.

At present educators proceed on the principle that the normal, nurturing responses of the caretaking environment (those during feeding, bathing, etc.), and particularly the natural interactions of the infant and its parent (or other primary care giver) are most likely to foster development. White and his colleagues (1973) have studied the successful caretaking patterns of parents who seem to be doing an optimum job. Their conclusion was that a parent who is, in the first 8 to 9 months of life, immediately responsive to the infant's needs, but who lets the infant try tasks for himself before assistance is provided is likely to produce a healthy, optimally developing child. This is an oversimplification of White's research and does not give a clear picture of parenting in detail. However, it is rich in implications for every facet of the child's life. White and his colleagues provided other parameters:

1. Offer the child relative freedom to explore, to find answers to problems, to become excited by what he experiences.
2. Provide help when the child needs it—above all make sure that the child learns to use the adult as a resource, since this seems to characterize the truly successful child more than any other single variable.
3. Offer the child opportunities to give and receive affection, and to express annoyance.

In order to arrive at these requisites of good development, White and his colleagues studied over 1,000 6 year olds using the (animal behavior) ethologists' approach (e.g., Lorenz and Tinbergen). They arrived at a thorough description of the behavior of healthy, well developed 6



year old humans. Then they worked backward to the infant stages and attempted to evolve a notion of what caused the healthy development that resulted.

There are two problems with what is otherwise a great achievement in White's work. One is that he assumes the second year is far more critical than the first, because developmental differences "do not turn up in any but a pathological 1% of the cases" before the second year of life, using standard developmental tests. It remains to be proved that the tests are not what produce this picture. The very young child—before the second year of life—is beginning to present a more complex picture as professionals evolve more sensitive ways to look at him.

The other problem concerns the second, and perhaps even more serious matter of "wastebasketing" the 1% (who in fact are more likely to be 3% to 5%) and concentrating all attention on the merely mildly or moderately handicapped. White merely dismissed the severely handicapped. Such an ecology of professional effort seems to be unbalanced, at least to one biased in favor of the severely handicapped children who most need help. But White's considerable influence in stressing the critical significance of the first 3 years of life has been valuable.

To summarize, a good remediation system is administered by a wide range of interested individuals in a child's environment, but particularly should involve the advice and participation of the primary care physician, parent, and educator or other developmental therapist (nurse practitioner, etc.), whoever happens to fill the development facilitator role in that particular child's life, given the staffing patterns in developmental care delivery within his or her community.

- These aspects of what I consider to be an appropriate intervention should now be obvious:

First, what is programed in an intervention will depend on what has been found in assessing an infant's functioning within the context of a sequence of expected (or expectable) behaviors. If an infant does not know how to swallow, educators should intervene by helping that infant to develop the prerequisite motor skills for swallowing. Further, as stated in another paper concerning infant programs (Haring, Hayden, & Beck, 1975) eliciting respondent behaviors, for instance such behaviors as the rooting or Mora reflexes, can also serve as an intervention strategy for infants whose problems involve asymmetry of response, incomplete response, or decreased muscle tone.

Second, it should also be clear that the intervention should break the skills to be learned into fine enough slices or components to enable the infant to master these at optimal rates and in sequence. As a corollary to that, it is obvious that the intervention must build in a quantified measurement system so that all program decisions are based on direct and daily measures of this performance. In that sense, then, the intervention should continue to be concerned with both assessment and programing, the two interactive elements of an ongoing remediation.

Third, the major thrust of any intervention should be to increase those responses that yield information about the child's level of functioning and that promote opportunities for nurturing response by the adult. Basically, educators need to increase the rate of occurrence of responses that increase information about the infant; they need these data not only to inform their own responses but also to enable them to structure and arrange the infant's environment to maximize opportunities for promoting growth.

WHAT IS THE INTERVENTION?

Eliciting respondent behaviors can serve as an intervention strategy for certain infants.

Intervention should continue to be concerned with both assessment and programing.

The major thrust of any intervention should be to increase those responses that yield information about the child's level of functioning.

Fourth, although the perfect assessment/intervention system is still in the future, I have already said educators cannot afford to sit back and wait for it to be discovered. There is no need to wait, in any case: there are already some important beginnings, such as those predictive measures whose validity and reliability have been given a fair test (e.g., Rosenblith, 1975).

Lipsitt (1975) has also done some extraordinary studies that yield important information. Lipsitt used sensory stimulation (in this case, taste) not only to induce responses that could measure infant receptivity and functioning but also as a means to "alter basic congenital responsivity." Lipsitt has "explored the earliest contributions of the environment to the newborn's response repertoire" (p. 67). He has found that there is not only a quantitative difference in the infant's



sucking response to different taste sensations, but also that the quality of response changes markedly. Infants, according to Lipsitt, appear to "savor" sweetened fluids (p. 69).

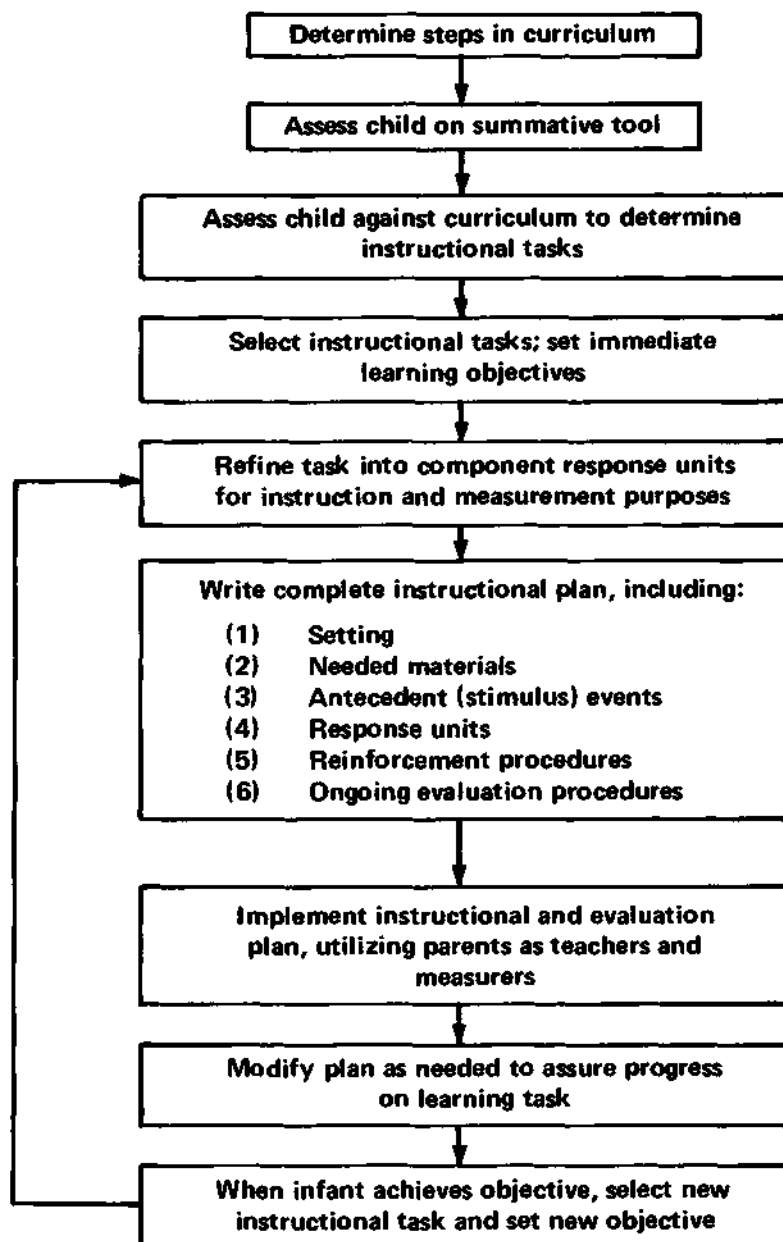
Lipsitt also commented on an equally if not more important finding of his studies: the "obvious indication of an experiential effect."

When newborns have experience in sucking for sucrose, an immediately subsequent experience with water 'turns them off.' . . . there is the strong suggestion that memorial processes are already working during the newborn period, such that there is a lasting impression made. . . of the experiences endured. These are the beginnings of learning processes, (pp. 69-70)

- The steps in the instructional process shown in Figure 2 illustrate the "how" of intervention at the Experimental Education Unit (EEU) Infant Programs.

HOW DOES INTERVENTION WORK?

Figure 2. Steps in the instructional process of infant programs.



- Those of us at the Experimental Education Unit consider Seattle to be a fairly progressive area for programs for the handicapped (even the severely handicapped). Yet Seattle was recently the setting for a highly contemporary horror story. In early January 1976 an infant was born to an indigent unwed mother whose attending physician has been a prime mover in the home delivery fad now gaining ground across the

CONCLUDING COMMENTS

Seattle, Washington, a fairly progressive area, was recently the setting for a contemporary horror story.

country. This physician offered the mother a pleasant delivery at home, at a fee of \$35. Unfortunately, the birth was a breech presentation. (Could the physician have anticipated this? Probably.) And the delivery was rather traumatic for the infant.

Because of perinatal anoxia the child is now unable to swallow, has few of the normal newborn reflexes, is suspected to be substantially brain damaged, and is being fed with a tube; and the mother is planning to leave her consort, the baby's father, because she cannot face raising the child. The father, an exalcoholic, plans to raise the baby but has given thought to strangling it; he was restrained by "vibrations" from his daughter when he questioned her about her will to live, despite her handicap. The father knew nothing about possible programming for the child. The couple was given no prenatal advice about the possibility of complications at delivery. They could barely persuade the physician to accompany them to the hospital he directed them to drive to (no ambulance suggested) when he realized that the baby was in distress.

Weeks later the father had yet to be informed by doctors at Children's Orthopedic Hospital about the possibility of a thorough work-up at the Child Development and Mental Retardation Center, which routinely does such work-ups and offers comprehensive programming for the handicapped. Yet that Center is a mere two miles away from the Children's Orthopedic Hospital where the child was admitted, and Children's Orthopedic Hospital is directly affiliated with the Child Development and Mental Retardation Center. Apparently, at this writing there have been no attempts to counsel the father and no exploration of the parents' fitness to bring up a handicapped child.

So much for service delivery in our *model* metropolis; so much for what we all *thought* we had accomplished and could take for granted in
We have a long road to travel, medicine, pediatrics, maternal and child health, child protective ser-
even to get to where we thought vices, and education. We have a long road to travel, even to get to where
we were, we thought we were.

I have been given substantial assistance in developing, writing, and editing this manuscript by Gael D. McGinness and Connie G. Pious.

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the role of the parent

ruth christ sullivan

Key Ideas

- *Programs for children with severe communication and behavior disorders reflect new thrusts of a strong educational base with the primary interveners being teachers and the main technique being behavior modification.*
- *Many facilities still do not want parental involvement in a cotherapist role or in any part of the program serving autistic children.*
- *Not only are teacher training materials on children's mental illnesses often erroneous, but they also do untold amounts of harm by placing blame on parents, especially mothers.*
- *Although parents have an intimate knowledge of their child's needs, it is usually professionals who determine programs and priorities for the severely handicapped.*

- For those of us with a child who is severely, multiply, and profoundly handicapped, I suppose the first and hardest thing to accept is that the problem is severe, unrelenting, and lifelong. Some parents recognize and accept this awesome fact sooner than others, but until this realization comes they cannot make the necessary preparation for total war.

CURRENT REALITIES AND REALIZATIONS

The first and hardest thing to accept is that the problem is severe, unrelenting, and lifelong.

And at this time in history, total war it is! The child's handicap also affects the entire family—severely, multiply, and profoundly. In a real sense it has laid siege to the household—mostly, of course, to the parents, often especially to the mother.

At the beginning, most parents' armamentarium is pitifully devoid of the needed war materiel—information about the condition, "how to" advice, warmth and support, and wise counsel from those who survived a similar siege. Slowly, these parents begin to gather their own ammunition, all too often with little or no outside help and at tremendous psychological, physical, and financial cost.

Then comes the second realization—that not only do they have a severely handicapped child, but also there are few, if any, services for him, appropriate or otherwise. Most community services, even those for the handicapped, do not have suitable programs for this special child's needs, and few seem to know what to do—or really care.

The second realization is that there are few, if any, services for the child.

Shortly afterwards comes the third realization—that unless the service delivery system changes, most of these children will never get what they need and the terrible spectre of lifetime institutionalization, usually beginning in early adulthood, begins to haunt. Some parents, feeling utterly helpless and exhausted in trying to battle the system, despair and give up their children to the total care of the state.

Shortly comes the third realization—that unless the system changes, most of these children will never get what they need.

But a growing number of parents come to yet a fourth realization—that the system is changeable, that they and their children have a basic right to demand a response, that many within the system itself are becoming their allies, and that by banding together with others this new parent power can crumble walls which only a few years ago were considered impregnable.

A growing number of parents come to yet a fourth realization—that the system is changeable.

Perhaps in a few years parents of severely handicapped children will need to go through only the first realization—that they have a profoundly handicapped child. If diagnostic services are plentiful, accessible, and sophisticated, parents will not have to spend precious years of their and their child's lives trying to find out what is wrong. And if appropriate ameliorative services are immediately at hand, then parents need not go through the painful and expensive search. And if all these are available, then the parents' future role will be more "watchdogging" than changing the service system. Until that time, however, parents will have to learn to deal with inadequacies, ignorance, apathy, disinterest, lack of funds, bureaucracy, and occasionally even hostility.

- In order to get some idea about what parents of the future will want and need, let us take a look at the current picture for one special low incidence group among the "hard core" handicapped—those called autistic.

ONE SPECIAL GROUP-THE AUTISTIC

The following discussion of service trends for autistic children is based on information collected in 1973 by the Information and Referral Service of the National Society for Autistic Children (NSAC) in preparation of *U.S. Facilities and Programs for Children with Severe Mental Illnesses: A Directory*. The survey covered 456 facilities and

programs across the nation. As far as we in NSAC know, the data for this discussion are the first to be based on a comprehensive national survey designed to get not only general data about services but also answers to specific questions often asked by parents.

Although this survey was based on the needs and services of "severely mentally ill" children, the analysis of this data can help to reflect similar trends and needs of other individuals with severe developmental disabilities. The survey findings were:

New programs have a strong education base in that the main "interveners" are teachers and the major technique is behavior modification. This is by far the most sharply defined and important trend confirmed by our data. It reflects a new attitude toward children with autism or "severe mental illness." Even the psychologically based labels are rapidly being discarded and replaced by neurologically based terms such as "developmental disability," "communication disorder," "behavior disorder," "perceptual dysfunction," or "disorder of information processing." Although originally believed to be environmentally caused psychogenic conditions and therefore amenable to psychiatric-psychological therapy, these handicaps are now seen as primarily brain dysfunctions for which there is yet no known cause or cure.

The handicaps of the autistic are now seen as primarily brain dysfunctions for which there is yet no known cause or cure.

This finding also reflects the attitude that *all* handicapped are educable, an attitude only recently coming into its own with new "zero reject" educational policies and new federal laws (e.g., Education for All Handicapped Children Act, Public Law 94-142) which will no longer tolerate exclusion of handicapped children from the public schools.

For a long time parents of autistic children have known, empirically, that appropriate education is more useful to their children than play therapy or psychoanalysis. And like parents of the other severely handicapped children, once organized, they demand laws that mandate suitable education, not psychotherapy, which has received low marks in the stern test of practical results. It is estimated that there is no known cure for 85% of all handicapping conditions. Until that miracle comes, it is likely that—as in autism—education will continue to be the primary "therapy."

Until the miracle of a cure, education will continue to be the primary "therapy."

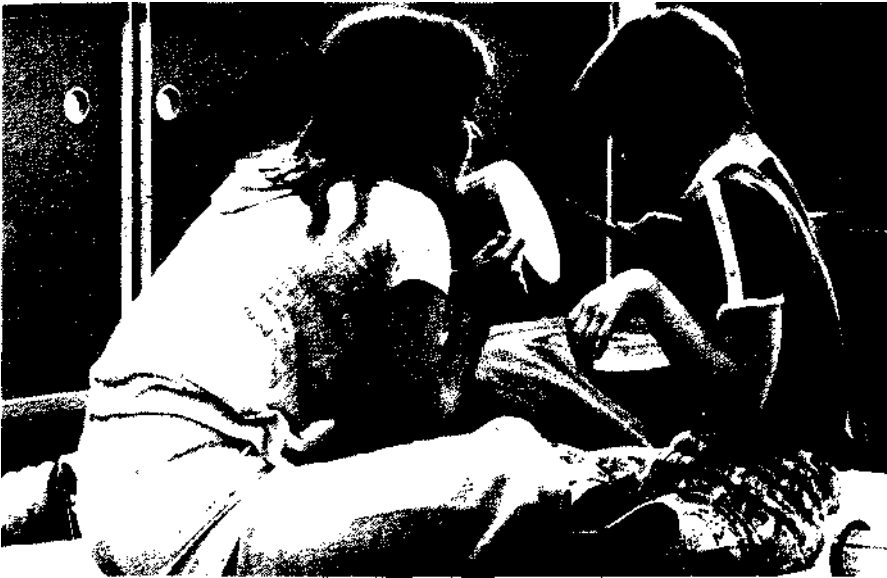
A large number of programs (174 of 456, or 41%) have been initiated only very recently (1968 to 1973) and most (266 of 456, or 63%) were begun between 1963 and 1973. These statistics reflect the youth of programs which admit the severely handicapped child. The directors of programs primarily for "severely mentally ill" are either the founders and/or organizers of the programs or are the first directors. Most of these programs have a small enrollment; only a few have as many as 30 or 40 students. To my knowledge, only two programs are housed in buildings constructed especially for this group of children. Most new programs begin in borrowed, begged, or rented space—often in school or church basements.

Programs for autistic and other severely handicapped children are still in their youth.

Most of those newly listed are not truly programs for autistic or autisticlike children. They are programs already in existence for other handicaps and have just opened their doors to these more severely handicapped individuals.

Behavior modification is apparently an important part of these new programs.

Behavior modification is listed as at least part of the curriculum in a/most all new programs begun between 1968 and 1973. This is particularly true of programs which have a high percentage of autistic and autisticlike children. Since behavior modification is apparently an



important part of these programs, there is indication that training for work in this field should include experience in this technique. This will be further discussed later under the section "Needs As Parents See Them."

Few programs (less than 5% of the 500 listed) are primarily for the "severely mentally ill" child. Only 58% of the programs admit "autism" as a policy and those that do often display their bare tolerance of autisticlike behavior by such restrictions as "no more than 10% autistic allowed" or "must be toilet trained, verbal, self feeding, self dressing, etc." The severely, multiply, and profoundly handicapped are still a long way from universal acceptance into programs.

There are a significant number of mental hospitals (both public and private), even some with children's and adolescents' units, which will not admit "severely mentally ill" children. We found several states where not one facility will take an autistic child as a matter of policy. This severe exclusion is probably more common for autism than for any other handicapping condition.

The high tuition costs at private facilities, especially residential, are beyond the means of most families. One facility costs \$29,000 per year. Another (one of the few residential programs in the country specifically for late teenage, young adult autistic persons) costs \$26,000 per year. The average annual tuition costs at a private residential facility is approximately \$12,000. This is only an educated guess, based on data from our survey.

Even care in public facilities is almost never without cost to parents, unless the family is indigent, in which case the child often becomes the ward of the state and the family has even less control over his care. When sliding scale charges are made, families must submit a financial statement. Health insurance policies seldom cover nonmedical residential care. (One parent recently complained bitterly, "If my child were a criminal, he'd get free care.")

There is a sudden drop in the number of programs, both day and residential, for children, especially girls, after puberty.

Programs for adults are so rare as to be practically nonexistent.

The severely handicapped are still a long way from universal acceptance into programs.

Severe exclusion is probably more common for autism than for any other handicapping condition.

The average annual tuition at a private residential facility is approximately \$12,000.

Even care in public facilities is almost never without cost to parents.

hey, don't forget about me!

Many programs restrict parents to certain areas and generally discourage parental involvement.

Many facilities do not want or encourage parent involvement in the operation of the program. Of the programs surveyed, 15% said parents are restricted to certain areas. Some residential programs will not allow parents in their children's eating or sleeping quarters. Some facilities allow parents to see their children only in a reception room. One day facility reported, "No parents allowed on premises without permission," and a few others reflected that attitude. Some facilities will not allow parents to speak directly to their child's teacher or therapist; parents must speak to an assigned social worker. Finally, quite a few residential facilities would not allow parents to visit for a specified time after admission—mostly between 6 weeks and 6 months, but one said 1 year.

Eight facilities report using electroconvulsive therapy on children. Four of these are in state mental hospitals; four are private facilities. They are located in Connecticut, New York, New Jersey (2), Maryland, Pennsylvania, Illinois, and Texas.

Most states do not have accreditation standards for programs for the severely handicapped.

Most states require only fire marshall approval and do not have accreditation standards or a licensing agency. It seems there is no comfortable niche for these facilities. This is one area which will need careful evaluation. Programs for the retarded seem to have progressed far beyond this stage.

These were our major findings. Although the autistic and autisticlike are rare in the population (4:10,000), almost 100% of them fit into the category of severely, multiply, and profoundly handicapped. They are among the most difficult of the handicapped to plan services for. Typically, they are the last to be included and the first to be excluded. Perhaps the state of services for the severely handicapped can be gauged by what is happening for those called autistic.

NEEDS AS PARENTS SEE THEM

Parents often perceive their children's needs at least as well as professionals do.

- Many professionals and parents of the severely handicapped see eye to eye on what *the children* need. Schopler (1971) showed that parents often perceive their children's needs at least as well as professionals do. However, with few exceptions programs for the severely handicapped are designed for the children's needs as determined by professionals.

The needs of parents have generally been neglected by the service community.

To my knowledge, there has never been a large scale study to find out what these *parents* need. Although there are a few respite care programs around the country, designed to relieve parents (and in some cases, foster parents) for short periods of time, the needs of parents have generally been neglected by the service community.

Some of the needs and recommendations discussed in the following sections will overlap; some are already being addressed in varying degrees in different parts of the country. Some are listed with primarily the parent in mind; most concern the child, of all ages. The discussion falls roughly into four categories: education, research, community services, and what parents want for themselves.

EDUCATION NEEDS

Mandatory education laws need to be constantly monitored to make sure some handicaps cannot be excluded.

D In the area of education, parents see several needs. First, mandatory education laws for the handicapped need to be constantly monitored to make sure some handicaps cannot be excluded. Since it has been demonstrated that not only do the severely handicapped benefit from education, but also that education is often a major weapon in combating their handicap, school systems must no longer be allowed to exclude them with impunity.

The second concern is that emphasis should be placed on appropriate educational services. Teachers should have training and experience in

working with the severely handicapped, particularly the handicapped to whom they are assigned. It is important that children with low incidence handicaps have specially trained teachers. For instance, a deaf or an autistic child must have a teacher who has had more "training" than merely a lecture and a tour of a center in which there were deaf or autistic children. Too often a special education degree represents experience with only mental retardation. Recently it has become common to include courses in other areas, such as learning disabilities, emotional disturbances, cerebral palsy, and epilepsy. Only a handful of universities and colleges give students actual experience with autistic children, and no academic degree is yet available in autism or severe communication and behavior disorders.

Appropriate educational services also include suitable class size and teacher-pupil ratio and appropriate age range. Class scheduling must be reasonable—some severely handicapped are currently allowed in school only 3 days a week for 1/2 day. Travel time must also be reasonable, not 1 or 2 hours a day on the bus. Some states limit travel time to 30 minutes one way. "Appropriate" also means the least restrictive environment, with prudent mainstreaming.

A third educational need is appropriate training for teachers and other personnel, including courses in special education for regular classroom teachers. If necessary, a crash program to disseminate teaching techniques for severely handicapped children must be established. There are very few places teachers can now go for an intensive course in working with the various severe handicaps. For autism these are the Judevine Center in St. Louis and Benhaven in New Haven, Connecticut. Other centers offer seminars and workshops, but no actual experience with the children.

A fourth need is for an update of the information in teaching materials. Since considerable negative attitudes toward parents were revealed in our survey, we feel it is imperative that erroneous information about parents is eliminated. This is especially true of the behavior disorders where, until recently, parents (especially mothers) were almost universally blamed for their child's etiology. No parents have been more maligned by professionals than those of autistic children. The following is an example from a text currently in use in some university speech and hearing departments:

Family life is usually of a cold, formal type and the child has received very little fondling, cuddling, or warm and genuine expressions of parental affection. The mother's behavior is mechanical and does not convey love. When a child with early autism is brought to the clinic, his parents readily volunteer the opinion that he is severely retarded and should therefore "be put away." (Vetter, 1969, p. 81)

Fifth, parents feel teachers must be trained to deal with children who cannot toilet, feed, or dress themselves. Children lacking these three skills were found in the survey to be the most difficult for personnel to handle. Therefore, they were the ones who were most often excluded.

Sixth, there is a need to include course work and experience with the severely handicapped in the curriculum for students in professional schools. This is especially true for medical schools, but also other fields such as nursing, social work, physical education, and psychology.

Teachers should have training and experience in working with the severely handicapped to whom they are assigned.

If necessary, a crash program to disseminate teaching techniques for severely handicapped children must be established.

It is imperative that erroneous information about parents be eliminated from teaching materials.

Teachers must be trained to deal with children who cannot toilet, feed, or dress themselves.

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RESEARCH NEEDS

Biophysical research is the only hope that one day there will be cures for our children.

Research into more effective teaching practices is imperative if legislative mandates are to accomplish what they intend.

COMMUNITY SERVICES NEEDS

For those who will need an institutional environment, appropriate, warm, humane, and creative programs should be established.

Parents and professionals must be truly cooperators with equally important roles to play.

Community education is needed especially for service personnel who may come in contact with the severely handicapped.

- Parents look to researchers in the biophysical sciences for answers to the causes of handicapping conditions. Parents' contributions can include lobbying for more research appropriations, encouraging a receptive climate among parents, cooperating with researchers, and collecting information through parent associations. For example, when a research project was started on autism in twins, NSAC's Information and Referral Service was able to submit a ready-made list to the researchers, saving them some search time. As more parents join organizations concerned with the handicapped, information pooling could become even more useful. Research is the only hope that one day there will be cures for our children, or better still, that there will be no handicapping conditions at all.

There is a sudden burst of interest in the severely handicapped. Examples include the recent organization of the American Association for the Education of the Severely/Profoundly Handicapped (AAESPH), federal legislation (especially Public Law 94-142) which gives priority to unserved children, the inclusion of autism in the Developmental Disabilities Act, and the mandate in the Vocational Rehabilitation Act of 1973 that 10% of their clients be severely handicapped. Research into more effective teaching practices is imperative if these mandates are to accomplish what they intend. Research is also needed into better ways of more rapidly disseminating information which is already available.

- Diagnostic services should be accessible, sophisticated, and available at a price parents can afford to pay. For adults, when it is no longer feasible for them to live with their families, community living settings like group homes should be provided. Currently, there are only a few such models in this country for the severely handicapped. For those children and adults who will need a very structured institutional environment, appropriate, warm, humane, and creative programs to suit their needs should be established. The word *institution* does not need to strike terror into the hearts of parents.

Close parent-professional working relationships should be encouraged—so that they are truly cooperators with equally important roles to play. Also, parent-consumer participation at policy making levels should be encouraged. New legislation mandates parent members on advisory boards. Some states mandate a majority of parents. In fact, it has been seriously suggested by more than one parent organization that funds for programs be given to parent groups and that parents be given the power to hire the appropriate professionals, in order that *consumers* decide what services are to be provided.

Community education is needed especially for service personnel whose duties might bring them in contact with a severely handicapped individual. Many people in the community—police, ministers, ambulance drivers, personnel in emergency rooms and mental health centers—have had little or no contact with severe handicapping conditions, particularly those that are not physical. This incident was related by the mother of an autistic son:

Yes, in spite of his body size, Sang is in most ways a small child—a small child who is learning to shave, whose jumping up and down with glee or in anger can shake the house. And yes, he sucks his thumb. Surely we could break him of that habit. Indeed we could—but we are not convinced that we should. Sang gets comfort from that thumb in the same way

that an infant does. But the thumb may also serve as a protection for him. His size and his normal appearance lead to expectations that he can't begin to fulfill. We especially fear the police who move fast to assume an adolescent is surly or arrogant when he doesn't meet their verbal demands. Sang has come close to being brutalized by the police. It was that thumb that helped people who had reported him as a "peeping Tom" to realize that Sang might be in need of their help, rather than their needing police protection from him. Just in time this realization allowed them to stop the police action they had asked for. (Stokes, 1974, p. 5)

Respite care for parents and the family is needed. It is highly possible that large numbers of patients would never be institutionalized if there were good respite services in the community to allow families rest from the burdensome care of the severely handicapped. Good respite care seems to be preferred by parents even more than short term institutionalization.

Agencies already in existence should be encouraged to broaden their programs to include the severely disabled. For instance, a community mental health center could screen and train foster parents. It could train Scout and Campfire leaders so that some severely handicapped children might fit into groups of normal children (or even special groups). Courses, consultation, and guidance to recreation leaders in the community could be offered in the hope that they would open their programs to the severely handicapped.

The center could offer courses to the adult handicapped themselves. For example, there could be courses in the social graces—how to behave in a restaurant, at the movies, on the bus, at a party, or how to talk to the opposite sex.

Adult education could be opened up for the severely handicapped. For example, a group of parents of adult retarded and autistic in a southern state requested and got a swimming class with special instructors from their county adult education office.

- An open, sensitive awareness of the parents' feelings and needs is imperative if professionals are to give maximum help to parents. A survey of parents of autistic children (Salvagne, Schollenberger, & Stokes, 1974) found that 42% of the parents believed that professionals were insensitive.

Parents want to be told if a professional is uncertain. In the 1974 survey mentioned previously, 68% of the parents said that although they would feel confused and anxious about this uncertainty, all but one of that 68% wanted to be told anyway. It is interesting to note that 63.4% of the parents disagreed that "professionals are the experts and know best."

One of the most common complaints from parents is that professionals seem unwilling to impart their knowledge or to listen to them. In the 1974 survey, 79% agreed with the statement, "If professionals would listen, there is a great deal I could tell them."

Some parents are regarded by some professionals as "difficult" when they press for more information than is being given. Akerley (1975) wrote:

Most parents, especially in the earlier days, were forced to rely on their own efforts (to get information on etiology, diagnosis, symptoms and treatment) because of the dearth of

Large numbers of patients would probably never be institutionalized if there were good respite services in the community.

Agencies already in existence should be encouraged to broaden their programs to include the severely disabled.

WHAT PARENTS WANT FOR THEMSELVES

One of the most common complaints from parents is that professionals seem unwilling to impart their knowledge or to listen to them.

hey, don't forget about me!

professional expertise. What is surprising is that their curiosity, regarded as a positive, healthy sign in the *children* of psychotic parents, should have been traditionally discouraged in their adult counterparts, (p. 277)

Among the most devastating of statements made to parents are these: "It is not for you to know" and "Put him away and forget he was ever born." During the earlier days of my son's handicap, I was told by a psychiatrist when I asked for reading references, that "You'd just be confused." Another mother was so angered by how she was treated that she wrote a monograph, *The Unhelpful Social Worker* (Finn, 1967). There is no dearth of parents' accounts of bad treatment.

Parents have found it helpful when professionals, especially those using behavior modification, ask them to select which behaviors should be eliminated first. In the Stokes' survey of parents, lack of speech rated first as the "most difficult" behavior and need for constant supervision rated second. (Lack of toilet skills rated fifth!) Parents need and want from the professionals an equal role in assigning their child's priorities and in planning for his immediate and distant future.

Parents need and want from professionals an equal role in assigning their child's priorities and planning his future.

Professionals need to be sensitive in assigning extra duties for parents.

Professionals need to be sensitive in assigning extra duties for parents (usually mothers) at home. Stokes (1974) pointed out:

There may be a negative side to this focus on parents as trainers of their own children. Too often, we feel, in the creation of programs or techniques that teach parents how to teach their child the assumptions about what was needed have been made by professionals. The burden of this extra teaching—not expected for one's normal child—is assumed to be part of a parent's responsibility. And because parents are grateful for all the help they can get the professional is not apt to hear about the extra strain this may provide an already overburdened family. There may be parents whose tenacity or capacity to implement such a program is limited, or whose other demands are overwhelming. Parents may not have the strength of mind to resist such professional advice and pressure. For such parents these programs may create more problems than they attempt to solve, (pp. 8-9)

FUTURE PLANNING

Parents need professional assistance in estate planning, income tax allowances, Medicare, and private insurance plans.

Legal difficulties are intricate and parents need help with them.

Parents long to have confidence that there will always be warm, caring, imaginative, consistent persons who will care for their child.

- As the child gets older, parents are increasingly concerned about what will happen to him when they are gone. Most parents know very little about financial benefits, such as Social Security and Supplemental Security Income, as they relate to their child. They need professional assistance in estate planning, income tax allowances. Medicare, and private insurance plans.

Legal difficulties are intricate and parents need help to understand how legal guardianship works, what public agencies are responsible for what care, and how an imaginative plan involving the least restrictive environment can be worked out for their individual child.

Parents long to have confidence that there will always be warm, caring, imaginative, consistent persons who will care for their child and oversee his welfare and happiness. Stokes (1974) was probably speaking for all parents when she said she would like to see

the kind of environment where emotional needs of retarded persons can be joyously met by the non-handicapped—a residence [which takes] into account the needs of the caretakers as well as . . . the residents. . . . It seems to us that the

key factor for persons such as those we are concerned with may be how to provide human companionship to people who still need parental type structure and control—who don't know how to relate to peers—yet who need and can appreciate an atmosphere where normal humans are enjoying life, interacting and having fun. And these people can contribute to the pleasure of others who are mentally adult—but only if those others enjoy a caretaking role. (p. 14)

- It is hoped that this parent's perspective of the current situation for the severely handicapped and for their advocates will encourage others to speak out and to listen. The problems described here will need continual updating and elaboration to be accurate; the solutions offered here will become stronger the more they are scrutinized and discussed. The following suggestions for prospective research projects should open the doors for further ideas:

CONCLUDING COMMENTS

- Exploration of factors which allow parents to keep their children at home. New York State and Minnesota have just initiated a policy paying families a stipend for removing their child from a state institution.
- Exploration of needs as perceived by parents. Almost all services are designed to meet needs as perceived by professionals. It would be interesting to determine whether or not grant funding policies would change if *parents* were determining needs.
- Exploration of the needs of the older handicapped.
- Exploration of innovative ways to fill the unoccupied time of those whose handicaps do not allow them to learn and explore on their own.
- Exploration of the phenomenon of crises living and its effects on the family and community.

It would be interesting to determine whether or not grant funding policies would change if parents rather than professionals determined needs.

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early intervention

k. eileen alien

Key Ideas

- » *Early intervention leads to the learning of appropriate behaviors rather than the maladaptive ones that tend to accumulate, compound, and take over when the severely handicapped child is left to learn haphazardly from the environment.*
- *A good preschool program, which provides effective and well sequenced learning experiences for each individual child, has a clearly specified assessment system of long and short range goals underlying its entire program.*
- *An effective preschool curriculum must be built on sound principles of normal growth and development and be implemented through the systematic application of behavioral procedures such as shaping, priming, cuing, fading, and differential reinforcing.*
- *Early intervention should help the family move in small steps toward successfully handling their own problems, as well as learning to work with their severely handicapped child.*



• During the course of the last 200 years, the educational fortunes of severely and profoundly handicapped children have waxed and waned. There have been times of tremendous optimism, as when Jean-Marc-Gaspard Itard (1848/1962) transformed, through painstaking shaping and teaching, *l'enfant sauvage* (the wild boy of Aveyron) from "a degraded being, human only in shape, incapable of even elementary perceptions such as heat or cold" (p. vi) into a child who, 2 years later, was described as "an almost normal child who could not speak but who lived like a human being . . . was clean, affectionate, able to read a few words and to understand much that was said to him" (p. xii).

Next Itard's student, Edward Seguin, demonstrated beyond all doubt that there was no such thing as an ineducable human being (Itard, 1848/1962, p. xiv). And then Maria Montessori, deeply influenced by Seguin, obtained remarkable results with all kinds of handicapped and retarded children, many of whom had been considered uneducable. In the middle of the 20th century, the work of the learning theorists came into prominence. They developed strategies and techniques and furnished demonstrable and irrefutable evidence that every individual, no matter how handicapped, can and will learn, given an appropriately arranged learning environment. An early and dramatic example of this is one of the first operant conditioning studies done with a severely retarded child (Fuller, 1949).

Interspersed and even contemporaneous with these periods of optimism were, of course, "down" times, times of pessimism and dehumanism and destructive determinism. Less than 40 years after Itard's well documented successes, the French *Dictionnaire de Medicine* stated, "It is useless to combat idiocy." And, almost concurrent with Montessori's incredible impact on the education of retarded children came the declarations of Fernald (1912) that retarded individuals (*feble-minded* was the word in those days) were a "parasitic, predatory class, a menace and a danger to the community, with the females invariably immoral and the males invariably criminals." Then there was Cattell (1940), predicting, with thinly veiled eugenic fervor, that as a nation the United States was galloping toward intellectual bankruptcy if it did not control the procreative activities of all who tipped to the below average side on the IQ scale. And finally, even now one can find innumerable incidents of parents of Down's syndrome children and parents of children with other treatable anomalies being advised professionally at the time of birth to have the infant institutionalized as soon as possible (Dmitriev, 1975).

Fortunately, however, it is not the doomsayers who have won out in the long haul. Rather it is the optimists, the believers in the worth and dignity and abilities of every human individual. These are the people who continued to demonstrate through their various disciplines that every child, even the most severely handicapped, could learn. And always among the most optimistic have been those who believed in early education for very young children. This group, too, has seen a waxing and waning in the educational fortunes of their 1 to 5 year old clientele; but they also have continued in their efforts and so today there is considerable support for early childhood programs just as there is considerable support for the education of the severely handicapped. With both of these educational fields in public favor, now is the time to demonstrate how effective a good preschool program can be in setting every severely handicapped young child on a road that will maximize his learning capabilities.

A HISTORY OF OPTIMISM AND GLOOM

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Now is the time to demonstrate how effective a good preschool program can be.

A LOOK AT THE ISSUES

• In discussing how to provide the best and most effective preschool program for young handicapped children, a number of issues need to be mentioned. I will touch lightly upon several of these—timing, assessment, curriculum and behavioral implementation of the curriculum, teacher training, interdisciplinary interaction, and parent involvement. Then I will discuss some of these issues in greater detail while leaving others to further discussion by other authors in this book.

The first issue has to do with providing handicapped children with very early preschool experiences. There is good evidence, albeit controversial in some respects (Horowitz & Paden, 1973), regarding the importance of early education for *all* children. I would take the position that there can be no question of its importance, however, for

The more handicapped the child the more important it is that he or she have access to preschool education and enter into it as young as possible. **into it as young as possible.** handicapped children; the more handicapped the child the more important it is that he or she have access to preschool education and enter

In fact, I believe that it is nearly impossible to start a severely handicapped child too early in a sound preschool program. Even for the severely handicapped child, early intervention can be considered an important prevention—a prevention of the devastating cumulative and compounding effects of the child's deficits. Only by such early preschool intervention can educators help every child to acquire more functional, adaptive behaviors instead of the bizarre and nonfunctional behaviors which develop when a child is left to learn on his own from the everyday environment.

It is only through early intervention that educators can take advantage of those critical periods, those responsive young years when every child is most receptive to learning. It is likely that Itard's *l'enfant sauvage* may well have acquired functional speech, as well as the social amenities and cognitive responsiveness which he *did* acquire, if Itard had been able to work with him during the critical early childhood language acquisition years. Itard, of course, was able to work with him only in the later childhood years, at which time, according to the "critical periods" literature, it may be too late to learn certain response classes, or if learned at all, these responses will be different or somehow not as good (Horowitz & Paden, 1973).

A second consideration has to do with assessment and ongoing evaluation of each child and of the program as a whole. Each child, upon entering the program, needs to be the subject of a detailed assessment in order to place him on a continuum from "no skill" to "highly developed skill" on a variety of tasks within every area of development. Much, of course, can be learned through systematic and objective observation of the child. Can the child sit up unsupported? Crawl? Pull up to a standing position? Walk? Grasp objects? Release those objects? Make sounds? Form words? Laugh? Cry? Explore the environment? In addition to such informal observations, there are also a number of more formal ways to assess the child and to measure individual progress. One

A good preschool program must have a clearly specified and carefully implemented ongoing assessment system underlying its entire program. such system will be discussed later. The important issue here, however, is that a good preschool program, in order to provide each child with effective and well sequenced learning experiences, must have a clearly specified and carefully implemented ongoing assessment system underlying its entire program—one that specifies both long range and short range goals and methods of assessment.

The next concept or issue is that of curriculum content or model. There is no evidence to suggest that there is any *one* best curriculum model for handicapped children (or for nonhandicapped). However, an

effective curriculum for severely handicapped children must have two particular components. One is a foundation on sound, theoretical principles of normal growth and development with a firm anchoring in developmental sequences and an applied knowledge of the interrelatedness of all areas of development—the historical "whole child" concept inherent in which are many implications for integrated developmental learning experiences. The other component is a systematic implementation of this developmentally based curriculum through procedures derived from applied behavior analysis.

Few would argue with the first contention. As for the second, there is enough accumulated and thoroughly documented evidence to suggest that a properly conceived behavior modification approach is, to date, the most effective way of providing an educational program in which severely handicapped individuals can learn. As Bijou and Cole said at the NARC Conference early in 1975:

Traditionally, an individual who does not learn what is presented is considered to be incapable, indifferent, unmotivated, or lacking. The behavioral view, on the other hand, is that if the student does not learn, something is wrong or lacking in the teaching situation. (p. 12)

In line with that statement, therefore, I would make the plea that every developmental curriculum be overlaid with good behavioral tactics of shaping, priming, cuing, fading, and differential reinforcement. Such procedures are readily translated into everyday preschool practices, thus facilitating the learning of every task from the most simple to the most complex (Allen, 1972). Brief examples of these tactics will be found in a subsequent section of this chapter.

Another important component of good early education for young severely handicapped children is the teacher. Quality training of teachers of early childhood development programs has always emphasized the acquisition of teaching skills that focus on developmental sequences, on individual differences among children, and on the provision of activities and experiences that promote learning through child selected as well as teacher directed activities in a naturalistic setting with as few restrictions as possible. Furthermore, in early childhood teacher training, there has always been concentration on learning to help children acquire the basic self help skills that enable them to become self sufficient and self managing as soon as possible. Such basic teacher skills provide a firm and tenable base for the special skills and attitudes which the teacher of young handicapped children must acquire. Weiss (in press) described these special attributes well:

More than most, she [the teacher of severely handicapped children] must be able to improvise, to change her program or approach at short notice to match a child's interest or problems. More than most, she must be able to cope with life's biological functions. More than most, she must accept and have respect for the child's individuality while maintaining a firm concept of the importance of the group process. She must have an almost unlimited enthusiasm for progress, regardless of the size of the step and the slowness of the rate. An apathetic, indifferent child can "catch" enthusiasm for almost any appropriate activity from a patient, skillful, enthusiastic teacher who has learned the principles of successive approximations and knows how to apply them.

An effective curriculum must be built on sound, theoretical principles of normal growth and development and on procedures derived from applied behavior analysis.

A properly conceived behavior modification approach is, to date, the most effective way of providing an educational program for the severely handicapped.

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Still another idea to which educators must attend is the interaction with and incorporation of the skills and knowledge of other disciplines into the program. Occupational therapy, nursing, nutrition, speech and hearing, social work, pediatrics, dentistry, and psychology can each contribute greatly in the putting together of a solid, individualized set of learning experiences for every handicapped child. Frances Connor (1975), in a recent presentation, emphasized that teachers being trained to work with young handicapped children receive a cross disciplinary training and that teacher educational institutions be restructured to accommodate a professional "mix." Connor admitted, of course, that present teacher training is already almost prohibitively intensive and expensive and that to add this dimension will be a further strain, but if children have a right to live full lives, then they deserve the most effective teachers possible.

Teachers being trained to work with young handicapped children must receive a cross disciplinary training. One of the most significant concepts of all is the importance of parent involvement in every preschool program, especially in those programs for handicapped children. Such involvement is crucial if there is to be generalization of the skills learned in the classroom to home, neighborhood, and community settings. Furthermore, by listening carefully to parents, the teaching staff gains important insights on how to work more effectively with each child. It must be remembered, however, that the parents of a handicapped child are often under tremendous physical strain and emotional stress, especially in the early years of learning to include a severely handicapped child in the family. Therefore, as with children, a teacher must start with where the family is and move in slow, sequential steps that bring family members a sense of success in handling their own problems, as well as with learning to manage and teach the handicapped child.

These then are the basic considerations that need to be fitted together to provide a truly effective preschool program for young severely handicapped children. At this point, I shall address myself in greater detail to certain of these issues: the developmental curriculum and its implementation, and the use of assessment procedures to demonstrate how functional the curriculum content and procedures are in terms of individual and group progress. I shall not further discuss teacher attributes or training, interdisciplinary components, or parent point of view and involvement, in that these issues are considered in greater detail by other authors in other sections of this book. Nor shall I discuss the basic tenets of behavioral techniques. These are spelled out more specifically in other publications having to do with the teaching and management of all types of exceptional children. (See the additional readings at the end of this chapter.)

OVERALL CURRICULUM CONSIDERATIONS

• To set the scene for this brief discussion of curriculum, I repeat what so many have said: that young handicapped and nonhandicapped children are more alike than they are different. Both need to be cherished and respected. Both need opportunities to learn through exploring an environment rich in stimulating activities, rich in carefully arranged play experiences, rich in social responsiveness from peers and affectionate adults, and rich in recognition for their efforts as well as their achievements.

A good developmental curriculum can accommodate group as well as individualized programing in the least restrictive setting possible. It follows then that a good developmental curriculum is just as appropriate for handicapped children as it is for nonhandicapped children because it can accommodate group as well as individualized programing for each child and can do it in the least restrictive social and



physical setting possible. It allows children to move at their own pace, but sees to it that they *do* keep moving even by employing gentle coercion on occasion. Usually, however, such coercion is not necessary if the program provides interesting and stimulating activities and materials that gradually step up and maximize the opportunities to learn while minimizing pressures on the child.

- The overall broad goals of such a curriculum are to help each child to acquire at least a beginning repertoire of skills in each area of development. These skills with special reminders regarding severely impaired children might be described as follows:

DEVELOPMENT OF SKILLS

Movement skills. These enable children to explore, manipulate, and control their physical environment through the mastery, first of simple responses that lead with systematized programing into increasingly complex and coordinated gross and fine motor skills. The more handicapped the child the more intensive must be the emphasis on developing motor skills and the more extensive must be the opportunities to engage in such activities. This is one of the places that gentle coercion is sometimes necessary. For example, it might be necessary to put a child on a tricycle in spite of his fright and resistance, *if* tricycle riding is what the orthopedist and physical therapist have suggested in order to improve the child's contralaterality in crawling and other basic locomotive skills. The child then must be provided with constant physical support until he begins to enjoy the activity itself, that is, until the activity becomes intrinsically reinforcing. This usually occurs quickly, especially if the tricycle is carefully designed with trunk support bar, stirrups, and other safety and supportive features.

*The more handicapped the child
the more intensive must be the
emphasis on developing motor skills.*

The promotion of social skills requires carefully sequenced steps because the multiply handicapped child almost invariably has suffered severe social deprivation.

Social skills. These allow children to focus on, respond to, approach, and interact with adults and other children in a mutually enjoyable fashion and lead eventually to consideration for others, cooperation, sharing, and assertion of their own rights—in other words, group participation skills. The promotion of social skills requires many careful decisions and carefully sequenced steps based on a knowledge of when and how to intervene because the severely handicapped child almost invariably has suffered severe social deprivation leading to many aberrant social responses. These children must be helped toward social and emotional independence and maturity while they may still be very dependent physically on parents, teachers, and other caretaking adults; this is a difficult but not insurmountable task for the preschool to manage.



Care must be exercised that self help skills does not become the dominant feature of the daily program.

Self help skills. Such skills make children more attractive and self managing individuals who can initiate and pursue their own activities and take care of their own personal needs. Care must be exercised, however, that this does not become the dominant feature of the daily program. Furthermore, it must be remembered that many other learnings can be combined with the teaching of self help skills—identifying and naming body parts, learning colors, counting (buttons, buckles, pockets), making tactual discriminations (smooth raincoat, fluffy fur). The opportunities are endless.

Opportunities for children to engage in communication activities should be interwoven with every other activity.

Language and communication skills. These include attending to and responding to gestural and spoken language and lead eventually to enjoying and participating in fingerplays, stories and chants, verbal give and take, and expression of ideas and needs. Opportunities for children to engage in communication activities should be both formal and informal and should be interwoven with every other activity and skill development task with careful attention to both receptive and expressive skills.

Concept development and perceptual discrimination skills. These must be of a basic nature leading to the processing of sensory data—visual,

auditory, tactile, and kinesthetic. The focus at the start must be on those systems that are more intact or least impaired. Again, these learning activities should be both formal and informal and should be interwoven into all other activities.

Arts and crafts skills. These involve a variety of materials such as paint, paste, clay, sand, water, cloth, and wood. Such activities are particularly good for the severely handicapped child, especially the materials that allow the child to get into the material firsthand (fingerpaint, clay, sand, and water) because the child can control these materials without first having to learn to control a tool. Lowenfeld (1957), in discussing programs for the severely handicapped institutionalized individual, said, "Creative activities serve as a means for emotional release and adjustment, they promote independence and flexibility of thinking, they can be used for group dynamics and social interactions." His words are as relevant today as they were 20 years ago and as relevant for severely handicapped preschool children as they were for the severely handicapped in institutions of whom Lowenfeld was writing.

Creative activities aid emotional release, promote independence and flexibility, and can be used to encourage social interaction.

- All of these skills then, as indicated earlier, can be learned to some degree of proficiency, through a thoughtfully designed preschool program. Such a program requires that there be a well regulated balance between specifically selected, sequenced, and structured lesson type experiences initiated by the teacher and more open ended experiences in which children engage in a variety of self initiated social, motor, and dramatic play activities. The program, to be maximally effective, should operate in a physical environment where:

THE ENVIRONMENT

The program, to be maximally effective, should operate in a varied and flexible physical environment.

1. Furnishings and equipment have a versatility that allows for arranging and rearranging to accommodate step by step learning in every area of development.
2. There is a variety of materials and activities presented in such a way as to stimulate responses of many kinds.
3. Readily adaptable facilities for self help routines make it possible for all children to learn to take care of as many of their own self care needs as possible.
4. There is ample opportunity to observe other children, to play parallel with them, or to interact cooperatively.

- All of this can be accomplished, as noted earlier, in a good sound developmental preschool program. In such a program, the daily schedule is of great importance. Activities need to follow one another in orderly and predictable sequences, since young children, especially severely impaired young children, do not easily accept changes and departures from routines; there is great security in knowing "what comes next." Too, there must be a balance and an alternation between quiet and more active periods with plenty of time allowed for each activity and each routine to be accommodated by and accomplished to the satisfaction of every child, even those who must move slowly and with great difficulty. There must also be times for teacher structured activities and times for child initiated activities that have, for the severely handicapped child, a strong teacher guided component. The larger the blocks of time allowed for activities and the fewer the number of transitions required, the more relaxed and pleasant will be the preschool day for both children and teachers. Figure 1 gives an example of a functional preschool schedule.

SCHEDULING

The larger the blocks of time allowed for activities and the fewer transitions required, the more relaxed and pleasant will be the preschool day.

Figure 1. Sample preschool program schedule.

8:45 to 9:15:	<p>Arrival</p> <p>Individual health inspection.</p> <p>Greetings and brief conversation with each child and the parent (if the parent brings the child to school).</p> <p>Practice in self help skills (dressing, toileting, getting drink of water, use of tissues, etc.).</p> <p>Getting started on large motor activities, preferably out of doors if weather and facilities permit.</p>
9:15 to 9:45:	<p>Large motor and social skills activities*</p> <p>Child initiated and teacher prompted (tricycles, kiddie cars, wagons, large hollow blocks, climbing equipment, walking boards and sliding boards, rocking boats, large ball play).</p> <p>Severely impaired children can usually make good use of only very brief periods of "free" play; therefore, teachers must take the initiative and structure many interesting large motor play experiences so that handicapped children can learn to manage their bodies in space and get physical control of their environment. Mazes and obstacle courses, which can be made to accommodate wheelchairs and children with prosthetic devices are examples of good teacher structured large motor activities.</p>
9:45 to 10:00:	<p>Transition</p> <p>Rehabilitation of play area by children with teacher's help. (All children can help at least minimally in rehabilitating the environment, and this is an important mode of contribution to and participation in the group.)</p> <p>Self help activities (removal of wraps, toileting, nose care, handwashing).</p>
10:00 to 10:20:	<p>Snack and small group language and social interaction</p> <p>Self feeding skills (drinking, finger feeding, pouring, learning to use utensils).</p> <p>Social skills (passing, sharing, inviting).</p> <p>Conversation (joining in with gestural, vocal, or verbal responses; also specific "casual" language experiences introduced by teacher).</p>
10:20 to 10:50:	<p>Cognitive perceptual motor and language development activities*</p> <p>In small groups, at work tables for most children, with a carefully selected balance of the following activities: sorting, matching, object naming activities, size and form recognition, spatial orientation, number and counting experiences, stories, pencil and scissors tasks.</p> <p>Learning experiences aimed at orientation to task and learning to attend to auditory and visual stimuli (the teacher and the materials) must be built in as requisites, of course.</p>
10:50 to 11:05:	<p>Transition</p> <p>Rehabilitation of academic area by children, with teacher's help.</p> <p>Toileting for those who need it or are being toilet trained. (Children who are being toilet trained need to be taken to the toilet much more frequently.)</p>
11:05 to 11:35:	<p>Selection of creative activity*</p> <p>Work with creative materials and craft activities: easel paint, fingerpaint, clay, crayons, chalk, paste, scissors, water, wood, glue, stitchery.</p> <p>(Much teacher prompting and guidance is required for most of these activities, especially in the beginning. Art experience and craft work is an important part of the daily program, however, for "multiply handicapped children <i>can</i> learn to work with purpose, with an end product in view. They discover that hands are tools for making objects The sense of achievement is a giant step toward some forms of independence" [Schattner, 1971].)</p>

Figure 1. Sample preschool program schedule (continued!).

11:35 to 11:50: Music and rhythmic activities (large group).

Songs and fingerplays.

Calls, chants, and jingles to promote auditory responses and tone discrimination.

Rhythm instruments.

Patterned rhythmic activities (e.g., Looby Lou, Hop Old Squirrel) and free rhythmic movements.

(Severely handicapped children often are not able to improvise movement to music as freely as do normal children; yet, there is much they can do even with minimal locomotive skills. Joining in movement and music making is a tremendously satisfying group experience for all children, but especially so for the severely impaired who have little opportunity for communal activities of any kind.)

11:50 to 12:00: Departure

Self help (getting outdoor clothes on, collecting possessions to take home).

Exchange of farewells (a brief recall of today's events and quick preview of what tomorrow holds in store).

During these periods, one to one tutorial sessions for specific skill development should be arranged as needed for individual children.

• Schattner (1971), in the introduction to her book on providing *IMPORTANCE OF PLAY* preschool curriculum for young multiply handicapped children, stated that an effective program must be "based on the principles of early childhood development" and "developed within a framework designed for exploring and interpreting the environment. A living, creative curriculum makes special use of play, music, arts and crafts, dramatics, and an enriched language program to serve some of the special needs of multiply handicapped children." Such a curriculum obviously makes great use of many kinds of activities often grouped by early childhood educators under the all encompassing rubric of play, which is viewed as a major avenue for early learning of all kinds.

The nonhandicapped child often seems to move through such a play oriented learning environment on his own momentum, self propelled as it were, acquiring new skills and practicing previously learned skills in the course of his spontaneously initiated play activities, his ready participation in group activities, and his eager attention to the teacher directed play type tasks. But this is not so for the severely retarded child. He needs what might be called a "double barreled" program—a sound developmental curriculum upon which is imposed an exceedingly detailed program that breaks every developmental task in every area of development into carefully detailed and sequenced subtasks, or to put it another way, into discrete behavioral components. As mentioned earlier, there are a number of such curricula available, several of which are referenced at the end of this chapter. (For a more detailed description of those curriculum models, see Haring & Cohen, 1975.)

While many of the items in these curricula require one to one attention from the teacher, aide, or volunteer, many can and should be accomplished in the context of pleasurable play experiences. In looking

Teaching a child to play is essential if the child is eventually to experience the intrinsic motivation that makes play the prime medium for a host of satisfying learning experiences.

A preferred activity may be used either as a teaching field or as a rewarding consequence.

SUCCESSFUL USES OF FAVORED ACTIVITIES

over the Pennsylvania Training Model (Pennsylvania Department of Education, no date), for example, I noted few items which could not be taught within the course of a typical preschool session, provided, of course, that the teacher-child ratio is adequate and the teaching staff has the goals for each child well in mind and carefully specified on paper. (This will be discussed subsequently in the section on assessment.)

There is, of course, one major problem in attempting to use the play environment as a major teaching field: the minimal, even nonexistent array of play skills that the severely handicapped child brings to the preschool setting. Thus teaching a handicapped child to play is often one of the several first hurdles that must be taken by teacher and child if the child is eventually to experience the intrinsic motivation that makes play the prime medium for a host of satisfying learning experiences. Simple as it may sound, however, it is not a simple task to teach a child to play. There are many prerequisite responses that must be acquired and many steps that must be taken: simple but significant first steps like getting the child oriented in the direction of an activity; shaping him into visual and physical contact with the material; rejoicing with him when he makes the first teacher guided contact with the material (even if the child is engaged with the selected object *only* because the teacher has a hand around the child's hand, physically shaping the grasping response).

One almost guaranteed way to hasten the acquisition of play skills is to observe the child carefully over time and to note even the smallest event or activity that seems to engage his interest or attention. This behavioral principle, formalized a few years ago by Premack, is referred to as selection of a high probability (preferred) versus low probability activity. The preferred, activity may then be used either as a teaching field or as a rewarding consequence.

- One example of the successful uses of favored activities (Allen, 1974) has to do with a multiply involved nonverbal child, Mark, who whined and squealed shrilly and pulled himself over to the teacher to wrap his arms around her legs whenever he wanted something. Thus he would whine and pull at the teacher when he wanted to be put into the rocking boat, which was one of the few play materials that he interacted with at that point in his preschool career. Because the child obviously enjoyed the rocking boat, it was seen as a potential arena for many kinds of learning (e.g., social, motor, language). However, teachers were reluctant to continue to provide what he wanted when he whined and squealed inasmuch as these were maladaptive behaviors in the sense that he could indicate what he wanted in more appropriate ways (pointing and vocalizing). Furthermore, these whining spells, often prolonged for one reason or another, interfered with so many other potentially good learning opportunities.

The staff devised, then, the following program: When they saw him looking toward or approaching the rocking boat, a teacher moved to him quickly before he began to clutch and cry and slipped in a quick cue, "Mark, would you like a ride in the boat? Say, 'boat.' " If he made even a remote vocal approximation, he was immediately lifted into the boat and rocked vigorously for a minute or so. Then the teacher might stop the boat, but before the child began to whine for more, she would say, "Do you want to rock some more? Tell me 'more.' " Again, even a primitive vocal approximation to the word resulted in another rocking

session. The two or three other desired activities in the preschool situation which had formerly brought on the child's crying and whining were handled in the same way.

Eventually, through this kind of shaping and teaching, a number of developmental skills were built in and elaborated upon while the range of play/learning experiences was extended systematically in the following ways:

1. To extend the child's social skills, he had eventually to first tolerate and then "invite" one, two, or three other children to ride in the boat with him.
2. To extend his motor skills, he was required to exert minimal and then increasing effort to get himself over to and part way into the boat and, eventually, to assist in making it rock.
3. To extend his verbal skills, he was gradually required to make better and better approximation to the word *boat* and eventually by the end of his second preschool year to string together a simple sentence: "Go boat."
4. To extend his interest to other play materials and thus expand the teaching field as well as the number of experiences that the child could learn were pleasurable, he was required, eventually, to delay his ride in the boat (or play at the water table or use the big red truck, which were also favorite activities of his) until after he had engaged, at least briefly, in some other play experience: "After you have played with the clay for a few minutes, *then* you can have a ride in the rocking boat."

Actually, this search for activities and events which please each child individually needs to be the focus of unremitting effort in the preschool. Otherwise, learning activities for the severely handicapped will be onerous for both child and teacher, rather than joyous. Fortunately, these pleasurable events are more or less readily available, and usually right at the teachers' fingertips. Yet they so often go unrecognized and hence unused apparently because of their seeming insignificance or because of a failure to recognize the momentous implications of certain serendipitous happenings. Let me give two examples that are also favorites of mine.

The first has to do with a severely retarded, microcephalic child, Jody, who did not interact with or respond to any adult, child, activity, or material in the preschool. She neither accepted food from the snack basket nor would she have anything to do with occasional special treats that were offered, such as sips of pop or bits of candy or ice cream. During her initial weeks in preschool, she spent most of her time rocking and staring, except for one seemingly nonfunctional activity which she did engage in for fairly long periods of time: standing on a chair and looking in the mirror that was on the school room side of the one way viewing window between the room and the observation booth. Apparently, seeing her own reflection in the mirror was pleasing to her inasmuch as she kept going to the mirror and looking into it for many minutes at a time.

With this clue the teachers rigged up an easel mirror that could be set on the floor or table or wherever they wanted Jody to use materials. Also, they masked off, temporarily, the lower part of the observation glass so she could no longer see into it, for that kind of looking was not leading to purposeful activity. Then, as they had done before, they

Through shaping and teaching, a number of developmental skills were built in and elaborated upon while the range of play/learning experiences was extended.

The search for activities which please each child individually needs to be the focus in the preschool.

placed her on the floor in the block corner, put blocks in her hand and guided her in doing simple stacking. But now, each time she placed a block, the teacher pointed to the mirror and verbalized, "See Jody. See Jody building with blocks." If she stopped stacking, the mirror was turned away. When she resumed, the mirror was turned toward her again. Within a few days, Jody was engaging in first approximations to play with a variety of materials. Gradually the mirror was faded out and other reinforcers supplanted it—teachers' attention and certain of the play materials themselves.

One more favorite example points up the serendipitous location of a reinforcer for a child who seemed almost unreinforceable. It demonstrates, too, another hurdle that teachers must be willing to take when working with severely handicapped children—that is, backtracking again and again in order to find a response that the child *can* make that will provide both him and the teacher with a successful experience. After all, that is all that is going to keep either teacher or child going.

This second example, Karl, was a 5½ year old child with severe neurological involvement who was functioning at about the 18 month level. He appeared totally oblivious, totally unresponsive to everything in the environment. It was finally decided that getting him to look up and eventually make eye contact when his name was spoken would be the starting point. The first two teaching sessions were discouraging. Not once did he look up or respond when the teacher said his name. It was decided therefore to back up, to expect less from the child and more from the teacher. The verbal cue was extended and made more specific, "Karl, look at me," and physical prompts were added by having the teacher put two fingers under his chin and physically raise his head. More advanced steps in the program would be to fade the physical prompting and finally to fade the extended verbalization until eventually Karl was responding to just his name, which, of course, had been the original but obviously much too difficult goal.



However, even with this careful reprogramming, the daily records indicated that progress was exceedingly slow—the child was obviously unmotivated and the teacher was feeling unsuccessful and frustrated. Luckily, two events happened that were capitalized upon. The first occurred when the teacher reached to pull the child's shirt down over his stomach. Apparently, this created a tickle that was unintentional on the part of the teacher but pleasing to the child—he smiled faintly and jiggled his head upward a little—the first sign of responding to another person that had been seen in the classroom. The teacher continued to tickle him a little each time there was any approximation to the child lifting his head. Predictably, that response began to increase rapidly.

Before long, this brought the second event into focus. As the teacher moved her hand toward the child in order to do the tickling, she noticed that the child followed the hand movement with his eyes. The teacher now had a cue to use with the child that gave him promise of a pleasurable event to be paired with the wearisome verbal cue, "Karl, look at me." Therefore, each time the teacher gave the cue, she concurrently raised her tickling hand to the level of her own eyes, thus prompting and eventually establishing eye contact. Once eye contact was firmly established, Karl began to participate, albeit minimally at first, in a variety of simple imitative activities and subsequently in a variety of simple play/learning experiences.

• In each of the foregoing examples, progress was slow, almost unrecognizable in the beginning. It is likely that if teachers had not been keeping systematic observational records on each child and if they had not had clearly articulated long range and short range goals for each child, they would not have been aware that any one of the three children was moving forward at all. Thus, for all children, but especially for severely handicapped children, whose progress is often so slow, a well specified observation and recording system is imperative. Such systems may use simple counting and recording and duration measures of particular events or task assignments (e.g., How many blocks did Jody incorporate into her tower today? Was this more than yesterday? How many times did Mark resort to crying for what he wanted? Were there fewer episodes this week than last? Were the episodes shorter this week? Is Karl looking up more quickly today than yesterday?). Or the system may consist of minutely detailed assessment tools and behaviorally specified developmental profiles. Most preferable, of course, is a combination of both. Just as there are many good developmental pre-school curriculum models, so are there many good assessment tools, developmental profiles, and task analysis instruments. These, also, are too numerous to mention so I have listed several good examples in the additional readings section of this chapter.

THE NEED FOR ASSESSMENT

Many of these assessments and profiles do multiple duty. They provide for initial assessment of the child, pinpointing where he is on a skill continuum in every area of development, and they can be used for ongoing assessment and evaluation of progress. An excellent example of a highly functional developmental profile is one generated by the staff at the Experimental Education Unit of Child Development and Mental Retardation Center at the University of Washington. It has a multiplicity of uses in the classroom and can be used for individual programming, for curriculum designing, and for reporting of all kinds. In terms of each individual child, the guidelines set out by Lynch and O'Connor (1975) said:

don't forget about me!

When the teacher has determined what the child "can always do," "can sometimes do" and "can never do" (based on the entering assessment results from the Preschool Profile) he or she is ready to start programing for the child. We would like to point out that the skills and activities the child "can sometimes do" are extremely important; . . . the teacher helps the child develop by using programs that strengthen these "some-time" areas and so build even more success for the child, (p. 2)

Further on they point out another valuable aspect of a comprehensive developmental profile:

The Profile helps teachers keep an ongoing picture of the whole range of skills being developed by children and how these skills are interrelated. For instance, as the child learns more skills in gross motor activities, these skills may help him or her to develop play skills. Also the child's success may be the basis for progress in a more complicated skill in another area. For example, the child cannot develop the skill of buttoning . . . until he or she has developed a "pincer grasp". . . . So the profile can help the teacher pull together all of these necessary parts of development in planning activities for the children, (p. 3)

An ongoing developmental profile and a counting or duration measure for specific tasks is an unbeatable combination, An ongoing developmental profile to keep track of overall progress and a counting or duration measure to keep track of progress in specific tasks being taught is an unbeatable combination for individual tailoring of programs that will surely provide each child with one small success after another in every area of development.

CONCLUDING COMMENTS • Providing successes, of course, is what preschool education is all about for every child, but especially so for the young handicapped child. Therefore, educators must insure, as was argued at the outset, that every severely handicapped child be provided with a good pre-school experience—one that begins very early, preferably in infancy; that includes the parents right from the start; that has a curriculum based upon sound developmental principles and implemented through systematic behavioral procedures; that has ongoing assessment and evaluation built into it; and that is staffed by teachers who are aware of the special needs of special children and who can work with related disciplines. A more detailed discussion of several of these areas will be found, as noted earlier, in other sections of this book.

If and when educators provide each handicapped child with these kinds of early learning experiences, then they are providing more than intervention. They are, in the final analysis, taking giant steps toward the prevention of institutionalization, the prevention of family chaos and disintegration, and the prevention of at least some of the cumulative and compounding effects of the severely handicapped children's deficits and handicaps that rob them of opportunities to acquire so many of the more appropriate learnings during the years of earliest childhood when all children can learn more rapidly. From the foregoing pages, then, the only valid conclusions that can be drawn are that all young handicapped children can learn much more than ever believed

possible, but, if they are to do so, they must be served early in an appropriate educational setting within their own community. Only then do educators fulfill their moral and mandated obligations to provide every severely and profoundly handicapped child with the opportunity to live and learn in the least restrictive environment.

All young handicapped children can learn much more than ever believed possible if served early in an appropriate educational setting.



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ADDITIONAL READINGS:
ASSESSMENT INSTRUMENTS

curriculum concerns

victor I. baldwin

Key Ideas

- *The best curriculum in the world is worthless without a delivery system adapted to individualized student objectives.*
- *Program implementers must analyze the task to be mastered, break it down into small sequenced components, and build as many branch steps on that level as are needed until the desired behavior is achieved.*
- *A usable and continuous data collection system is crucial to a good curriculum. Otherwise a child may be kept in frustration on an impossible task or be maintained on it long after mastery.*
- *When the teacher becomes a classroom manager, aides, volunteers, and para professionals can play a key role in implementing the curriculum objectives for the severely handicapped.*

- The exemplary programs discussed in other chapters of this book do not exist in the typical classroom. A critical factor in this situation is that curricula development and deliverance have not been the priorities they should have been in the inservice training programs held around the country. They must become major goals. In this chapter, addressed especially to those working with children every day, I intend to discuss curricula critically: to build a case against all curricula, discuss their shortcomings, and then talk about some of the components of a good curriculum. Eventually I will discuss a service delivery system for that curriculum.

The best curriculum in the world, one that covers virtually every behavior anybody ever wanted, one that is sensitive to anything that anybody thinks it needs to be sensitive to, is absolutely worthless if there is no system of delivery. For example, at Teaching Research (a division of the Oregon State System for Higher Education), we conduct research and evaluation on educational services and procedures, and over the last 8 years we have developed a curriculum that is task analyzed, sequential, and developmentally sensitive. However, when we visit the sites of those who have requested and used our curriculum, we often find that it did not help them very much.

One of the problems we have found is that in some instances teachers take the curriculum and use it in a "lockstep" fashion. They believe that the items on each page are the sequences that they *must* follow to get to the next behavior. In essence, they have not been taught how to use the material. They do not know what to do when the task is not right for the student.

The answer to this problem is to train teachers to use the curriculum correctly. But school districts cannot spare 6 months to send teachers for training. They are lucky if they can break them loose for 3 days. How, in a 3 day period of time, do you show someone how to use a curriculum appropriately in their own classroom? We worked for a 2 year period of time with the teachers in all the deaf/blind programs in the Northwest. We brought them into a demonstration center, gave them training, and still they took the curriculum and "lockstepped" it through. When they found a step that was either too big or wrong, their response was one of two things: Either stay on that step and frustrate the student, or say the curriculum is no good.

In our own program, we now mandate that anyone who wants to learn about this particular curriculum and classroom management model must spend a minimum of 5 days working in our classroom while our teachers make direct observations and give feedback. Our criteria for successful performance are very high, but we have some assurances that by Friday the trainee will know how to adapt the curriculum to the individual student.

Another problem with curricula is that people are looking for a "cure-all," an all encompassing curriculum that allows them not to have to think or adapt. "Give it to me; lay out everything I have to know; and I'll cookbook it." That would make life easier for teachers but I am afraid *that* curriculum has not been developed. Therefore, I will stress once again that a teaching process must be learned that will allow teachers not only to select the best materials but also to adopt and refine them in their own setting. If they do not learn that process, they will never get it from a cookbook.

Another difficulty in building, producing, and disseminating curricula is a concept that we run into frequently: "I didn't invent it;

SOME BASIC HURDLES

Curricula development and deliverance have not been the priorities they should have been in inservice training programs.

Teachers sometimes use a curriculum in a "lockstep" fashion because they have not been taught how to use the material.

People are looking for a "cure-all," an all encompassing curriculum that allows them not to have to think or adapt.

don't forget about me!

therefore, it is highly suspect." All educators take parts and pieces from other curricula, put them in with their own, and then consider it more valuable because they helped design it. We are encouraging people to do this—to beg, borrow, and steal whatever they can from any existing curriculum, curriculum that will allow them to begin to specify more and more behaviors, arrange these behaviors in developmental order, and break out suggested tasks toward a terminal behavior.

We encourage people to beg, borrow, and steal whatever they can from any existing curriculum,

Teachers will soon find that their curriculum will grow. I do not know how big the curriculum is going to be for the population of individuals from birth to 21 years of age. This is another reason I do not think there will ever be a "master" curriculum. At the present time there are 40 or 50 curricula available for the severely handicapped. I do not intend to discuss each of them here. They can be found through area Learning Resource Centers, media centers, the Educational Information Resource Center, or other such centers.

People must be taught what to do when a step is missing from their curriculum,

It has been suggested that a centralized repository is needed that systematically gathers all of these steps and sequences, milestone behaviors, and suggested tasks and makes them available. At the present time that capability does not exist. If it did, there would still be the usage problem I discussed earlier. In lieu of a repository, people must be taught what to do when a step is missing from their curriculum. They must go back and look at the kind of consequences that they are delivering; they must look at the use of antecedents or the cues; or they must build a new step in the sequence. The toughest teaching task ahead is to teach people how to do that, how to branch when they need to branch, how to change the program when it needs to be changed, and how to be sensitive to data. There are many possible misuses of curriculum. Let me now discuss some of the things that should be present in a good curriculum.

THE NEED FOR SEQUENCING

The child may, within a single response class, be functioning at different levels at the same time.

- The first need of any good curriculum is that of sequencing. Researchers can argue about the various sequences; but no one will ever find a single set of sequences for every child. We have found time after time when using a curriculum that we think is developmentally sensitive and has all of the suggested tasks to achieve the terminal behavior that children do not enter at the same level across all skills. The child may, within a single response class such as motor response, be functioning at different levels at the same time.

Sequencing may be misinterpreted as meaning "lockstepped." Most of the curricula that I have seen or been involved with contain milestone or terminal behaviors. Not too many of them have gone the next step and included a task analysis or broken down the steps to arrive at a suggested task toward the terminal behavior. The curriculum should include enough steps to get the concept across, but it may need to be broken down into even smaller steps or branched into a different direction. All possible steps cannot be covered in any single curriculum.

EXAMPLES FROM ONE CURRICULUM

Sequences and task analyses originally written for individual children were found to be effective with many children.

- Maybe some examples will help the reader see the importance of having a good curriculum. We at Teaching Research have developed a curriculum over the years that we feel meets our needs in working with the severely handicapped (Fredericks, et al., 1976).

The sequences and task analyses were originally written in the form of prescriptions for individual children. These prescriptions were generalized to others and found to be effective with many children. The curriculum with its behavioral objectives and accompanying task analy-

ses was therefore developed to save time by eliminating the necessity of teachers writing individual prescriptions for each child.

The concept of task analysis is based on the fact that for a child to learn a complex skill it is necessary to break down that complex skill into more simple skills and to teach each of them separately. The curriculum purports to have done that.

It is believed that the list of behaviors in receptive and expressive language, reading, writing, motor development, self help skills, and cognitive development are comprehensive in the sense that they begin at minimal levels in each skill area and progress to a skill level that the more able, primary level, moderately to severely handicapped child might acquire in a school setting.

The curriculum is designed to be used in a program which designates individual objectives for each child. Once the child is placed in the curriculum, it is expected (a) that the child will be moved through the various behaviors according to priorities established by the teacher and/or the parents or parent surrogates, and (b) that each child's progress through the various steps of the curriculum will be tracked in a continuous data system.

The curriculum is designed to be used in a program which designates individual objectives for each child.



The curriculum is divided into seven major areas: (a) self help skills, (b) receptive language, (c) expressive language, (d) writing, (e) reading, (f) motor, and (g) cognitive skills. Within each of those major areas, there are three possible subcomponents called skills, phases, and steps. A skill is usually a complex behavior requiring the acquisition of a number of subordinate behaviors before it is mastered. A phase is a further breakdown of that particular skill and a step is usually a minute breakdown of the phase.

Some examples will illustrate how major areas, skills, phases, and steps are organized. For example, in the major area of self help skills, one of the skills is dressing. Dressing is a complex skill including buttoning, snapping, unbuttoning, tying, and other related skills. The various phases in the skill of dressing are shown in Figure 1. The steps for Phase VII, "Put on Pants, Underpants" are shown in Figure 2.

don't forget about me!

Figure 1. The phases of the skill of dressing in the major area of self help.

SELF HELP (Major Area)		
A. DRESSING (Skill)		
Phases		
I		Remove socks
II		Remove pants, underpants
III		Remove jacket, sweater
IV		Remove T-shirt, pullover shirt, dress
V		Remove shoes
VI		Put on socks
VII		Put on pants, underpants
VIII		Put on T-shirt, pullover shirt, dress
IX		Put on jacket, sweater
X		Put on shoes
XI		Unbutton
XII		Remove button shirt, jacket
XIII		Zip and unzip
XIV		Engage zipper
XV		Button
XVI		Put on button shirt, jacket
XVII		Unsnap
XVIII		Untie shoe laces
XIX		Unbuckle
XX		Thread belt through loops
XXI		Buckle
XXII		Unfasten slide hook fastener
XXIII		Fasten slide hook fastener
XXIV		Tie shoe laces
XXV		Snap

The type of task analysis found within the curriculum will vary across skills, phases, and steps.

These examples should make it clear that the type of task analysis found within the curriculum will vary across skills, phases, and steps. However, this is natural since the type of breakdown required for learning varies just as the nature of the task varies.

The curriculum is designed for a moderately or severely handicapped child. It has been used with children of all handicapping conditions. Some handicapped children may not be so severely handicapped, and yet the curriculum can still be used with them. However, the detailed breakdown into steps may not be necessary for their instructional programs. In some cases, a breakdown of phases may not even be necessary. For example, in the dressing skill a less severely handicapped child may merely need to have someone describe to him how to put on his pants, or model for him, or guide him through the procedure a number of times. Then he may be able to do it himself. He will not need the detailed breakdown of steps.

Therefore, the teacher who uses the curriculum should always strive to have the child accomplish the terminal behavior in the skill before he starts to teach the individual phases of a skill. The teacher should always try to have the child accomplish a particular phase before breaking down that phase into steps. There is no need to move every child through the curriculum step by step and phase by phase. A child's movement through the curriculum should be dependent upon his own abilities and the rate at which he can acquire the skills.

There is no need to move every child through the curriculum step by step and phase by phase.

For some students it is necessary to break down the curriculum into additional steps (branching).

On the other end of the continuum of individual abilities of handicapped children is the child who is even more severely handicapped and who may need further breakdown of the curriculum than that provided. When that occurs, it is necessary to engage in a branching tech-

Figure 2. The steps of Phase VII, "Puts on pants, underpants," of the skill dressing in the major area of self help.

1. Child completes putting on pants when pants are pulled to thighs.
2. Child completes putting on pants when pants are pulled to knees.
3. Child completes putting on pants with both feet in and pants at ankles.
4. Child completes putting on pants when one foot is in and the other started in.
5. Child completes putting on pants when one foot is started in.
6. Child completes putting on pants when pants are placed in front of him.
7. Child unfolds pants and puts them on independently.

nique. Branching means adding additional steps or phases to one of the existing programs.

For example, the task may be to teach a child to self feed using a spoon. This is contained in the area of self help skills; the skill is feeding, and the phase is self feeding with a spoon. The existing steps are as follows:

1. Move hand to mouth from dish and then back to dish.
2. Release hand 1 inch from mouth; return spoon to dish.
3. Release hand 3 inches from mouth; return spoon to dish.
4. Release hand 5 inches from mouth; return spoon to dish.
5. Release hand 7 inches from mouth; return spoon to dish.
6. Release hand 10 inches from mouth; return spoon to dish.
7. Release hand 13 inches from mouth (add any additional steps required); return spoon to dish.
8. Release hand immediately above plate; return spoon to dish.
9. Release hand as food is scooped; and return spoon to dish.
10. Child scoops food himself and returns spoon to dish.

As the program is taught, the child moves from steps 1 through 8 with little difficulty. However, at step 9 a problem develops and the child seems unable to accomplish this step. The teacher uses the most powerful reinforcers at his disposal and the child still does not progress. The decision then is to branch the program. In this case, the teacher determines that the child needs some additional support and so writes the following branching program for step 9:

- 9a. Guide scooping hand by holding arm at wrist and release as food is scooped.
- 9b. Guide scooping hand by holding arm at lower arm and release as food is scooped.
- 9c. Guide scooping hand by holding arm at upper arm and release as food is scooped.
- 9d. Touch upper arm to cue scooping.
10. Child scoops food himself and returns spoon to dish.

Although branching programs may at times be necessary for certain children, the basic curriculum provides a sound foundation for those branching programs so that usually only a few steps need to be written and added to the existing program to modify it to provide a suitable program for a particular child. Thus, the main purpose of a curriculum—to save the teacher time and to provide a guide—is still achieved,



The basic curriculum provides a sound foundation for branching programs.

THE DATA SYSTEM

One safeguard that a good curriculum should have is a usable data system.

• One safeguard that a good curriculum should have is a usable data system. Many people have used parts of other curricula and put them in their own curriculum. Occasionally, language programs have been incorporated without the accompanying data system. This may be because no data system was suggested or it was too complex to understand or use. The results have been the lack of a usable system, except for some pre- and posttests.

Evidence of the importance of a data system can be found by watching someone run a program with a child on a particular task over several days while the student continues to fail, or watching someone repeat a program for long periods of time after the child has mastered the task. In either case that instructor is not using data to make decisions about programming for that particular child.

There needs to be a middle ground data collection systems that allows teachers to be sensitive to child performance and still have time to teach.

Most of the data systems are too cumbersome. Teachers will say, "I haven't got time to do that; I want to teach." There needs to be a middle ground on data collection systems that allows teachers to be sensitive to child performance and still have time to teach. In the Teaching Research program we stress the need to collect continuous data. We train people to take the data sheets with them on a clipboard and become comfortable with marking each trail with a simple mark for correct and incorrect responses. It is initially a cumbersome thing for teachers to learn. They do not see the merit and they are not used to it. They begin to see the merit when we teach them about updating procedures. We demand that programs be updated on a daily basis. The teacher at the end of that day should examine the child's performance and determine if the program has to be changed. Rewriting usually consists of presenting the task in a different way, giving the child feedback in a different way, or changing the task itself.

An updating procedure and some criteria for deciding when to move to the next task are extremely important.

The teachers at Teaching Research now have become very good at this because the data system is simple and the curriculum is task analyzed into steps. When a child has achieved the criterion that has been set, there is a big circle noted on the data sheet. The teacher simply indicates to move to the next step in the curriculum. By using this system with the curriculum, we can avoid having the student experience a long series of failures or stay on a task he mastered a long time ago. In one case we produce frustration; in the other, boredom.

An updating procedure and some criteria for making the decision about when to move from one task to the next are extremely important. These procedures are not an integral part of most curricula. Various curricula have sequences; when they are not used correctly, it is usually because of the absence of a usable data system.

THE DELI VERY SYSTEM

There is an individualized program written for each student even in the group setting.

D After curriculum choice the major question becomes, "Once you have a curriculum, how are you going to use it?" Concerning the concept of individualized instruction versus group instruction, we at Teaching Research distinguish between individualized instruction and individualized programming. There should be no group instruction without individualized programming. There is a reason for each student being there; there is a set of cues that the teacher is giving that particular child and a set of consequences that are being delivered for him. Cues may differ from the student next to him or they may be the same, but at least it is individualized. There is a program written for that student even in the group setting. Group instruction provides the ideal time to reinforce those things taught in the individual session. One must seriously question the merit of teaching something in the individual session



for which there is no plan to incorporate it in the group environment.

In group instruction there is another opportunity that often does not occur in individualized programing: being able to deal with behavior problems. Behavior problems sometimes seem to disappear in secluded settings with a one to one ratio. The opportunity to reach over and pinch Billy or to get hit by Billy is not there. A teacher will not find behavior programs written into curricula, but this is an important part of the daily instruction program. Therefore, we ask our teachers to write behavior programs that can be used systematically and monitored with simple data, just like a curriculum program. A classroom management system is important if a teacher is going to use any curriculum effectively.

- The role of the teacher must change to that of manager. It is difficult for some teachers to change from the traditional teacher role, where they work one on one with an individual student, to a managerial role, where they have to orchestrate the whole classroom. The teacher has to take his skills and share them with several other people.

We at Teaching Research recommend the use of paraprofessionals, a new concept for most teachers. When we initially approached teachers and asked them, "Do you want to use volunteers in your classrooms?" most of them said, "Not really," because they had had a bad experience. But paraprofessionals can be effective if the teacher plays a managerial role. He has to structure the situation so that he can have paraprofessionals running programs and monitor their performance. This means he will have little time to do instruction with students except to model for others in the classroom.

We also use an aide station in which the aide in the classroom will have 5 or 6 children at one particular time. We have individualized instruction areas where the teaching is conducted by the volunteers or the paraprofessionals. The student will work on a particular individual task and then move to the group at the aide station. The task does not end at that point. This is where the curriculum item is reinforced. We work on the generalization at this group level. We try to see that the behavior occurs across the environment, but we still use the individualized instruction period to try to get the behavior started. We then look for ways in which we can generalize the new behavior into a much more natural environment situation than the one on one.

The teacher then has to monitor his aide, see that the children are getting the correct program for the day, take data on everybody in the

In group instruction there is an opportunity to deal with behavior problems.

TEACHER AS MANAGER

It is difficult for some teachers to change from the traditional role to a managerial role.

Paraprofessionals can be effective if the teacher plays a managerial role.

In an aide station with 5 to 6 children, an aide may work on generalization of a previously learned behavior.

Aides can learn to handle much of the updating on performance data.

hey, don't forget about me!

classroom, and maintain responsibility for reviewing the data at the end of the day and updating the programs. The aides can learn to handle much of the updating. Our teaching staff now can do that updating in about one minute per program. A child may have 8 to 10 programs so that means about 10 minutes per child each day are used for updating the curriculum items to be taught the next day.

A teacher must lay out a program clearly for the aides.

The aide role is highly enhanced in this particular model of working with the curriculum in that aides become very important. They are working mainly with the group and they must keep moving from child to child. Not only are they running stimulation programs with a particular child, they are also trying to carry over the curriculum items that are being taught in the individualized instruction. They are working on cooperative behavior and at the same time behavior problems. This is all possible if the programs are laid out clearly for the aides. In this particular program there is very little "down" time. Even during such times we are looking for other things to take advantage of, e.g., on the way to the lunch room or on the way to the playground, looking for things to reinforce what has been taught in the other setting.

The paraprofessionals in our program run most of the curriculum items. They do most of the individualized instruction. It is our feeling that we can take a paraprofessional and in a relatively short period of time—one week—train him to be able to run the individualized program adequately and to collect data on its effectiveness. This is somewhat more narrow than the traditional meaning of conducting a program. The paraprofessional will have one particular student at a time, will be told what set of cues to use, what kind of feedback to use, and when. The teacher watches this carefully.

If volunteers are given a professional approach to the child and a data system to show them they are doing well, the turnover is drastically reduced.

Some people say that it is impossible to find volunteers. Nonetheless, we have been able to find volunteers in some remote places. Many times we have used students from the high school and can usually get them some high school credit for working. There are all sorts of organizations that will volunteer their time. If they are given a professional approach to the child, something to do that is specific and spelled out, and a data system to show them that they are doing well, the turnover is drastically reduced. There are more reinforcers for volunteers working with the severely handicapped than in any other volunteer program that I know of.

THE ROLE OF THE PARENT

Each parent who has a child in the program should also have a home program.

- The parent's role in this issue about curriculum and its use is vital. We at Teaching Research do not force parent involvement, but we certainly stress that each parent who has a child in the program should also have a home program that they are operating.

In the "lunch box" system, teachers and parents exchange information daily and jointly decide program changes.

We use a variety of parental involvement systems. One such system is the "lunch box" system where the progress data changes hands between the school and the parent—on a daily basis. The teacher, mother, father, and the other siblings decide to work on a particular area coordinated with a school program. They should choose a similar set of procedures to help coordinate the two activities. We require that the parents keep data on what they are doing in the home and share it with the school. If the teacher then examines those data and sees problems in it, he calls a conference to discuss modifying the program. The mother takes the data from the previous night, puts it in the child's lunch box, and sends it to school with him or pins it on his collar. The teacher then sends the day's data back to the home so that in many cases there is a daily communication system back and forth on how the child is progressing

on that particular curriculum item. Then the teacher, along with the parent, will make a decision about when to move from this program, when to branch it or go in a different direction, or whether to change the item in some way.

- Where will educators get more of the kind of curriculum materials that they need? Researchers need to develop some longitudinal studies; there are few people around the country who are, in fact, looking at infants. They need to discover behaviors and sequences that work for those particular children, because most of the existing material does not go low enough. (Most material has been generated on school age children since they are a captive group.) Another group for which there is little information is that of the teenager and young adult. As educators build materials for these individuals, they will need highly complex curricula. These students will be asked to operate in a complex world in which the social behaviors have to be examined just as systematically as a simple motor movement. Educators are going to have to look very hard at longitudinal studies with these particular groups of individuals.

Second, educators can do more by looking at horizontal studies across varying handicapping conditions. It may well be that there are some special concerns that instructors need to have relative to the physically handicapped, to the highly seizure involved student, to the autistic child, etc. Educators need more in depth studies across these conditions, looking again for curriculum items, sequences, and suggested strategies for training the particular behaviors found to be important.

Third, educators are going to have to look closer at the teaching process. They need more process information about service delivery. There are many models available, such as the one described in this chapter. Educators must look at those models for the reasons stated earlier: The best curriculum in the world will be worthless if it does not have a delivery system. Educators are going to have to specify, document, and lay out clearly how they are going to deliver the service on a particular curriculum, get the information to the child, and orchestrate the classroom in such a way that is maximally efficient.

At the present time educators have the vehicles to accomplish much of the work needed in curriculum development, designing delivery systems, and training staff. There are several federally funded demonstration centers in early childhood education and severely handicapped centers. The responsibility of these centers is to develop materials and model programs and disseminate their results through replication. If they function the way they were intended, they will be able to save the field a lot of unnecessary time spent rediscovering the wheel. I would hope that the funding agency would support a program that has chosen to replicate an existing program with already developed curricular materials and a service delivery model. This would advance the development of comprehensive models more so than requiring that each new project do something unique while tested models are not maximally used.

LOOKING TOWARD THE FUTURE

Researchers need to develop some longitudinal studies, starting with infants and continuing through young adults.

Educators need more in depth studies across various conditions, looking for curriculum items, sequences, and suggested strategies.

Educators are going to have to look closer at the teaching process.



a teacher's perspective

nancy scheuerman

Key Ideas

- *It is most important that teachers of the severely handicapped serve the role of skill assessor as well as performance and program evaluator. In addition, the teacher must take on the new role of interdisciplinary coordinator, a manager of educational services.*
- *This student population requires a teacher who has a training background in such areas as eye tracking and scanning skills, object permanence, social interaction skills, task analysis, and nonverbal communication skills.*
- *A critical factor in the training model is that teachers who will have classrooms for the severely involved child learn to integrate behavioristic theories and developmental models.*
- *The goal of independent behavior can be more readily attained by severely handicapped students when the teacher structures their school experience and encourages their home environment toward this end.*

- Within the last 5 years educational programs for students with special needs have undergone a growth process. This growth spurt has evolved into a broader scope of services to students and has also given birth to public school programs which are more inclusive in regard to the populations they serve. Due to these modifications in public school programs, more and more students who may be described as severely, profoundly, and multiply handicapped are receiving services. In many instances, these students can be described as those who are nonverbal communicators, have minimal self care skills, display limited socially adaptive behaviors, and may also have one or more predominant handicaps such as a severe motor disability, blindness, or deafness. The majority of this population also demonstrate cognitive skills which do not surpass the sensory motor stages of development. These descriptors of individual performance levels point to one basic issue: This level of student is extremely dependent upon adults in the environment. An individual who cannot communicate to others what he prefers to eat or to play with, or cannot independently grasp onto a spoon or a toy handle, is an individual dependent on others for control of his living habits and desires. Therefore, when speaking about the educational needs of the severely, profoundly, and multiply handicapped students, educators must constantly keep in mind the major objective of decreasing dependent behavior in the severely handicapped and increasing their ability to demonstrate self initiated behavior.

A PROGRAM GROWTH SPURT

The major objective is decreasing dependent behavior in the severely handicapped and increasing their ability to demonstrate self initiated behavior.

- In order to achieve this objective with all students, teachers must be prepared to outline a program which will include the development of independent self care skills, socially appropriate behaviors, communication systems and learning tasks, and experiences which will facilitate the development of early cognitive skills. It has become increasingly more important that teachers receive training in areas other than instruction of reading, math, and vocational skills. This particular student population requires a teacher who has a training background which includes programing for the development of eye tracking and scanning skills, object permanence, functional object use, play skills, social interaction skills, auxiliary communicative skills, and gross and fine motor skills.

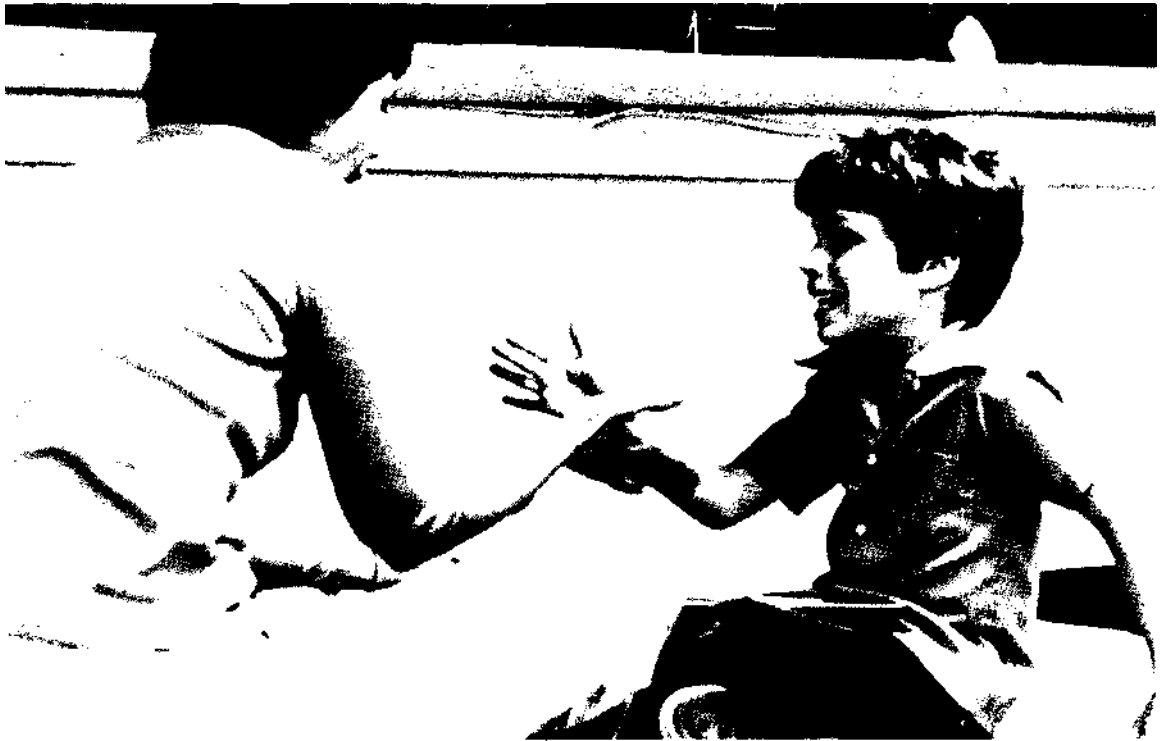
SKILLS THE TEACHER NEEDS

Skills which educators previously expected a child in school to possess are the areas which need the attention of teachers in classrooms for the severely handicapped. Toilet training replaces the reading period, or teaching a student how to suck on a straw fills the time once used for instruction on telling time. The challenge is forwarded to the teacher training institutions in the country to be alert and supply the future teachers of these children with these vital programing skills.

Skills which educators previously expected a child in school to possess are the areas which need the attention of teachers of the severely handicapped.

In order for teachers to become exceptional educational programers in the areas previously mentioned, it is also essential that teacher training models provide opportunities to examine the merits of behavioristic and developmental learning theories in program development. One of the primary requisite skills of teachers is the ability to use behavioral learning concepts well in program development and implementation. It is crucial that teachers receive the proper education in behavioral learning principles in order to systematically apply reinforcement, set up appropriate contingencies, and define performance criteria. These are fundamental skills for teachers who concern themselves with quality instruction for students who may display very small increments of improvement in their skill level or behavioral repertoires.

It is crucial that teachers receive the proper education in behavioral learning principles.



Many of the students in this population may also have multiple physical handicaps which will require special program considerations. Therefore, the teacher responsible for individual instructional program-
The teacher responsible for individual instruction must have an exceptional command of task analysis, ing must have an exceptional command of task analysis in order to properly define the desired performance level and subsequently delineate the necessary steps to attain that level of functioning. For example, a program designed to teach severely multiply handicapped students to self feed will need to be refined to delineate each skill level from swallowing, sucking, and lip closure to the ultimate skill level of using a utensil to scoop food from a plate and exhibiting a well defined motor pattern to raise the spoon and food to the mouth. As one examines the types of skills which the severely handicapped should be taught to master, it becomes evident that the teacher must be well versed in the use of task analysis for program development.

However, the abilities to apply behavioristic learning theory in the classroom and to use task analysis are not the only characteristics required of a teacher in this field. An essential ingredient of the teacher training model must be comprehensive training in developmental learning theory. Teachers have for too long been defining what they believe to be appropriate tasks for the students to accomplish and then proceeding to teach without regard to the underlying cognitive functioning involved in understanding or completing such a task. Teachers must be provided with the necessary information on sensory motor and cognitive development in order to program accurately. For example, communication skills should not be taught with the expectancy for student mastery without initially insuring that the students have had the experiences which are fundamental to the development of language concepts. Such critical factors as object awareness and object permanence must be examined while pursuing the development of language in a student.



The critical factor in any teacher training model is that teachers who will be assigned to classrooms for the severely handicapped must learn to integrate both models of learning theory—behavioristic and developmental. The field of education has too often been guilty of simulating an educational pendulum which swings back and forth between instructional models. The teacher in training needs to develop the skills which will assist in integrating the two models for the benefit of the students.

Teachers for the severely handicapped must learn to integrate both models of learning theory—behavioristic and developmental.

Another important aspect of the training model should be the development of teachers with interdisciplinary skills. According to the nature of a particular student's disability, a variety of trained personnel will be necessary components of a service delivery model. These people shall include physical and occupational therapists, speech and language therapists, as well as specialized consultants for the visually or hearing impaired child. Certainly there are people who may argue that if these additional staff members are available, the teacher will not need training in these areas.

Another important aspect of the training model should be the development of teachers with interdisciplinary skills.

However, to be realistic, the therapists on staff will not be devoting 100% of their time to any one student, and therefore, the teacher remains the principal factor in the student's educational program. In order to transfer a child from a wheelchair to a chair, to properly position the child in the chair, or to develop proper motoric eating skills, the teacher must have at least a basic knowledge of the body's physical structure. The teacher also needs additional training in techniques which may facilitate motor responses of a student who may be severely physically handicapped. Also, one must not rule out the necessity for good physical programming for the student who does not demonstrate severe physical handicaps. It is important in this student's programming that the teacher has knowledge of bone, muscle, and nerve

There exists a great necessity for extensive training in the area of speech and language development.

structure in order to encourage proper posture and physical activity which will help develop the individual into a physically healthy adult.

It should not be overlooked that there exists a great necessity for extensive training in the area of speech and language development. One of the primary determining factors for a severely handicapped student's success in independent behavior is the ability to communicate. Consequently, it is important that teachers be well versed in the normal sequence of language development, the techniques used to create an optimal language environment, and the use of auxiliary forms of communication such as sign language, gestural systems, and communication boards. Language skills are those which should occur in all settings; thus, for optimal conditions, the teacher should possess the skills to integrate language objectives throughout the school day's scheduled activities.

It should be recognized that teacher trainers should advocate for training models which include courses which familiarize the future teachers with the basic techniques and terminology used by these specialized therapists. This type of interdisciplinary training will assist the teachers in their daily interactions with students and also increase their ability to communicate with the specialized personnel on a professional basis.

The teacher must have command of developmental skill levels and the techniques necessary to accurately observe and assess the student's performance.

One of the other fundamental skills that should be required of a teacher is that of assessment and evaluation. What is the role of the teacher in this area? It has become increasingly more important that teachers serve the role of skill assessor as well as performance and program evaluator. In order to accurately assess a student's skill level, the teacher must have command of developmental skill levels and the techniques necessary to accurately observe and assess the student's performance level in relationship to these developmental stages. The next step is to develop an educational program and evaluate its efficiency and appropriateness in relationship to student performance as well as program implementation.

In order to meet evaluation needs, a teacher requires training in the various data collection systems.

In order to meet these evaluation needs, a teacher requires training in the various data collection systems—continuous data collection, stimulus-response measurement, behavioral observations, probe systems, as well as many others. The teachers must also know when to use the measurement systems and for what purposes they are to be used. Many teachers understand the necessity of evaluating a student's performance for reasons of validating progress; however, there also exists an urgent need for teachers to assess the efficacy of programs in order to validate skill sequences and program development for the severely handicapped student population. Teachers cannot afford to be isolated classroom instructors for a limited number of students, but must be trained to be program evaluators on the premise that they will validate skill sequences and share this information with other teachers who may be in need of appropriate programs for their students. Program evaluation must be a goal in providing efficient, exemplary educational services for the severely, profoundly, and multiply handicapped student.

RESOURCES THE TEACHER NEEDS

The severely handicapped population poses a unique problem of acquiring adaptive equipment and special instructional materials.

- One factor which is often overlooked is that of materials and resources available to the teacher. This particular student population poses a unique problem of acquiring adaptive equipment and special instructional materials. Children with severe physical disabilities are in need of adaptive devices which will enable them to manipulate objects and function at optimal independence from adults. For example, there

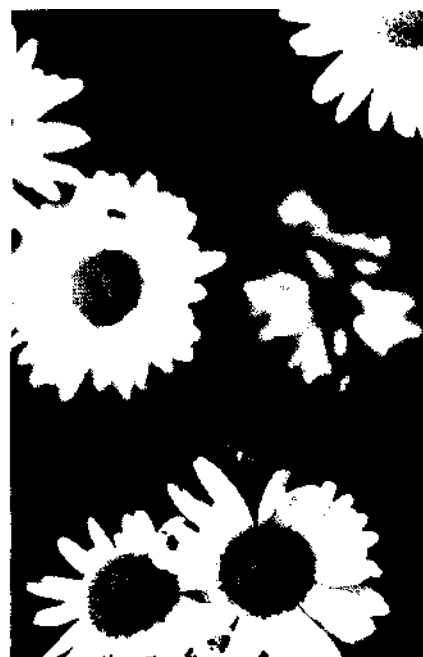
may be students who require prosthetic limbs or students with limited extremity movement who may require special adaptive equipment which can facilitate maximum movement in these limbs. Special wheel-chairs, seats, and potty chairs are essential. When commercial equipment is available, adaptations are often necessary to convert it to a workable piece of equipment for the individual student. Therefore, additional trained personnel are needed to make these assessments and adaptations related to equipment needs.

Another area which requires special equipment is that of nonverbal communication which may use some type of communication board. At the simplest form this may necessitate photographs and the construction of appropriate boards as lap trays. As teachers become more sophisticated in their use of communication vehicles, there may be an increased need for devices which are electronically controlled to allow each student the greatest degree of independence in communication. It is apparent that these equipment needs add an additional cost to the education of these students. Nevertheless, if teachers are willing to accept the challenge of providing exceptional programs for the severely, profoundly, and multiply handicapped, the rest of the education field must accept the challenge to secure adequate funds for the necessary materials and resources.

As teachers become more sophisticated in their use of communication vehicles, there may be an increased need for devices which are electronically controlled.

- Educational services for the severely handicapped opens wide the door to develop comprehensive home-school education programs. Traditionally, educational programs have been provided for students while the student is in the educational setting and the usual progress reports and parent-teacher conferences are all that have been provided to the family to inform them of their child's progress. This form of home-school communication is finally being recognized as inadequate for the family with a child with special needs. In a situation where a student, with limited communication skills, cannot relate the daily happenings in his classroom to his family, the teacher should bridge this

THE TEACHER AND THE FAMILY



hey, don't forget about me'

A truly exemplary education program is one which does not cease at the end of the school day, but instead is also appropriately carried on in the home.

communication gap. Families of these children need continual and accurate information on methods for feeding their children, how to properly position their children, what types of exercises and games they should engage in at home, and how to develop their communication skills. A truly exemplary education program is one which does not cease at the end of the school day, but instead is also appropriately carried on in the home.

Due to this extensive need for home-school communication systems, program coordinators and administrators need to encourage adoption of varied models of service delivery. There are several methods which can be used to accomplish family involvement in the educational process. The presence of parent volunteers in the classroom, frequently scheduled home visits by the teacher, or daily teacher logs sent home to the family are just a few of the devices. Whatever the system may be, there will be a need to include some amount of flexibility within the school day and the teacher's schedule. Some delivery models have allowed the teacher time off to accomplish these tasks effectively; however, this is not always a feasible option. There is a definite need for new approaches to be tried. It may well be that one of the more efficient models would be to provide half day school programs. The other half days would then be used for home-school communication and education. Another effective model is to use an additional staff member as a home-school liaison who can familiarize the parents with the school program and also familiarize the teachers with the home environment.

The field must look to the future and begin to train personnel specifically to deal with families.

There are many families who need additional services, specific training in the care of a physically handicapped child, management skills, understanding of cognitive growth, and ways to enhance their child's social and emotional development. Others may have specific needs such as learning how to teach their child to undress or how to encourage brothers and sisters to play with the handicapped child. Obviously, the families have a variety of needs and the teacher may not be the person to deal with each of these in the proper manner. The field must look to the future and begin to train personnel specifically to deal with families and make these services available to the teacher.

ADDITIONAL PERSONNEL NEEDS

The needs of the severely handicapped demand that physical and occupational therapists and speech and language therapists be full time staff members.

- One of the most serious considerations in regard to service delivery is the quantity and variety of personnel necessary to provide the optimal program for these students. Administration government and communities must be aware of and accept the fact that these educational services will differ greatly from the services traditionally allocated to regular or special education classes. The needs of these students demand that physical and occupational therapists and speech and language therapists be full time staff members to adequately meet these needs. In terms of personnel quantity, situations where therapists are requested to carry case loads of 40 or more students should not be tolerated as acceptable appropriations of service. Quick scrutiny of a 40 student caseload results in a therapist giving a maximum of one hour of service per week for each student. In terms of the tremendous needs of these students, one hour is quickly diminished and the results are inadequate support services. Consequently, administrators of special education services must be willing to defend these personnel positions as viable factors in the educational process. Those people who are in control of funds, whether it be the public or private sector, must also be willing to accept this fiscal request.

Another essential component which has been overlooked in public school programs is the medical personnel necessary to meet these students' needs. It is crucial that appropriately trained nurses and doctors be available as consultants concerning the use of medication, obesity problems, nutrition, and other factors which are critical to the proper growth and development of these students.

It is crucial that appropriately trained nurses and doctors be available.

One may ask, how can educators justify these additional staff members for severely handicapped students? However, one only needs to examine the changes in regular education to recognize that the public has accepted the increased use of special instructors. For example, it is common in many public schools to find reading and math resource teachers, foreign language instructors, human relations instructors, and other consultative personnel. The children we intend to educate may not require the expertise of a reading consultant; nevertheless, they do require the special services of a therapist, whether it be to learn how to walk or to communicate.

• Another critical question is, with a teacher, therapists, and assorted other personnel, how is a coordinated education program achieved? This question is of extreme concern to most teachers. A typical classroom teacher has little, if any, noninstructional time during the school day. Thus it is becoming a vital concern that teachers are provided adequate time to meet with the various staff members. Administrators and program coordinators are in a position to help teachers by allocating adequate noninstructional time for the purpose of interdisciplinary coordination. Meeting and program development time should be appropriated within the school day and cannot be expected to be achieved on the part of the teacher after a full day of direct service.

COORDINATING IT ALL

It is becoming a vital concern that teachers are provided adequate time to meet with the various staff members.

An alternative approach may be used to alleviate some of the problems of interdisciplinary coordination—involvement of all disciplines at the inception of an educational program. For example, when developing a play skills program, each discipline should be active in the delineation of objectives, goals, teaching procedures, and evaluation methods. This approach guarantees knowledge of a program's components by all staff and thus increases the probability of developing skills which have a broader base and are more likely to be used by the student in his daily life than developing "splinter" skills, which could result from noncoordinated efforts. Again, when one accepts this service delivery model, the administrative staff must be willing to secure this time for program coordination.

An alternative approach may be to involve all disciplines at the inception of an educational program

Whichever approach is used, it is inevitable that the future teacher will have a multifaceted role. With the skills a teacher is trained in, that teacher may become an educational programmer, developing both individual and group programs in many areas. In addition, the teacher becomes an assessor and evaluator of both student progress and program efficacy. Assuming this role, the teacher should continually strive to create, adapt, and provide the best possible program for each student as well as disseminate useful skill sequences and information to others in the field.

The role of interdisciplinary coordinator is a new one for a teacher. Some people may question this use of a teacher when, in theory, a program could be provided by having each discipline provide programs for a certain portion of a student's day. However, this might eventually lead to a tragic situation: the elimination of a stabilizer and coordinator of services. The teacher must assume the responsibility of insuring

The teacher must assume the responsibility of insuring that interdisciplinary program continuity is achieved.

that interdisciplinary program continuity is achieved, and the teacher has the challenging task of integrating language, motor, and cognitive skills into a viable and useful set of independent behaviors. The teacher must have as a goal to provide programs which are based on the specialized training of each of the staff members.

THE TOTAL CURRICULUM

The final goal of this curriculum should be the achievement of independent skill levels for each individual student.

Within each program area, the first step is to assess each student's capabilities; the second is to formulate program objectives.



Self care skills should occur in the most functional setting to insure generalization of the skills learned.

- The programs to be provided by the teachers and support personnel should comprise a total curriculum for the severely, profoundly, and multiply handicapped students in the classroom. The final goal of this curriculum should be the achievement of independent skill levels for each individual student. Within the time span of a single school day, it is important to provide experiences and training in several instructional areas, including self care, developmentally appropriate cognitive skills, socialization, language development, and motor development.

Within each program area, the first step is to assess each student's capabilities; the second is to formulate program objectives which meet the abilities and needs of the student in each area. Self care programming, by necessity, should include self feeding, toileting, undressing, dressing, toothbrushing, and other appropriate hygiene activities. As an example of curriculum planning, it is suggested that a mealtime skills program must provide daily instruction in lip closure, swallowing patterns, scooping with a spoon, or spearing with a fork. Another area of concern is providing adaptive mealtime utensils when necessary. A suction disc may be placed under a plate to help stabilization; an extension may be added to the spoon handle to facilitate proper grasping and releasing; or a plate with a raised rim may be used to develop scooping skills. During the mealtime program, the physical therapist can skillfully recommend sitting positions which are optimal for the development of independent feeders. The occupational therapist is instrumental in programming for proper scooping patterns, grasp and release of utensils, oral functioning during eating, and adaptation of utensils. A language therapist can provide input to appropriate objectives dealing with language development in the mealtime setting. The teacher is critical in recognizing needs for socialization with adults and peers in the mealtime setting, as well as determining appropriate instructional techniques for each of the objectives. Thus, the staff has established an integrated program to develop independent eating skills.

When a teacher determines the individual objectives for each of the self care program areas, he should also consider when is the appropriate time during the school day. Self care skills should occur in the most functional setting to insure generalization of the skills learned. For example, dressing and undressing should be taught during bathroom times, upon entering or leaving the school building, or before and after a swim session. Face washing and cleanliness skills can be taught before and after mealtime, after toileting, or after recess. Mealtime skills should primarily be instructed during lunch or snack times.

Some of the motor components of these skills need more training than can be provided in the functional setting. To alleviate this problem, the motor components can receive further instruction within another activity. The motor skill of spearing can be integrated into an art class where students use forks to spear small pieces of foam. Dressing skills may be integrated into play skills where students attempt to remove rings from their arms or lift hula hoops up over their legs and hips. Thus, components of self care skills can be taught in other settings and activities and reinforced in the functional setting.

Motor development must be an integral part of the school day. For those students who do not possess adequate trunk control or head control, the physical therapist must be a primary factor. The therapist can help plan positioning strategies which can occur throughout the day. A student may be positioned prone over a round bolster to facilitate head and trunk control while the teacher positions herself in front of the student to work on the student's visual tracking skills. A student who is just beginning to stand needs time on his feet to strengthen leg muscles; however, this objective can be achieved during another activity. The teacher instructs the student on functional object use while he stands at a table rather than seated in a chair.

Motor development must be an integral part of the school day.

Another important step in promoting independence for physically handicapped students is to increase mobility. Teachers can examine transition periods between activities and use this time for mobility instruction. Individual objectives may be determined so that some students may independently roll to the next activity area; others may use scooter boards to propel themselves; and still others are taught how to use furniture as supports for walking.

Teachers can examine transition periods between activities and use this time for mobility instruction.

Fine motor skills must also be integrated in all school and home activities. A student lacking in more advanced grasping and releasing patterns can be instructed in these skills at the same time he is learning functional object use or play skills. Grasping and releasing objects into a container, pouring them out, and repeating the activity can prove to be as entertaining as it is instructional. A student who requires training in wrist rotation can receive the instruction in several areas: scooping with a spoon, removing lids from containers which contain hidden objects (object permanence), or turning keys to open doors (means-ends). Thus fine motor skills and cognitive skills can easily be integrated into one instructional activity.

Fine motor skills and cognitive skills can easily be integrated into one instructional activity.

The language and socialization skills must be considered in every area of instruction. Manipulating the environment and controlling the available materials can be critical factors which encourage the student to use language to gain things in his environment. Utilizing communication boards, gestural communication, or verbal language in all settings increases the probability of developing language skills.

Manipulating the environment and controlling the available materials can be critical factors which encourage the student to use language to gain things in his environment.

Arranging students so that they may interact with each other during teaching sessions is a commonly disregarded factor. Students should be allowed to touch each other to acquire awareness of others—to shake hands, rub lotion on each others' hands, pass toys to each other, or ride in the same wagon. Since many of the students need individual attention of instruction, socialization with peers is often overlooked. Teachers must make a programmatic effort to develop the appropriate social skills.

The teacher needs to insure that all programs are sequenced appropriately, developmentally sound, and individually developed. It is also essential that the primary goal of the day's activities be the attainment of independent skill development. Generalization is a critical factor with all students, and thus the teacher must plan for the instruction of skills in a variety of settings, with different materials, and with several instructors. These elements of instructional programming aid in the development of skills which will be initiated by the students in functional situations. Above all, the skilled teacher who integrates program areas can make maximum use of the school day to the benefit of each student.

Generalization is a critical factor with all students, and thus the teacher must plan for the instruction of skills in a variety of settings, with different materials, and with several instructors.

educational synthesizer

diane bricker



Key Ideas

- *Multiple impairments of the severely handicapped necessitate a new breed of teacher, a synthesizer, who can gather information from a variety of specialists and incorporate it into effective intervention strategies.*
- *For teachers to be able to function as synthesizers, their training programs must include more involvement in practicum activities with children and more exposure to the basic principles of communication, medicine, nutrition, occupational and physical therapy, counseling and guidance.*
- *With the teacher becoming a synthesizer who generates, coordinates, implements, and evaluates, the specialist becomes a consultant to the teacher in a particular area of expertise.*
- *For productive interaction to occur between teacher and specialist, both must be willing to pinpoint essential information and communicate it in a way that serves the purpose of intervention.*



- The legal battles for the inclusion of severely, profoundly, and multiply handicapped children within the public schools have been won (Cohen & DeYoung, 1973), and now the responsibility for developing sound educational programs falls primarily to those in special education. The successful maintenance of significantly impaired children within the community will be largely determined by special educators' ability to implement public school programs that can produce objective and reliable changes in this population. The awesome task of developing effective educational programs for the severely handicapped child requires thought, analysis, and sensitive implementation. Such analysis is undoubtedly partially responsible for the growing concern that current personnel preparation programs are not training teachers who can cope successfully with this most difficult to educate population (Davis, 1973). As Skinner (1968) pointed out, "good" teachers as well as "good" students do not occur without thoughtful consideration of relevant factors:

No enterprise can improve itself to the fullest extent without examining its basic processes. A really effective educational system cannot be set up until we understand the processes of learning and teaching. Human behavior is far too complex to be left to casual experience, or even to organized experience in the restricted environment of the classroom. Teachers need help. In particular they need the kind of help offered by a scientific analysis of behavior, (p. 95)

Although these statements by Skinner were directed primarily toward the training of teachers who work within regular classrooms, their appropriateness seems magnified when applied to the teacher of the significantly impaired child whose instructional input probably demands more careful analysis, programing, and management.

- If the abundant literature on teacher training is an indicator, a significant time investment seems to have been made toward the development of personnel preparation programs that are attempting to develop effective teachers. A perusal of this abundant literature as it pertains to special education offers some indications about general trends and the evolution towards preparing teachers to work with the more severely impaired child.

First, a variety of approaches to teacher training exist in the literature (Dunn, 1973), and many of these approaches appear to be directly tied to a specific service delivery model, such as the clinical teaching model proposed by Schwartz (1971) or the consulting teaching model developed in Vermont (McKenzie, 1972).

Second, there appears to be a general movement toward the support of competency based programs in special education; however, as Shores, Cegelka, and Nelson (1973) have pointed out, "An empirical base for special education teacher competency statements is conspicuous by its absence" (p. 196). Much of what is termed competency based education is, in fact, opinion based education. Skills thought to be necessary for classroom instruction seemed to have been determined largely by expert opinion rather than by careful analysis of teacher behavior in relation to child progress.

Another significant trend to be noted is the recent recognition that training teachers of the significantly impaired individual will require important modifications (Sailor, Guess, & Lavis, 1975). These modifica-

THE CHALLENGE TO PROVIDE SOUND PROGRAMS

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TRAINING TRENDS

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tions include a greater involvement in practicum activities and exposure to a variety of material and information not previously included in the educator's domain (Haring & Bricker, in press). The pioneer article by Sontag, Burke, and York (1973) made one of the initial pleas for expanding the role of a teacher working with severely handicapped children. They indicated:

If students are nonimitative, nonverbal, and/or do not attend or respond to social stimuli, then the teacher must be able to teach the students to speak, imitate, and/or to relate to social stimuli.

Concomitantly, the teachers must be able to do away with self mutilating behavior, stereopathics, temper tantrums, and various escape and avoidance behaviors. In addition, the teachers must be able to teach the students to play with and acquire information from materials, self feed, self dress, ambulate, write, read, compute, etc. Finally, it is the teacher who will be the major source of practical information for the parents of the students in her charge. Thus, the teacher must be able to function as an effective parent trainer, (p. 23)

If the teacher of the severely impaired child must perform multiple roles or, said another way, arrange all available environmental events to encourage a range of adaptive responses and to extinguish or reduce nonfunctional behavior, then it would seem appropriate to consider the need for multiple inputs from a variety of resources. Unfortunately, the major part of the information offered by or gleaned from disciplines apart from education have been largely restricted to diagnostic procedures and infrequent consultations from "experts." Many special educators believe that teachers of the severely handicapped need a conceptual grasp of the basic principles underlying such relevant disciplines as communication, medicine, occupational and physical therapy, and nutrition. Further, the teacher must be able to relate this information in practical ways to use with the severely handicapped.

Teachers of the severely and profoundly handicapped need a conceptual grasp of the basic principles underlying communication, medicine, occupational and physical therapy, and nutrition.

AN EMPHASIS ON THE TEACHER'S ROLE

- The acceptance of the intervention model for the severely handicapped proposed by Sontag, Burke, and York mandates change in the instructional content and approach found in most school settings. Given that change is necessary, why should the major share of the responsibility for change fall to the teacher? Why should only the teacher of the severely handicapped be required to shift from a traditional pedagogical role to one that will require the acquisition of many new skills? Why not include, for example, the language specialist, the physical therapist, or the nutritionist as an integral part of an education program?

One must question the traditional method of using a specialist with the severely handicapped child from the standpoint of economics.

Little doubt exists that the inclusion of specialists from relevant disciplines should be a goal; however, the manner of inclusion or the role played by such specialists needs to be considered. At the very least, one must question the traditional method of using a specialist with the severely handicapped child from the standpoint of economics. Most school systems will not be able to support the cadre of full time speech pathologists, nutritionists, physical therapists, occupational therapists, and nurse practitioners necessary for the direct delivery of appropriate services to each child enrolled in every class. The lack of full time specialists prevents them from providing adequate one to one implementation of specific programs for every severely handicapped child

who has a problem that demands a special resource. The best that has been done in most intervention programs is to remove the child for a half hour of therapy once or twice a week.

This traditional model of removal for an hour of therapy per week will not result in success with the target population of severely impaired children. Rather than use this model, we believe that those individuals (e.g., teachers and parents) who have repeated or continuous contact with the child should be trained to deliver the necessary special services (D. Bricker, W. Bricker, Iacono, & Dennison, in press). In such an approach, the specialist operates in a consulting capacity similar to the consulting teacher model described by McKenzie (1972). For this approach to function, both the specialist and the teacher must be willing to modify their roles. For example, rather than providing a child with a brief period of therapy each week, the physical therapist trains the teacher how to lift, carry, position, and exercise the child. In this way, the child receives the benefit of daily appropriate positioning and exercising, which should enhance the acquisition of motoric functioning and control.

The primary thesis of this chapter is that teachers of the severely handicapped child must be trained to function in an expanded capacity, which entails the synthesis of materials from many sources. How does a teacher acquire such inputs from other disciplines? In what form are these data most useful? In what setting does he or she learn to use such information? This chapter focuses on these issues and emphasizes ways to develop strategies for training teachers to become "educational synthesizers."

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Teachers must be trained to function in an expanded capacity, which entails the synthesis of materials from many sources.



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THE EDUCATIONAL SYNTHESIZER

Education includes training in any domain that produces more adaptive and/or independent behavior.

A synthesizer is one who can draw relevant information from a variety of sources and then incorporate it into daily intervention procedures.

The educational synthesizer becomes the pivotal force in the overall educational program.

PRODUCTIVE INTERACTION: THE TEACHER AND THE SPECIALIST

Conveying useful information is not solely the responsibility of the specialist; the teacher also must consider the development of a functional relationship his/her responsibility as well.

- Before beginning a discussion on how to train an educational synthesizer it seems appropriate to define *education* and *synthesizer* as used here, as well as explain what is meant by the combination of those terms. For our purposes, *education* includes training in any domain that produces more adaptive and/or independent behavior; a *synthesizer* is one who can draw relevant information from a variety of sources and then incorporate it into daily intervention procedures for children. Consequently, an educational synthesizer is any interventionist who:

1. Seeks appropriate information or techniques from professionals in other disciplines.
2. Applies such information or techniques to develop effective intervention strategies.
3. Implements such strategies in order to remediate problems (e.g., insuring special diets for children with allergies, monitoring seizure activity) or to facilitate the acquisition of new skills (e.g., implementing muscle relaxing activities or special language training procedures).

The educational synthesizer needs skills in acquiring, organizing, evaluating, and implementing (in a practical sense) inputs from disciplines that either are not or cannot be included as daily, integral parts of an intervention program. The educational synthesizer becomes the pivotal force in the overall educational program by seeking and coordinating the necessary resources to produce growth and change in the severely impaired child.

- The teacher of the severely handicapped needs to possess a variety of skills (see Chapter 6 by Scheuerman) in order to fill several distinct roles as evaluator, generator, trainer, organizer, and synthesizer. Personnel preparation programs need to consider these various roles with their subsumed skills and to organize their instructional approach around the development of such behavior in their trainees. The training procedures discussed in this chapter have been limited to those skills involved in becoming a synthesizer; however, this particular skill area or role is *only* one of many needed by the teacher of the severely handicapped child.

The development of an educational synthesizer requires two basic facts. First, the teacher or trainee must be helped to gain those skills necessary for the successful synthesis of material from other disciplines. Second, for successful implementation, the specialist's role in relation to severely handicapped children must be reshaped. That is, the specialist needs to develop skills that will allow productive interaction with teachers and parents. The teacher must be willing to seek or encourage inputs from disciplines outside education; the specialist must be willing to provide relevant information.

Not only is it important to elicit and give information, but the form and content of such material becomes critical. For example, the physical therapist who tells the teacher to exercise the child's deep tendon reflexes four times daily may be of little assistance unless the teacher knows what deep tendon reflexes are and how to exercise them. Conveying useful information is not solely the responsibility of the specialist. The teacher also must consider that the development of a functional relationship is his/her responsibility as well.

Several underlying principles, or general strategies, are necessary for developing a productive interaction between the teacher and the spe-



cialist. These include attitude, accessibility, communication, and transmittal of selected information.

It would seem appropriate to note that any ongoing functional interaction is probably dependent upon both parties being willing to interact. We are referring to a positive attitude in terms of seeking and sharing information. The teacher's attempt to acquire relevant information will be nonproductive if the specialist is not supportive of such a model. The specialist must be willing to explain, share, and assist in the implementation. That willingness is probably predicated on the specialist's belief that the teacher is capable of using specific inputs properly and that having the teacher function in such a role is an efficient, effective approach to intervention. Without such an attitude toward the teacher, the specialist may be reluctant or even unwilling to share information. Equally vital is the teacher's attitude toward the inclusion of other disciplines in educational intervention strategies. A recognition of the need for inputs from other sources surely must be present before one is willing to seek such information.

Both parties must have a positive attitude in terms of seeking and sharing information.

A second underlying principle to the successful implementation of a productive interaction is accessibility. A teacher cannot become a synthesizer if there is no external resource providing information. Ideally, the teacher should have regular contact with a nutritionist, physical therapist, occupational therapist, communication specialist, and medical personnel. The teacher, of course, should be readily accessible to the specialist. In some settings, accessibility to specialists may be limited and the teacher may have to rely on secondary sources (e.g., books) or infrequent visits from consultants. Although less ideal, the teacher must be helped to manage with infrequent contact or

Teacher and specialist must be accessible to one another.

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secondary sources until a more satisfactory arrangement can be established. Existing in close proximity does not automatically result in productive interactions but such working conditions at least encourage exchanges between the teacher and the specialists.

Specialists must work for a reduction in nonessential jargon, and teachers must be willing to ask for explanations of unfamiliar language.

A third principle that may facilitate a productive interaction is the attempt to enhance communication by reducing professional jargon. It is common to experience lectures in which the speaker from another discipline fails to properly explain his/her terms and leaves one wondering what was said. Not only must specialists work for a reduction in nonessential jargon, but teacher training programs must also develop in the teacher the willingness to ask for explanations of unfamiliar language. In describing a child, the speech pathologist can say he has difficulty coordinating his tongue, lips, and mouth movements rather than saying the child is dysarthric. Concurrently, the educator should feel some obligation to increase his vocabulary as well as his understanding of other fields. A solution to communication problems can be developed by moving toward behavioral descriptions and away from labels which tend toward the inappropriate grouping of behavior.

Specialists and teachers have spent many years acquiring a quantity of information; consequently, selection of information to be exchanged becomes important.

A final strategy that may prove important in developing a functional interaction between the teacher and the specialist could be called selective transfer of information. Specialists and teachers have spent many years acquiring a quantity of information pertinent to their particular area of expertise. If each specialist tried to convey all the information he had gained during his professional life, the results would probably not serve anyone's need; consequently, selection of information to be exchanged becomes important. The teacher must learn to pinpoint the bits of behavior relevant to each specialist and not convey extraneous material that has the potential of interfering with efficient decision making and program implementation. Equally necessary is the specialist's ability to select those relevant pieces of information that will facilitate the development of appropriate intervention rather than muddle the process. In planning a special diet for an allergic child, it may not be essential that the teacher understand the body's reaction to certain substances. It may only be essential that the teacher become aware (a) that the child should ingest no food substance containing citric acid and (b) which foods contain this substance.

The purpose of the previous discussion was to establish a general framework for a profitable interaction between the teacher and the specialist. The next step is to outline the specific skills that teachers or teacher trainees need to acquire to become educational synthesizers. Unfortunately, little data are available to provide empirical selection of which skills are necessary; consequently, teacher trainers are forced to rely on educated guesses and must leave empirical validation to the future..

TRAINING THE EDUCATIONAL SYNTHESIZER

- Establishing the basis for a productive interaction between the teacher and the specialist is vital; however, this serves primarily as a framework in which the teacher must execute a set of specific skills if information is to be acquired and synthesized into productive intervention procedures for severely impaired children. These skills or training domains can be conveniently divided into four areas:

1. Determination of a child's specific needs or problems.
2. Appropriate questioning to acquire essential information.

3. Transformation of relevant information into practical intervention procedures.
4. Evaluation of the effectiveness of the specific intervention.

As mentioned earlier in this chapter, some educators believe that training programs for teachers of the severely handicapped child need to emphasize more practicum participation. Each of the skill areas listed here can be more effectively acquired by actual exposure to the target population rather than by confining the discussion of such problems to a didactic setting. This is not to say that information cannot or should not be offered in traditional classroom situations. Rather, it is to emphasize that strictly verbal exchanges will probably not equip the future teacher with all the skills necessary to be a synthesizer.

Strictly verbal exchanges will probably not equip the future teacher with all the skills necessary to be a synthesizer.

Such a firm commitment to practicum based education may require careful selection of training sites for teachers of the severely handicapped child. The most effective training may occur in settings that can meet the following criteria:

1. An ongoing intervention program in which students can participate on a full time practicum basis.
2. Representatives from a number of relevant disciplines who have demonstrated an interest in severely handicapped children.
3. Faculty and/or trainers that are enthusiastic about operating within an applied setting.

Participation in an ongoing intervention program permits the trainee daily confrontation with the problems of working with severely impaired children, observation of trained teachers devising solutions to these problems, and finally, the opportunity to cope with such problems under supervision before "going it alone." The key to successful training is the content of the instruction offered during the practicum placement. The evolution of a synthesizer is probably encouraged the most by exposure to professionals who represent disciplines that have relevant information and activities for improving programs for the severely handicapped child and exposure to teachers who actively seek and implement such information.

The key to successful training is the content of the instruction offered during the practicum placement.

The determination of a child's problem is a requisite skill for the educational synthesizer as well as for the teacher in general. Without detecting the nature of a problem, it is difficult to seek the appropriate assistance. If the child has a respiratory problem, it makes little sense to ask for the assistance of a communication specialist or nutritionist rather than a physician or nurse. The teacher must not only detect a problem, but must also be able to seek the assistance of the appropriate specialist. However, this is not to say that children may not have problems that will require input from a variety of disciplines. To arrive at a suitable solution for a child with chronic constipation may require information from a medical source as well as a nutritionist.

The determination of a child's problem is a requisite skill for the educational synthesizer.

Determination of problems or needs can be accomplished if the teacher observes the child's behavior and then generates a subjective-objective problem list. A problem list might contain such items as "the child appears to be spastic" and/or "the child spits up food following meals." Both of these problems have the potential of interfering with the child's educational progress and therefore should lead the teacher to, at least, hypothesize that the spasticity may be severe enough to

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restrict the child's voluntary movements while the regurgitation of food might be sufficient to produce nutritional deficits or low energy levels.

The next step is for the teacher to gather some objective evidence to either support or refute the hypothesis. For example, records should be kept on both how often and how much the child spits up. The problem of suspected spasticity necessitates the evaluation of the child's ability to move his legs, arms, and trunk. Based on the objective information acquired, the teacher is ready to make one of three possible decisions:

1. More information is needed.
2. The problem does not appear to require the attention of a specialist at this time.
3. The problem calls for the attention of a specific specialist.

Training teachers to follow such a procedure should assist them in contacting only the necessary and appropriate specialist, which should, in turn, result in more efficient use of program resources. Training teachers or potential teachers to determine problems objectively is probably most appropriately done with real children in real situations. Actual practice in using such a system should improve the probabilities of implementation once the teacher trainee is established as an independent professional.

The teacher or trainee should generate a series of potential questions to ask the specialist. After objectively determining the problem, the teacher should generate a series of potential questions to ask the specialist. Next, the teacher should try to determine which of these questions will elicit the necessary information from a specialist. This process may also assist the teacher in assembling information that might be potentially useful to the specialist. If the teacher's objective information suggested the child's leg movements are severely impaired and a physical therapist were to be consulted, some possible questions might be:

1. Will the lack of movement in the child's legs interfere with the development of some important skills (e.g., walking)?
2. Does the child need a special program to increase the movement in his legs?
3. If so, what are the specific activities and how should these activities be executed, by whom, and how frequently?
4. What are some mechanisms for evaluating an increase in leg movement?
5. Should one be alert to any precautions or danger signals?

Once the questions to be asked have been selected, the teacher should persist until the specialist has provided functional answers.

Having the information is of little value if the teacher cannot synthesize the knowledge into an appropriate intervention procedure. The next training area for an educational synthesizer focuses on the use of the information acquired by asking questions. Having the information is of little value for a child and his family if the teacher cannot synthesize the knowledge into an appropriate intervention procedure. Consequently, if the physical therapist agrees that the child should be receiving regular therapy to increase leg movements, a

The selection of the appropriate intervention belongs to the therapist, but the actual implementation should reside with the teacher. program must be developed and implemented to reach that target. Clearly, the responsibility of selecting the appropriate intervention belongs to the therapist, but the actual implementation plan should reside with the teacher. The therapist may recommend that the child receive passive leg exercise at least 20 minutes daily. After assuring that

the teacher can execute the exercise properly and is aware of the necessary precautions, the therapist's basic responsibility will be to monitor the teacher's activities and the child's progress.

It is the teacher's responsibility to synthesize the prescribed exercises into the child's daily classroom program. For example, the teacher may decide to divide the leg movement activities into four 5 minute segments rather than one 20 minute block. The teacher may find the child more cooperative when placed on a water bed or in another particular part of the classroom. Hopefully, the goal of combining other educational activities with the leg exercises will be established. For instance, babbling could be stimulated during leg exercises since the child's and teacher's faces would be in close proximity.

Evaluation strategies are the final set of skills to be acquired in becoming a synthesizer. Even the most expert consultant can make a mistake about a remediating procedure, and consequently, the ability to monitor the effects of a special procedure on the elimination of the child's problem or the building of a new skill is essential. *Since the most expert consultant can make a mistake, the ability to monitor the effects of a special procedure is essential.*

Generally, evaluation procedures will have to be tailored to the specific intervention strategy. Using the example of the child whose legs have restricted movement, the teacher could note several responses that can be subsequently used to monitor progress, for instance, the position of the legs when the child is placed on his back or stomach. A possible mechanism for gauging progress might be to count the number of flexion movements during a minute. Probably the more resistance the leg offers the fewer flexions per minute if the teacher works at a steady rate. Comparison of such behavior prior to and after intervention should provide some basic information for evaluating the child's progress and therefore the success of the intervention. The teacher may find that the leg exercises have produced no observable change in the child's leg movements over a specified time period. This information should result in a further interaction between the physical therapist and the teacher to evolve a modified or different intervention strategy. Again it would seem that the acquisition of such skills can be developed more effectively by the teacher trainee in a practicum setting where problems are real and solutions are more than paper and pencil exercises.

- In the previous section, the process skills of an educational synthesizer were discussed, and these included the ability to pinpoint a child's specific needs, generate questions to elicit appropriate information, implement programs based on such information, and finally, evaluate the effect of special procedures on the child's progress in relevant behavioral domains. *RESOURCES FOR THE SYNTHESIZER*

The purpose of this section is to outline the resources or disciplines to which these processes may be applicable. Our experience suggests that when developing programs for severely impaired children, the expertise of a variety of disciplines will be needed from time to time. *The expertise of a variety of disciplines will be needed from time to time.* Some of the major disciplines from which information is often sought are medicine, physical and occupational therapy, counseling and guidance, nutrition, and communication. Further experience and data may suggest the addition of other such specialized fields as biomedicine or engineering.

The synthesizer will need specific types of information from each of the noted disciplines; however, this information can generally be divided into three areas:

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1. Possible community resources for the retrieval of necessary information if a program consultant is not directly available.
2. The body of information to be acquired and procedures for the implementation of special programs.
3. Problems that might be encountered, as well as remedies and precautions.

Those familiar with the population of severely impaired children will not question the frequent need or importance of medical intervention. Many of the 43 severely handicapped children enrolled in the Mailman Center program have chronic health problems, and the rate of acute illness is also high. For example, our 43 children missed an average of 4 days of class per month because of illness. An added concern is the number of children who receive medication for seizure activity and other disorders. For such a combination of problems, consistent access to medical personnel seems warranted; however, for those in programs that lack such a resource, other options exist. Most cities or towns have health clinics, medical agencies, or hospitals that will provide services when requested. With diligent searching, the teacher may often locate a sympathetic physician who can be a valuable resource.

Once a medical information source is pinpointed, what type of information should be sought by the teacher? The situation will vary from case to case. However, some general information needs may be appropriate to most classroom settings. For example, most teachers need to know strategies for employing emergency procedures, for discerning behavioral correlates of common diseases, for noting drug effects, and for analyzing physical changes that would indicate the need for medical intervention (e.g., increase in seizure activity, consistent weight loss). Also important is the need to develop a measurement system for monitoring physical growth and health problems in this population. Once the teacher becomes alert to indications of disease or the development of abnormal conditions, intervention strategies must be employed when possible. These intervention strategies may range from advising the parent to seek medical advice to using cardio-pulmonary-resuscitation procedures in the classroom.

Most severely impaired children have motoric disabilities sufficient to warrant attention from a physical or occupational therapist. Approximately 85% of the severely impaired children in our program have motoric disabilities sufficient to warrant attention from a physical or occupational therapist. If a program does not have a physical therapist, contacting local hospitals or rehabilitation centers may uncover a therapist with appropriate training who would be willing to serve in a consultative capacity. Information to be obtained from such a resource focuses on knowledge of normal growth and development, remediation of abnormal development, underlying principles of movement, and familiarity with adaptive equipment. An understanding of this information is probably important if the teacher is to execute the prescribed exercises properly.

Along with ascertaining from the therapist how to properly position, move, and exercise the child, there are a variety of precautions which must be employed by the teacher. The teacher must be alert to the potential damage that can be caused by improper positioning or movement of muscle systems. Although a teacher can acquire much useful information from lectures and books, it seems vital to have a therapist available to help devise and supervise the implementation of individual treatment plans.



Because of the physical problems and disabilities of severely impaired children, nutritional difficulties are prone to develop. Few programs are fortunate enough to have a full time dietitian available as a resource; however, with a little investigative effort, the teacher may be able to locate a hospital or school dietitian who could offer assistance. The type of information to be sought from such a specialist would be (a) principles of nutrition, (b) measurement systems, and (c) modifications of standard procedures to meet special needs. For instance, how does the parent and/or the teacher provide the child with a balanced diet when the child has allergies which preclude the ingestion of wheat? Although the teacher can acquire general useful information, many problems presented by the children in his/her classroom will mandate the generation of individualized strategies which may necessitate input from an expert.

Because of the physical problems of severely impaired children, nutritional difficulties are prone to develop.

Of the 43 severely handicapped children enrolled in the Mailman Center programs, none has more than rudimentary language skills. The majority have no language skills at all. Generally, teachers have not been trained to work with a nonverbal population, and even those who have may benefit from input from a communication specialist. Again, it is important for the teacher to seek out such expertise if it is not consistently available to the program.

Generally, teachers have not been trained to work with a nonverbal population such as the severely impaired, and even those who have may benefit from input from a communication specialist.

A form of assistance that may be required first is a reasonable estimate of the child's auditory capacity. The communication specialist may have to work with the teacher to devise a plan for a hearing assessment in an informal setting (which does not mean that the data need to be informal). Further, the teacher may need assistance in deciding upon an approach to language training. Given minimal progress, how long should the teacher persist in using a verbal format before shifting to another communication form?

The communication specialist should be familiar with a variety of approaches and can assist the teacher in matching children with effective procedures. The specialist can provide the relevant informa-

, don't forget about me!

The parent has a vital role to play, and the success of the program may be a function of parental involvement.

The teacher may need to draw on other professionals to do an appropriate job with parents.

tion, but it is the teacher who must synthesize that information into daily intervention procedures that produce observable changes in the child.

The parent of the severely impaired child has a vital role to play in the education of his child, and the success of the program may be a function of parental involvement (D. Bricker, W. Bricker, Iacino, & Dennison, in press). The success of parental participation may depend predominately on the teacher, so development of skills in this area are clearly essential. The teacher may need to draw on the resources from professionals trained in behavior management, guidance, and/or counseling in order to do an appropriate job with parents. For instance, some parents may be experiencing marital problems related to having a significantly impaired child. The teacher will need assistance in managing such problems, as well knowing when to seek additional help. If the help provided parents is consistent, and programmatic goals are established for the child, progress would seem to be enhanced. Certainly, the teacher can and should acquire effective interaction and training skills, but in many cases the teacher will need external resources to deal effectively with an individual problem.

The educational synthesizer's job is to seek information from a variety of disciplines and then to become the pivotal force that translates that material into daily educational programs for the severely impaired child.

CONCLUDING COMMENTS

The responsibility of the synthesizer is to seek information from a variety of specialists and then integrate such inputs into intervention procedures that can be implemented daily by a classroom staff member or parent.

- The severe and multiple impairments prevalent in profoundly handicapped individuals are placing demands on our educational system that cannot be met without significant modifications. The intent of this chapter has been to suggest that the role of the teacher be one of the focal points for such changes or modifications. Specifically, the argument has been made that teachers or potential teachers be trained as synthesizers. The responsibility of the synthesizer is to seek information from a variety of specialists and then integrate such inputs into intervention procedures that can be implemented daily by a classroom staff member or parent.

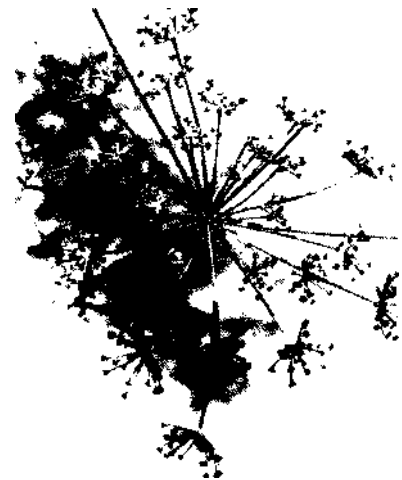
This approach is attractive for two reasons. First, there are not enough specialists from disciplines such as medicine, communications, nutrition, counseling, and physical therapy to offer individualized therapy of the magnitude necessary for the significantly impaired child. Consequently, an intermediary source such as the teacher and/or the parent must serve as the direct intervention agent with the specialist acting as a consultant. Second, the teacher is in a better position to integrate special activities into a child's daily program, which should maximize the probability of movement toward the target objective. For example, if a current goal is to increase vocal production, the child can be stimulated and reinforced for appropriate behavior consistently throughout the day by the teacher, rather than only during an hour of therapy per week provided by the communication specialist.

Ultimately, the viability of the educational synthesizer will rest on objective documentation that these skills produce change and growth in the severely handicapped child.

An attempt has been made throughout this chapter to acknowledge the current lack of objective support for the teacher becoming a synthesizer. We have no assurances that the skills we now think are important will actually produce a more functional educator. Ultimately, the viability of the educational synthesizer will rest on objective documentation that these skills produce change and growth in the severely handicapped child.

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public school programs

richard d. sherr

Key Ideas

- *The most adequate system within which a full service program for the severely handicapped can be offered at reasonable cost is the public school system.*
- *Attitudes, curriculum, personnel, staff ratio, transportation, facilities, settings, equipment, and materials are crucial components in effective programing. A most important problem to be overcome is funding.*
- *Research addressed to administrative concerns such as the most appropriate delivery system or most effective staffing pattern is as yet an inadequately tapped reservoir of solutions.*
- *The challenges which exist require school persons to become more adept in working with boards of education, neighboring school districts, state departments of education, and the teacher training institutions.*

- The most elaborate research program or esoteric theory of learning is of little benefit to the severely, profoundly, or multiply handicapped student if there is not an adequate delivery model or administrative system within which the learning theory or proven research practice can operate. There is little debate that the only truly adequate system within which a full program for the severely handicapped can be offered at reasonable cost is the public school system. There are those who might contend that the private sector is best equipped, and there are others who would propose grand designs for a new and specialized system; however, none of these is truly practical in today's society considering the economy.

The public school system has the benefit of being not only the most practical system currently in place, but in a democratic society such as the United States, it is the only acceptable system to most people. Not only is it available, practical, and reasonable in cost, but a strong argument can be advanced that it is also the most beneficial to the handicapped when all aspects are considered. The public school system typically interfaces with other community based activities, most of which are needed by the severely handicapped learner. The effective public school should already have in operation liaisons with such community based or school sponsored human service activities as the mental health/mental retardation associations, the local Easter Seal Society, and parent counseling organizations. It would be foolish to duplicate these services, particularly in the climate of today's scarce resources.

The public school has the additional benefit of having available a full continuum of services for those individuals who may progress beyond the point of the severely handicapped assignment. Additionally, the school system, if of adequate size, should have available other needed support services such as adaptive physical education, a counseling staff, school health services, and other ancillary professionals to be described later. A further convincing argument for the public school being the preferred institution is that all parents know the public school, have other children going to it, and usually expect this to be the place and institution where their children, severely handicapped or normal, will go from the ages of 6 to 18.

In addition to being the most available service, the expected service, and the service with the most significant backup of supportive activities, the public school may be argued to be the most likely sponsor of programs for the severely handicapped because of its cost effectiveness. To replicate the services to be described in other settings would be truly prohibitive.

There is also the convincing factor that federal, and now most state, legislation mandates that public schools provide a full service program for all, which has the effect of mandating that the public schools provide the service program.

To presume that this is an easy task for the public school or that everything is currently in place for an adequate program within the public schools would be erroneous. The public schools must address the problem more directly, form tighter liaisons with higher education, and develop a higher resolve for programming for the severely handicapped individual. School systems also must do a careful self analysis to determine (a) if they have the expertise within staff, (b) if they are large enough with a sufficient incidence figure for development of a program, or (c) if for these reasons they should form a consortium or become

ARGUMENTS FOR PUBLIC SCHOOL DELIVERY

The only truly adequate system within which a full program for the severely handicapped can be offered at reasonable cost is the public school system.

The public school is also the most beneficial to the handicapped.

All parents know the public school and usually expect this to be the place their children will go.

Now most legislation mandates that public schools provide a full service program for all.

part of some type of regional educational service agency.

PROBLEMS OF PUBLIC ATTITUDE

The public attitude is that cost shall not rise and that the handicapped may not have the potential to benefit from additional expenditures.

Not too many years ago, the severely handicapped were not provided for, and special educators supplied a variety of supposedly plausible reasons.

THE CURRICULUM VOID

No curriculum exists that has been tried and has withstood the test of usage.

- The public attitude is a problem to which a school system must address itself—whether the school system be a local system or a regional educational system such as has been formed by many states to provide specialized services. The public attitude, despite the fervent wishes of special educators, is that cost shall not rise and that there is question if the handicapped, particularly the severely handicapped, should receive high expenditures of monies because they may not have the potential to benefit from such expenditures. Obviously, special educators are appalled at such thoughts; however, these thoughts do indeed exist and are at times expressed publicly even though the meaning may be disguised to some extent behind other language.

Since its inception, special education as a profession has been fighting public attitudes toward the handicapped. This is a most significant battle which has yet to be won. It is a particularly difficult battle at this point when boards of education across the country are stripping away services and programs for "normal" children. Of course, the history of special education does not help in this argument. Not too many years ago, the severely handicapped were not provided for in most states, and special educators supplied a whole variety of supposedly plausible reasons. They should not be surprised if boards of education pull forth those same reasons now.

To overcome the negative public attitude where it does exist, the school system must develop and demonstrate exemplary programs, paying attention to demonstrating what can be done for the severely handicapped individual and making certain that those in positions of power as well as the average person are made aware of the benefits.

Another problem that must be overcome for effective programming for the severely handicapped individual is the existing curriculum void. No curriculum exists that has been tried and has withstood the test of usage. There are many incomplete and partial curricula available; however most of them have rather serious deficits. Unfortunately, also, many curricula for more able children have been "adapted" to the severely handicapped and have in most instances caused more harm than benefit. It is indeed unfortunate that the area which most needs a well developed, sequential, and carefully planned curriculum has, in fact, the most inadequate one.

In lieu of an adequate curriculum, most teachers and school systems have simply operated a program without a curriculum to guide them. This has frequently created a poor use of time, caused meaningless activities and, in some cases, worked actual harm upon the children enrolled in the program. The poor curriculum serves to reinforce poor behaviors. A strong and appropriate curriculum must be made available to the severely handicapped in order to bring forth the greatest potential possible. Such a curriculum must prepare the individual for independent living as far as possible. It must also develop whatever potential academic and vocational skills exist.

PERSONNEL NEEDS

There are very few training programs turning forth adequately prepared teachers for the severely handicapped.

- An equally serious problem to that of curriculum is the matter of personnel. There are very few training programs in the country that are turning forth adequately prepared teachers for the severely handicapped individual. In many instances, systems that are developing programs for this individual must employ persons with inappropriate or inadequate training and provide the inservice resources to make them

into the type of person which they need. This is an area which deserves innovative programs and techniques. Programing for the severely handicapped is one of the newer areas of special education, and it lends itself to various types of staffing patterns, and a variety of levels, types of staff, and competencies can be developed. Further, it appears that many institutions that purport to be training individuals for severely handicapped classrooms do not appear to understand the nature of the problem. They are graduating persons who are able to cope with intellectually limited individuals, either at the trainable or educable level, but do not have a concept of the multiplicity of problems and the behaviors necessary to work with these problems.

Not only is there a dearth of well prepared teachers for this program but there is also an absolute scarcity of master teachers or support teachers to complement the classroom teacher. Training programs for this kind of person are rare.

There is also a scarcity of support staff to complement the classroom teacher.

Personnel should not be limited to the teacher or support teacher for the classrooms but training programs must be instituted for the development of adequate paraprofessional personnel. The classroom for the multiply handicapped, as noted previously, permits a variety of innovative staffing approaches. Many positions may be filled by paraprofessionals. There is the beginning of a paraprofessional preparation program in some community colleges and statewide systems; however, the number of programs is woefully inadequate across the country. Most systems employ people for paraprofessional positions from other fields or people with no preparation at all. There is also a trend toward hiring professionally trained people as paraprofessionals because they cannot find positions elsewhere, only to watch them leave as soon as an appropriate position becomes available. It would be most desirable for the profession to look at the competencies required of a paraprofessional, develop a training program to develop those competencies, recruit participants, and turn forth such persons for employment in classrooms for the severely handicapped.

The number of paraprofessional preparation programs is woefully inadequate.

In discussing personnel in the severely handicapped classroom, one cannot ignore the subject of volunteers. There is a debate as to whether volunteers are in fact helpful; some researchers state that they are indeed helpful; others say that they are not.

It would appear that, with adequate support and time for learning, volunteers can be a worthwhile group of people. My experience suggests that a volunteer program is not a desirable activity unless one can support the recruitment, selection, and placement of such persons appropriately within the administrative structure of the system. Desirably, this would take one individual who devotes himself to that activity.

A volunteer program is not desirable unless one can support recruitment, selection, and placement within the administrative structure.

A further consideration under the topic of personnel is the appropriate ratio of staff to pupils. There are those who would argue strongly that the severely handicapped can only be appropriately aided by a one to one ratio. As noted above, constraints of today's world will not permit this. These financial constraints and the need for intensified service of this population group draws upon one's innovative skills. This demand lends itself to imaginative staffing patterns.

It does not seem possible to present a set ratio of pupils to staff, as this can vary from room to room depending upon the severity of handicaps in the classroom, the existing staff patterns, and the resourcefulness of the teacher. One state indicates that with a group of five pupils, a teacher and an aide may be employed. This would seem to be a

For the severely handicapped, an inadequate staff to pupil ratio can endanger the very lives of the students.

luxurious staff ratio to some persons; however, if one would inspect the needs of these individuals only in terms of their health, this might in fact be an overload. The administrator or responsible persons for the severely handicapped classroom must be aware of the fact that of paramount importance is the health and safety of the children. If feeding the children without having them choke is a problem, it is essential for their very lives that an adequate staff be available. It is this type of activity that may require the innovative use of staff or the use of aides. There are many other situations within a classroom that are equally demanding of the teacher.

TRANSPORTATION DIFFICULTIES

D Moving from the personnel needs of the classroom for the multiply handicapped to other types of problems which must be resolved, one thinks of the mere transporting of the children to the classroom. The multiply handicapped individual obviously is not able to join his age-mates on a 55 passenger yellow school bus that pulls up at the corner 10 houses away. Further, if he were carried to the corner, it would not be possible to place him on the bus because there would be no one to hold him in his seat or help him, for example, to and from the bus. Obviously, there are serious demands on transportation arrangements to simply get the individuals to school. This appears to be a rather mundane topic; however, if one consults with those who have operated a program for the multiply handicapped, one will quickly learn that this is a most vexing problem to which administrators devote a great deal of time, attention, and money.

All the special equipment and arrangements needed are costly and frequently exceed the cost of education of a normal peer.

A review of the problem by any informed person would reveal that special arrangements must be made not only in getting the child onto the vehicle, but also in safely transporting him and then getting him off and into the school building. The specialized equipment needed must be either purchased or made. It frequently includes such items as hydraulic lifts, water beds, and special seat belts. All of the special equipment and arrangements such as having a matron on the vehicle are costly and frequently the cost of transportation of a multiply handicapped individual to school exceeds the actual cost of education for a normal peer. Frequently, the transportation system dictates what type of educational facility can be used, and all too often a highly centralized facility in a special education center is the result.

FACILITIES CONSIDERATIONS

- Facilities are an even more important consideration in the education and training of severely handicapped individuals than they are in other educational programs. For example, it is a serious oversight for the education of the severely handicapped if classrooms are to be housed on the second floor or if there are not ramp facilities throughout the building. Examples such as this sound so basic as to hardly require mentioning; however, there are classes for the severely handicapped housed on second floors.

An age old problem is the notion that the handicapped do not require adequate and attractively decorated buildings.

An age old problem of special education persists particularly with the severely handicapped: the notion that handicapped individuals do not require adequate and attractively decorated buildings because they are "unable to appreciate" them. This myth has been exploded many times but persists here, and school administrators and others responsible for the education of the severely handicapped must not be permitted that type of thinking. In fact, the argument can be advanced quite strongly that this group of individuals needs more desirable facilities than others, and should have the best, rather than the worst, facilities.



Discussion about the location of facilities continues further. Should they be in a special building? Should they be integrated into a regular elementary school building? There are valid arguments on both sides of this question—those arguing for the center approach noting that the array of services and staff can be much more easily delivered in a more cost effective manner if the classes are all in one building. Those arguing for integration into regular programs use all the arguments most frequently advanced for integration. There is not an easy resolution to this problem and there are centers that continue to be established. However, the argument regarding the delivery of specialized services does not hold in view of the fact that if the rooms for the severely handicapped persons are "clustered" in several rooms for the disability in an elementary school, it is equally easy to deliver the specialized services. There is also a consideration for the placement of specialized classes for the severely handicapped in the regular elementary school in that children in general education are then exposed to the more severely handicapped and develop an appreciation for the attendant problems. Frequently, in discussing the location of centers, persons argue that it is less expensive to locate the children in one center; however, attention is not paid to the additional transportation costs for such programing and obviously this is a significant feature.

The question of a center approach versus an integrated one is still being debated.

D The matter of technology, or equipment and specialized machines, relates also to the severely handicapped. As the number of children being educated in programs for the severely handicapped grows, there will be more equipment, machines, and other devices marketed for this group. Obviously, some of them will be helpful and necessary and, equally certain, many of them will be untried, untested, and of questionable value to the severely handicapped. Any person responsible for

TECHNOLOGICAL CONCERNS

As programs grow, there will be more equipment, machines, and other devices marketed—many of which will be untried, untested, and of questionable value.

the supplying of classrooms for this group must pay careful attention to the materials placed in the classroom, determining that they are in fact helpful.

Another practice that must be considered very carefully in equipping and supplying the classroom for this target group is the use of equipment and technical devices designed for more able groups. It is not logical that items that were of help to the educably retarded will necessarily be helpful to the severely handicapped. To buy "teaching machines" and other such hardware for children who are not capable of learning at that level is a serious mistake in programing. Further, it is a waste of scarce resources and is time consuming and frustrating to the teacher. Finally, in the selection of equipment and devices for the severely handicapped individual, it is imperative that one consult with the physical therapist and the occupational therapist. A great deal of the equipment, devices, and technology that is to be used should be ordered by the therapist. At the very least, these persons should be consulted.

THE PROBLEM OF FUNDING

It is the concern of some that resources for the severely handicapped may actually diminish rather than increase.

The education of this target group will be more costly than in the past.

State government must encourage school districts financially to provide the necessary educational program.

The school administrator must become demanding, innovative, and public relations conscious.

- All of the various difficulties and problems that have been described here have some relationship to dollars, i.e., funding, whether it be for supporting the facilities in which the class must be placed, the staff which is to deliver the service, or the transportation system which is to get the children to the service. It is the concern of some that resources for the severely handicapped may actually diminish rather than increase. It remains to be seen what *real* impact federal legislation will have on this problem. It is almost a certainty, however, that the education of this target group will be more costly than it has been in the past, a fact that should not surprise anyone when serious consideration is given to the program and the needs. In the area of funding, the tendency to provide what funds are left over or limited funds because the children "cannot benefit" seems to persist. This must be fought.

Because of the great variety and depth of resources required and the funding necessary to make this available, it would seem necessary that all levels—federal, state, and local—combine their efforts. However, funding for the severely handicapped is as varied and complex across the country as funding is for the nonhandicapped. Unfortunately, it seems that state government must in some way encourage school districts financially to provide this educational program. In the past local districts have not often picked up the slack left by the state funding procedure. Local educational agencies must make every effort possible to provide the extra step in programing for this target group.

It has been stated above that the funding problem is the most significant problem related to the education program of the severely handicapped, and it is the most challenging. For this reason, the school administrator must pay particular attention to how to secure the adequate funding. He must become demanding, innovative, and public relations conscious—to name just a few traits he might need in order to secure the necessary fundings. At times, the fact that dollars are inadequate may need to be brought to the attention of parents and advocate groups so they can join with school persons to convince boards of education of the serious needs.

As a final effort in securing adequate funding, it may be necessary for several school districts or regional education associations to form coalitions to work with their respective local legislators or the department of education to impress upon the decision makers the need for

educational dollars for this group of persons. If needs are not met, it is not adequate for special educators to say "the money is not there." It is essential that some type of program be mounted to make the dollars available as necessary.

• The problems and issues described here could be considered overwhelming on first review. However, this is not the case. Obviously, the word *challenge* is appropriate, but there are many other challenging situations in special education and general education that have been overcome with marked success. Also, there are some programs such as those described in this book that have been developed as exemplary programs in the education and training of the severely handicapped. They demonstrate what is possible. The solutions are available; it is a matter of expending the effort toward the accomplishment of this type of programming.

PROPOSED SOLUTIONS

The solutions are available; it is a matter of expending the effort.

Many persons are initially dismayed upon attempting to develop programs because of the relative newness of the field and the lack of precedent. It is not possible to visit a district or regional education agency several miles away and simply pick up an intact program and import it to another district ready to begin. Every program must be unique. How one evolves his own solutions is a combination of things, beginning with the desire to do the job and the willingness to put forth the required effort.

Attitudes of the power structure and the public must be changed. This can be done in a variety of ways, but it is apparent that attitudes will not be changed readily unless the people whose minds must be changed have some idea of what it is that they are to change and the problem with which they are dealing. This simply means that these persons must be invited to the classroom and be exposed on a firsthand basis to the nature of the problem. This is a most effective manner in bringing about attitude change. When this is not possible, a public awareness approach must be taken which includes slides, media publicity, films, etc. Further, parent groups and volunteers are very successful in bringing problems and needed changes to the attention of people.

Firsthand exposure to the problem is a most effective manner in bringing about attitude change.

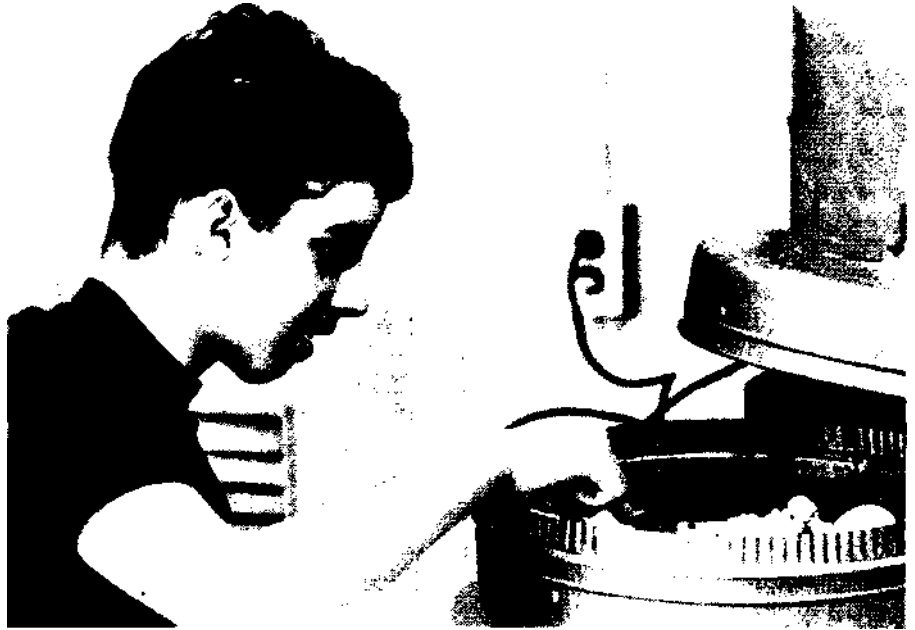
In presenting budgets relative to the education of the severely and profoundly handicapped, one must attend to the features described above as a means of changing attitudes. Further, budgeting must be carefully described in order to document the necessary higher costs, For instance, one would not be wise to simply state that equipment costs a certain amount of dollars for a specific number of children (probably a very high per pupil figure). Instead, one should present the budget to describe the actual equipment that is necessary, what that equipment does for a handicapped child, what the per pupil cost is, and why this particular piece of equipment is essential. The necessity for awareness of the program and the awareness of budget needs cannot be emphasized strongly enough. People are not willing to expend dollars for something if they are not aware of the need for it.

Budgeting must be carefully described in order to document the necessary higher costs.

A solution to many of the above problems that has not been given enough attention is the matter of research on appropriate models and alternatives. There is research available on learning and techniques for the severely and profoundly handicapped, and more research is being conducted each year. However, there is a real dearth of research addressing the most appropriate delivery systems, effective staffing patterns, and other such administrative features. This is an essential area

A solution to many of the problems is research on appropriate models and alternatives.

don't forget about me!



What may be impossible for a single district may be possible for a cooperative of districts.

School persons must become more adept in working with boards of education and more skilled at the game of boardmanship.

to which educators must turn for solutions; however, the questions must be well posed, practical, and directed at real needs.

Many of the problems described above do not have solutions within a single school district and, because of low incidence rates and other factors, will require a cooperative or regional approach. I am a proponent of regional services, particularly for low incidence groups such as the severely handicapped. What may be overwhelming or impossible for a single district may be well within the realm of possibility for a cooperative of districts or a regional effort. Districts must consider the possibility of joining together with others when looking at the problems and attempting to work out solutions.

School administrators and persons responsible for special education programs must be more careful and forceful in working with boards of education. Good information must be given to boards of education and other decision makers so that they indeed have the facts to make the decisions required. The problems and challenges which exist require school persons to become more adept in working with boards of education and to be more skilled at the game of boardmanship. This is not to imply that devious or other less than ethical methods be employed; it does imply that more attention need be given to the "selling" of the program.

The final solution proposed here is that of a joining of the local education agencies, state departments of education, and higher education. The universities and the local education systems have a real stake in the education of the severely handicapped. The local systems are responsible for the actual daily programming. The universities have a professional responsibility, but also an interest in working with the local education agencies as their market place for the graduates. There are uncounted possibilities for cooperative efforts between these two groups; the state departments of education have a responsible role to play in bringing about this marriage, or forcing it if need be.

Universities are frequently viewed by the local education systems as being lost in the ivory tower and unrealistic in response to the real



problems of this type of programing. Further, the public school persons are frequently rebuffed in their approaches to the universities because their ideas may not be phrased in the proper "academese" or their request for questions to be researched do not carry with it the lucrative research grants that may be possible from other sources. The universities must attempt to dispel these images and reach out to local education agencies.

Local education agencies are not without fault in terms of forming this relationship with higher education. Frequently, rather than truly addressing a problem, there is an attempt to cover it up and not turn to the university for help with a real solution to the problem. Too frequently public schools do not attempt to define the problem. Local education agencies must go to the universities with real problems that are manageable and practical and that come from real experience.

It is a certainty that both those in the public school systems and in the universities have a great deal to offer in their respective fields. Each group must recognize this and give credence to it when working with the other. Finally, it is an absolute necessity that these two significant groups for the education and training of the severely handicapped work very closely together to mutually arrive at solutions to enable more and better programing.

- The public school is the best available resource to provide education and training for the severely, profoundly, and multiply handicapped person. As has been pointed out in this chapter, this will not be an easy endeavor for the public school system because there are a variety of problems which must be overcome. However, the solutions suggested here can be very effective. Special education has a real responsibility to construct and deliver programs which enhance the learning of the severely handicapped. This responsibility also includes working for adequate funding to conduct such programs. To permit less than this for the severely handicapped is intolerable.

To bring together the resources and expertise to provide the appropriate program is the challenge before the profession at the moment.



The universities must reach out to local education agencies.

Local education agencies must go to the universities with real problems that are manageable and practical.

CONCLUDING COMMENTS

Special education has a real responsibility for programs which enhance the learning of the severely handicapped. To permit less is intolerable.

planned change: the role of technical assistance

leonard a. kenowitz

Key Ideas

- *The delivery of services necessary to fulfill the needs of severely handicapped children and youth requires sound, planned change in the administrative domain.*
- *For change to be successful, the planning process must provide for new benefits that will replace the old system.*
- *By involving Interagency professional participants in planning activities, administrators can analyze, test, and decide on alternative solutions to identified problems.*
- *Well managed technical assistance deters people's resistance to change and helps in altering organizational structure as well.*

Sound and imaginative management can fashion a successful and useful enterprise out of routine materials, while poor management can vitiate the most brilliant technical and staff work and lead to an appalling waste of human effort. (Beer, 1967)

SOUND MANAGEMENT AND PLANNED CHANGE

Perhaps in no other special education service domain more than in the provision of exemplary services to severely handicapped children and youth is the process of sound, planned change required. Planning requires a distraction free environment, physical and mental distance from home plate, open agendas, and an atmosphere that stimulates social interaction. However, special educators can barely keep their heads above water responding to the exigencies of the moment—education-for-all legislation, zero exclusion, an aroused and informed parent lobby, finance oriented legislatures, and their own zeal for improving services to these children. "Sure I wish I had time to do constructive planning . . .but . . ." is the common response.

Especially in the provision of services to the severely handicapped, the process of sound, planned change is required.

In this chapter, I shall

1. Explain the rationale for taking a step back from the furor and excitement of the moment in order to plan changes to meet growing needs.
2. Describe the components of the planning process.
3. Enumerate some of the pitfalls and resistance paths to planning changes.
4. Demonstrate how a well conceived and imaginatively administered technical assistance program can overcome these points of resistance.
5. List some of the principles of delivering technical assistance based on the principles and constraints set down here and on the collective prior experience of those involved in technical assistance.

- Planned change is the deliberate and collaborative process involving the change agent and client system. If there is good planning, many advantages can be expected, including:

REASONS FOR PLANNED CHANGE

Administrative consensus. Consensus is hard to obtain because in every field of inquiry task specialization has developed, and specialists find it hard to agree with "alien" specialists. Specialization in any social system has advantages: productivity, mutual interdependence of a place or function, and expert power. Its disadvantages are departmentalization, decentralization, status concerns, and favoritism. Specialization is inevitable given the growing knowledge in every field; yet, specialists do not often have the time, inclination, or skill to administer. They must give what Presthus calls "an administrative consensus" (Thompson, 1961). Physicians must consent to hospital administrators managing, describing authority systems, designing rewards and punishments, defining roles and responsibilities, and outlining expectations. Academic specialists in special education must give their consensus to be administered, the professors to the deans. Cooperative planning can improve consensus and ultimately provide for cooperation, understanding, and security: It does so by bringing together the program analyst, the specialist, the administrator, and the financial officer. All participate in the development of planned change.

Cooperative planning can improve consensus and ultimately provide for cooperation, understanding, and security.

Interagency cooperation and accountability. As previously noted, many agencies now compete for both control and the limited resources being

, don't forget about me!

appropriated to serve the severely handicapped. A recent Government Accounting Office report (Comptroller General of the US, 1974) noted that over 50 major federal programs provide some service to handicapped children and youth. This report also noted that poor planning has resulted in the compromise of program effectiveness and the blocking of the Office of Education goal of an "appropriate education for every handicapped child by 1980." But the movement to educate severely involved children is still just beginning and has not grown beyond controllable proportions.

Adequate interagency cooperation can avoid duplication of effort, help expedite informed decisions, and define responsibilities. Adequate interagency cooperation can give information on where resources are being placed and on what further resources are necessary, thereby avoiding duplication of effort and fragmentation. Interagency cooperation can help promote a common data base, or, if this cannot be achieved, cooperation can at least facilitate an information exchange that each discipline can understand. A cooperative agency approach would help expedite informed decisions. Another natural consequence of a cooperative agency approach is that of accountability; with clearly defined responsibilities no one can shirk accountability. Also, program modification based on adequate feedback can be delegated to the agency with real power to improve programs.

Allocation of resources. Presently there are limited human and material resources for improving the quality of life for the children with severe handicaps. Finances are tight. Most states are using only federal dollars to serve this population and the federal share for all education of handicapped children is only 5%. What minute fraction goes for the severely handicapped? Educators know, too, that there are only a few individuals who are "experts" and can be listed as resources in designing and implementing successful programs. Also, there is no common curriculum, measurement strategy, or assessment tools to bind these programs together. Teachers being trained to work with these children vary widely in their orientations and skills—and so do their professors. It is obvious, given such limits, that better planning must occur. With it educators can allocate resources for maximum impact. Without it, the consequences are concentrated wealth, over- and underproduction, and perhaps even eventual exhaustion of resources.

With better planning, educators can allocate resources for maximum impact, *By defining the population and agreeing on goals, groundwork can be laid for proceeding with programs and sharing information.* *Agreement on goals and definitions.* By defining the population and by agreeing on goals and objectives, groundwork can be laid for proceeding with programs and for sharing information based on this common understanding.

Outreach efforts are really the ultimate test of the reliability and validity of programs, *Better outreach.* Outreach efforts are really the ultimate test of the reliability and validity of programs. No educator can afford to sit back and point to his successes—not if he expects to serve the children who need him. The problem of outreach concerns two parties: Not only must the program developer assume responsibility for his program's generalizability, but also the recipients of outreach must assume responsibility for modifying the program to meet their specific situation. Stedman (1975) has offered some guidelines to help program developers choose a site for program replication. I would like to take this one step further and charge someone to suggest ways in which program recipients can assist program developers to modify programs to fit their particular site.

Planning for alternatives. By involving several active participants in planning, administrators can advance, analyze, and even test alternative

solutions to identified problems. A significant recent advance in the study of organizations was that of the open systems theory. One of the theory components is that of equifinality, or the proposition that in an open system there is more than one way to achieve a desired objective. More than one approach means involving more than one person in planning. Also it involves obtaining more than one point of departure, or reference, for multidimensional problems. Solutions can be advanced and tested in field settings and, the next time around, may result in a better alternative proposed.

Strategic and tactical planning. The planning process has two basic major components—the strategic, or long range plan, and the tactical, or short term plan. Planning activities should never be shut down; they require a continuous system. They also provide a framework for decision making based on accurate, current, relevant data. The 10 year plans of the Soviet Union and the 5 year plans of industry and universities are not exercises in futility. By planning for both the long and short range, planners can avoid future shock. One of the more alarming statistics is the innovation lag between invention and application. Perhaps educators can shorten the gap that occurs between developing an innovation and incorporating that innovation in teaching institutions.

Stability. The movement to educate the severely handicapped will also benefit from planning for stabilization. Max Weber, the German sociologist, noted in his discussion of charismatic movements (and the thrust to educate the severely handicapped still has movement components) that it is inevitable for any movement to become routinized within a bureaucratic structure (Etzioni, 1961). Further, all movements are by their nature unstable, for they do not have the necessary controls and can therefore collapse from this instability (Gerth & Mills, 1946). Planning provides the mechanism for orderliness.

Legitimacy. Planning for the severely handicapped must involve an organizational framework for activities. What has occurred so far in the area of educating the severely handicapped has taken the form of a popular movement or a crusade. What this movement now lacks is the operationalization of its goals. This will result when agencies responsible for these children draw up plans and legalize their activities. Universities, for example, are not the operating agencies for serving these children. The states have that responsibility. Therefore, programs developed at university affiliated facilities do not have service credibility—at least, they will never be responsible for large numbers of children. The state educational agency and the local educational agency are the legitimate agents. With state and local educational agencies involvement in the planning process by assigning task responsibilities and accountabilities and by conducting evaluations, educators can confer upon the movement a network operation to serve children. The ability to transfer a university center to a public school provides one basis for legitimate operation. As Parsons (1968) noted, when a movement becomes institutionalized—that is, operates within the framework of an organization—it becomes legitimate. We must now move from mandate to function.

Feedback. Planning offers a built-in feedback mechanism. Such a feedback mechanism is the essence of evaluation (consider the simple example of a thermostat). Only through accepting feedback as a

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Planning should not only alter people's behavior, but should also provide means for altering organizational structure and climate.

THE PLANNING PROCESS

Planning must involve people since involvement reduces the possibility of alienation.

control/evaluation device can educators make program improvements. They can examine both successful and unsuccessful interventions with systematic use of feedback and the original interventions can then be modified: The essence of feedback is control. Education in general has been truly remiss in its use of feedback to control and change behaviors. A recent study conducted by the Children's Defense Fund (Edelman, 1974) analyzed who was out of school. What was needed was an examination not only of why students were out of school, but how this feedback can be used to modify programs to avoid future "why's." Medical science may provide a model here, for it is perhaps the most successful science at examining its failures. One might even argue that society owes modern "miracle" medicine to the autopsy examination.

Allowance for people and structure. The process of planning, if done in an open systems application, can provide for the two most important elements of any organization—the people and the system or structure. The history of organizational analysis and study has progressed from the microcosmic approaches of psychologists such as Lewin, Allport, and Freud; the macrosociologist theories of Koerber, White, and Malinowski; the socioeconomic theories of Marx and Durkheim; and the open systems theory, which permits an integration of these elements to study social phenomena (Katz & Kahn, 1969).

Change can only occur when both people and structure undergo change. Schein (1970) reported that when foremen at the International Harvester Company were given supervisory training for two weeks and later tested on two leadership behaviors, they rated higher immediately following training than before the training on the measured leadership dimension. However, the foremen's gain was temporary: Not only did they lose what they had gained, but they had regressed to showing less leadership than before training. Investigations about this boomerang effect indicated the attitude of the foremen's boss was the crucial variable in determining whether the training had been successful: "The effects of the training were intimately related to the culture, the climate of the departments from which the men came." The point here is that planning should not only alter people's behavior, but should also provide means for altering organizational structure, climate, and opinion to accommodate and maximize behavior change.

- It would be presumptuous here to propose an ideal plan for serving severely handicapped children. What I can advance is a description of the planning process; the literature is replete with references related to planning change. By adopting a model, a process of planning, one can plug in the particulars of any system to that process as they relate to a situation and its aspects. Thereby one can arrive at a more adaptable and realistic guide to planning. As Boguslaw (1965) noted, the heuristic approach to systems design provides for action and is not bound by preconceptions about what the particulars of any system will be.

Before I describe the components of the planning process, there are some "givens" that I should explain. First, planning must involve people; involvement reduces possible alienation of those not involved in planning. At implementation time, people will not act as roadblocks if they have been involved in the planning process. As Lewin and Grabbie (1961) pointed out, changes in sentiment do not necessarily reflect changes in cognitive structure. A would-be change agent may have the vocabulary and be able to parrot the right words, but to influence a

person's conduct and action, a change agent must get him or her involved.

During the planning process, one set of rules, regulations, guidelines, and procedures is typically replaced by another. There is a danger that in closing one system down one will be insufficiently aware of what that system offers and is then ill prepared to offer alternatives. As Merton noted: "Any attempt to eliminate an existing social structure without providing alternative structures for fulfilling the functions previously fulfilled by the abolished organization is doomed to failure" (Cited in Boguslaw, 1965, p. 61).

Two examples are appropriate here. The first concerns Child Find. Congress, in Public Laws 93-380 and 94-142, mandated that each state conduct a Child Find procedure. When Child Find is implemented and parents are shown the school system as an alternative to home, intervention must be done with the same level of quality controls as are employed in finding children. If there are no programs, a child is merely taken from a home without providing an alternative arrangement.

The second example concerns deinstitutionalization. Today the feeling is anti-institution. But what substitutions are being advanced? What are the alternatives to comprehensive medical management for the child? Certainly the public school is not an alternative, at least not until the legal arrangements are changed. In a recent survey conducted by the Bureau of Mental Retardation in the State of Maine (1974), parents of institutionalized children said the most important goal for their children was the children's safety and security and the comprehensiveness of institutional programs. In planning for alternatives to institutions, educators must isolate what institutions provide and replace this with an equivalent. Haring, Hayden, and Beck (1976) noted this function by stating, "We will never be able to close institutions because there are times when parents are no longer willing or able to provide care for their severely handicapped youngster." Are the schools safe and secure from ridicule? Are comprehensive programs being offered? Are parents willing to feed their children and change their diapers? A first step to deinstitutionalization is to assess what functions are being performed by institutions. Educators must be aware of the consequences of any strategy they select.

Data are a prerequisite for good planning (Gregg, 1957). Griffiths (1961) stated that one of the formal goals of an organization is to collect data. Planners must make informed decisions about tomorrow based on today's data. Needs assessments are examples of data needed to make manpower planning decisions.

The planning process must take into account the people who must initiate change and the structure that must accommodate it in order to facilitate the change required. Is it necessary to redefine roles, responsibilities, supervisory relationships, expectancies, and budgets to accommodate desired changes? Planning accounts for both structure and personnel components.

Another point to be considered concerns the assumption that if change is *planned*, it is always beneficial. It may actually be detrimental, and any change must be examined beforehand in terms of benefits (Skibbins, 1974).

Finally, planning should be continuous and based upon feedback, constant redefinition of strategies, objectives, and personnel roles. Good planning is not a static process. Generally speaking, the social change process involves a change in values, implementation of pro-

There is a danger that in closing one system down one will be insufficiently aware of what that system offers.



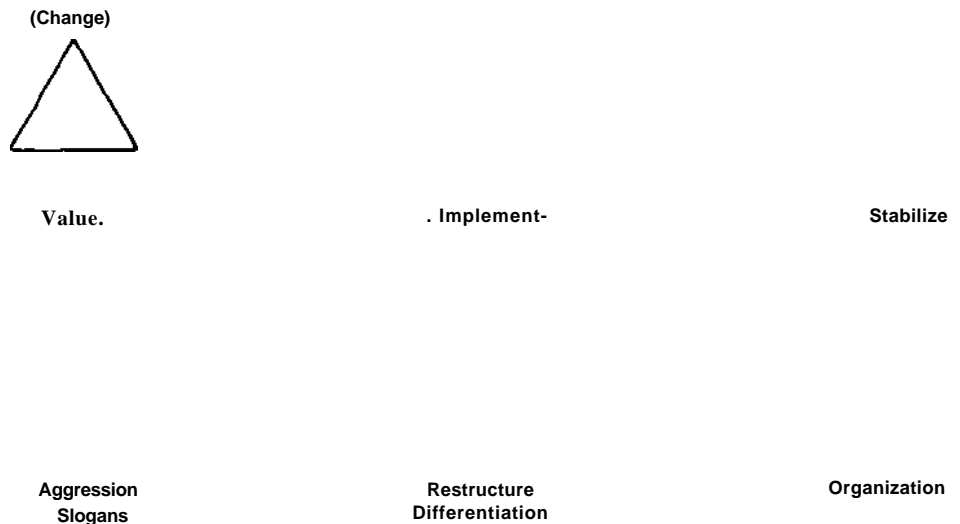
Change may be detrimental, and any change must be examined beforehand in terms of benefits.

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grams, and stabilization. Stabilization, of course, contains the seeds of the change process. The change process is illustrated in Figure 1.

In order to conceptualize the planning process, a definition is needed: "Planning is an attempt to control the future in the direction of a desired goal through decisions made on the basis of careful estimates of the probable consequences of action" (Gregg, 1957).

Figure 1. The change process.



This is a good beginning, but it lacks antecedent, a reason to change, and consequent reference, or feedback. If one analyzes this definition, one can tease out of it the following components of the planning process:

1. Disequilibrium. This provides initial thrust, the desire to do planning. A number of forces can upset the operating equilibrium of any organization, including legal enactment, new values or consciousness, manpower demands, production schedules, and leadership or lack of leadership. Budoff (1975) reported on the development of Chapter 766 (the Massachusetts model education-for-all legislation) as emanating from a disequilibrium in the number of minority children who tested as handicapped in Boston. Knezevich (1969) called disequilibrium a "felt need."
2. Problem identification and analysis. Once the forces of disequilibrium have been felt, the problem should be addressed as to its urgency, who is affected, how quickly a decision must be made, and its cause. Various inputs for problem analysis should be obtained to get different points of view. Identification of problem causing behavior includes such items as inaction, inappropriate goal setting, selective communication (or its lack), unequal power distributions, accountability relationships, and lack of proper perception of external reality and internal response.
3. Prescriptive inquiry. The next step in the planning process is that of prescriptive inquiry, or "Where are we now in relation to

problem analysis and where do we want to be?" This involves data decisions for today as well as value and data decisions for the future. Although future decisions are based on today's reality, there are a number of analytical, forecasting tools available that are based on today's perception (Hencley & Yates, 1974). Goal setting (Benne, 1961) should also be task oriented, not oriented towards maintaining nonfunctional prestige.

Goal setting should be task oriented, not oriented towards maintaining nonfunctional prestige.

Advancing alternative solutions: "How can we get where we want to be?" Analysis should be centered around each alternative's suitability, cost, impact, benefits, generalizability, consequences, constraints, ethics, and—an important point—trade offs (Taylor, 1971). One way of determining consequences is to check for related innovations, the experiences of others (Hansen, 1967).

Decision making. Proper decision making is the major planning success determinant (Kazmier, 1974). Decision making in a planning process basically involves reducing the number of alternatives advanced in the previous step. Some pitfalls to avoid include agreement by exhaustion (Cleveland, 1960), use of radical decision making rather than simply redefining the existing policy, and the belief that no action is a form of decision making. Obviously, it is impossible to know the determining consequences of each decision or to realize that decision making in itself is usually a sufficient process. Organizations usually give us, for example, decision making parameters, limits, principles, choices, policies, and data. In business, the principle is to maximize profit; in education it is to achieve multiple goals. Fact and value determine the goals, and good decision making can help us realize goals.

Decision making in a planning process basically involves reducing the number of alternatives.

Acquiring proper resources. If the decision was made within organizational limits, one must identify and then accumulate the resources needed to implement it. Ask questions about amount of money needed, people, and their expertise: Are they in the shop or do we have to set up temporary systems? Is retraining necessary? What time is needed to acquire proper resources?

Gaining acceptance. If key people have been involved all along in the planning, they will sell the program. A planner must be sure to include key figures and gain their approval, so they are not surprised when changes are made. Havelock (1973) noted that a public relations effort is important in getting people to accept change.

A planner must gain the approval of key figures so they are not surprised when changes are made.

Pilot and evaluate programs. If possible, programs should be pilot tested. If not, the program should include a process for obtaining feedback to change outcomes. By using feedback, changes in what is put into the system (input), how this input is transformed (throughout), and even the standards of the program can individually or collectively be modified to accommodate feedback data.

If possible, programs should be pilot tested.

9. Diffusion. Once a planner is relatively comfortable with the program, and alterations have been made, he should set up a timeline for diffusion, or dissemination of social invention (Knezevich, 1969). He should decide how much impact should be made and by when, do a timeline or a Gantt chart and try to stick to it, and map out objectives and strategies. This process should demand some type of time-bound analytical tool (e.g., PERT, Program Evaluation Review Technique).

Once a planner is comfortable with the program, he should set up a timeline for diffusion.

10. Stabilizing. Finally, a planner must apply the change to an organizational structure; establish policies, roles, regulations; assign persons; and allocate resources. Within this stabilization process are the seeds of another disequilibrium change.

THE ROLE OF TECHNICAL ASSISTANCE

Technical assistance can help overcome many traditional roadblocks to change.

BARRIERS AND BATTERING RAMS

Technical assistance should be a source of external pressure for change because it represents program successes, resources, and advantages.

Projects should use technical assistance systems to help overcome resource limits.

If technical assistance is to be a successful change force, it must immediately be responsive to emergencies.

- Technical assistance can play a powerful role in helping to overcome many traditional roadblocks to change. A list of such barriers and a summary of what technical assistance can do to knock them down is the basis for the following discussion. At the end of this discussion, I will advance some principles of technical assistance that may tie together the concepts and ideas presented so far.

- The barriers to change—and some "battering rams"—include the following:

Lack of reason to change (lack of external pressure). One of the strongest forces for change is disequilibrium, or the difference between what is going on and what should be going on. This is also known as external pressure. Technical assistance should be a source of external pressure for change because it represents program successes, resources, and advantages.

Lack of resources. This is another commonly enumerated barrier to planned change. Many former and existing special education technical assistant systems have massive resources behind them. Not only are these systems heavily funded, they have the most outstanding experts in the field willing to serve as their trainers or consultants and paper resources or support systems ready for service. Projects should use these systems to help overcome resource limits because of line item limitations, other mandated priorities, frozen funds, untrained people, and program ignorance.

Bureaucratic red tape in delivering services. When an immediate need arises, any responsive system must be able to deliver help with speed in direct proportion to the need. State departments, local school districts, and many existing technical assistance systems do not respond fast enough to the need. Hence, a "Why should we bother to keep up?" attitude permeates service delivery. Anticipating being late or postponed is the rule rather than the exception. A well executed technical assistance program should be able to respond at a notice with consultants on call, materials developed on future needs, funds allocated, etc. This is a very important point: If technical assistance is to be a successful change force, it must immediately be responsive to emergencies.

Lack of successful program models. The cry of "Well, it just can't be done" has been raised by defeatists in all professions. Technical assistance systems are in the business of helping because they have proved that it can be, and has been, done. Technical Assistance Development System (TADS) was supported based on the successful efforts of people who now are consultants to the TADS network: They have proved that it can be done. Once success can be demonstrated to a client, a large barrier of despair is replaced by hope. Technical assistance can give this hope.

Lack of skills by the staff. Often resistance to change is manifested by fears that it cannot be done or hysterical reactions to the size of the challenge. What this usually boils down to is the fact that the existing staff does not have the skills to conceptualize the needed changes, to

implement them, or to stabilize and maintain the system. Good technical assistance not only can help in conceptualizing needed changes but can also show how changes are to be implemented and formalized. It can also provide for the staff training or retraining that is required to implement and stabilize the necessary changes. An often overlooked requisite of planned change activities is that once a commitment to modify existing programs has been made, the system must be stabilized and maintained. This can only come about through training or retraining on how to use the established system or the recruitment of an already trained individual and, as noted time and time again, structural adaptations.

Good technical assistance not only can help in conceptualizing needed changes but can also show how changes are to be implemented.

Communication gaps. A well designed technical assistance system will reduce communication gaps between and among individuals involved in the common thrust to serve the severely handicapped. Entire books have been written on the process of communications; however, miscommunication is often given as the rationale for inaction. It can be diminished by a well designed communication system that has the following principles: accuracy of information, understandable language (minimal jargon), speedy communication, readable and interesting materials, relevant information, and contemporary concerns. Information is perhaps one of the strongest change agents. Communication should particularly aim at supplying support information for those in the developmental stages of initiating change processes.

A well designed technical assistance system will reduce communication gaps.

Shibboleths, primacy, and recency. Educators are all familiar with psychology learning theory research on the effects of primacy and recency on the learning process. They are also more than familiar with a statement like, "That's not the way we used to do it," or "When Joe Blow was here, he did it this way." Powerful blocks to change are the inertial forces of tradition, and always having done it one set way. Good technical assistance must be able to demonstrate that an alternative way of doing something can result in greater effectiveness and efficiency. It must be accountable for new research, the new technology, the new programs. Traditions can also be broken if a new reward system (recognition versus maintenance) can result from implementing change.

Technical assistance must demonstrate that an alternative to a traditional approach can result in greater effectiveness.

Dependency. One strong factor that can either inhibit or foster change is dependency. In the absence of change impetus, an individual or change agent will cling to what provides him with security and job satisfaction—usually that is the institution in which he operates. Institutions are, by their nature, representatives of the status quo, i.e., no change. Change agents can also foster dependency on themselves to effect change. If it can be demonstrated that a change will provide rewards for the individual, for the child he is concerned with, or for his boss, this dependence can be a lever to promote change.

Rejection of the outsider. A prime reason for resistance to change is the rejection of the outsider. If this person is rejected, then obviously so will be his advice and expertise. To avoid this, a good technical assistance system will know the client and be able to refer him to experts he will not reject. Also, technical assistance systems will be able to match a consultant with a recipient. For example, if one were to provide technical assistance in the area of state plan amendments to Title VI-B of the Elementary and Secondary Education Act, one would not match up a university researcher with a state department liaison officer. This

A technical assistance system should know the client and be able to refer him to experts he will not reject.

simple concept is often overlooked, but the subtle distinctions to be drawn about client-consultant relationships can be used as a basis for matching consultants to recipients.

Legal restraints. The law is perhaps the most powerful force for or against change. A legal restriction that prohibits public schools from serving the severely handicapped must be examined in relation to its rationale: Where it is found lacking, evidence to the contrary should be proposed. Appropriate avenues for disseminating such information to lawmakers must be used, for legislatures make the laws. Most legislation is rooted in some lawmakers' beliefs, but if the precedents on which the law is based can be shown to be faulty, changes in the law can be made.

If the precedents on which the law is based can be shown to be faulty, changes in the law can be made.

TENETS OF TECHNICAL ASSISTANCE

- Technical assistance consists of training, consultation, research (data feedback), dissemination, and service. Its basis is to extend expert advice to those in various developmental stages of program advocacy through offering alternative delivery systems. Although there is always a danger of overexposing principles so that they become ineffective and commonplace, I believe that by enumerating, discussing, and alerting others to these tenets, anyone involved in the planning of change can do a better job. There is an organizational design inherent within the principles that I am enumerating; however, this is not the forum to discuss the organization for delivering services. For ease of both explication and adaptation, I have divided these tenets into three categories:

- Developing technical assistance.
- Delivering technical assistance capabilities.
- Working with a supporting agency.

Developing technical assistance. A consultant must first decide why he is assisting. The overlapping concern for all three areas listed above would be that of a competency model to (a) promote familiarity, (b) foster understanding, and (c) facilitate application. While discussion exists concerning whether or not this is a developmental hierarchy, this three step sequence still provides a useful framework in which to organize assistance activities.

If this is the approach taken, the entire administration of a technical assistance system has a framework. Evaluation strategies, resource allocation, and intervention can all be built into the competency expectations. Rarely do short term consultancies do anything but provide familiarity. If one is aware of this, technical assistance can be managed intelligently by observing the following suggestions:

1. Arrange a short turnaround time. Technical assistance must be able to be delivered quickly. Obviously, application cannot be achieved overnight, but a letter the same day, a training sequence, media/materials, information can be. If consultants remember that one of the obstacles to planned change is red tape, they realize that technical assistance systems must be on call, organized, and ready to go in order to facilitate change. Typically, when people ask for technical assistance, they are responding to an emergency of their own to legislation, to angry parents, to a need to spend money by this deadline date, to the exigencies of encumbered funds, to a site review. To be effective, consultants must match the urgency of the request with a proper response time.
2. Know your client. A common client response to external technical assistance is, "They don't even know how my state operates—its

To be effective, consultants must match the urgency of the request with a proper time response.

administrative structure, its law, its policies, politics." This holds true for delivering technical assistance to local and state educational agencies and institutes of higher education. A good tenet in business is to know your customer. Do not suggest something that cannot be achieved; know the powerful people, the gatekeepers. Nothing can do more for your credibility than to note a particular of a social system and bring it to someone's attention. It says you understand their uniqueness. Consultants must be aware of the culture/structure/mores in which clients operate.

*Consultants must be aware
of the culture/structure/mores
in which clients operate.*

3. Involve those being changed in the change process. One of the *sine qua nons* of good planned change is to involve those that the change is going to affect. A mountain of research on small groups has noted this phenomenon: When people participate in the change process they will better accept and enact it. It will also help generate a prior consensus for change.
4. Know what resources are close by. One common mistake is to fly consultants 3,000 miles to deliver a service that someone in town can do. By using resources close to home, a consultant can assist heretofore uncooperative agencies to begin cooperating, reduce costs, foster interdependence, reduce the "get acquainted" time.
5. When providing training or conducting workshops in someone else's shop, do not assume that they are trained or capable of setting up and conducting such training. All consultants have experienced the hot room, the nicotine laden lungs, the light so dim they could not see, picket fence chairs—all the extraneous variables that somehow do have an effect on attending and ultimately on learning capability. Have the capacity to develop conference/workshop competencies in others: A good first step is to distribute workshop checklists.
6. Screen your people. People *and* structure make up social systems. Everyone knows of instances where the players have been changed but the results are the same; or the rules have been changed but the people are the same and, consequently, the results are the same. Since technical assistance systems exert great control on their resource people as well as the structure, not only should rules be changed, but the people also. Get rid of the ones who year after year do a poor job. One of TADS' principles is to establish an authoritative base for information, thereby increasing its credibility. People with an established track record typically do not have to spend time proving themselves.
7. Make the recipient of technical assistance earn your work. As noted previously, no model, no program, no person, and no advice can fit two places exactly. Modifications and alterations are needed. This need puts an onus on the program developer, for program generalization is a great responsibility. A recipient of technical assistance should be involved in making program modifications and alterations.
8. Provide followup services. Technical assistance systems should not only be involved in program outreach efforts, but should also provide assistance in stabilization efforts. That involves fitting the program, the advice, and the training into the existing organizational structure, and assisting in the ascription of roles, responsibilities, relationships, accountabilities, and financial systems. Any system

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but when necessary, the people also.*

*A recipient of technical assistance
should be involved in making
program modifications.*

*Any system will collapse if
proper stabilization efforts are
not made.*

will collapse if proper stabilization efforts are not made: This basically involves what has been called followup services.

A consultant should let the client take credit for achievements of the new program.

Content training is worthless unless the correlate structural changes are also made possible.

By using peer learning a technical assistance system can reduce the "get acquainted" time.

9. Make the first meeting count. The adage "first impressions are lasting" is verified every day. Act with concern—be interested; few things can be more inefficient than spending an inordinate amount of time attempting to overcome a negative primacy impact.
10. Foster initial dependency on your program, your products, and your capabilities. Make the recipient believe that you can help in his efforts to improve educational opportunity for handicapped children. Realizing this goal will help to augment his job satisfaction. Let him take the credit for what is achieved. He is the one who must live with your assistance and continually modify programs.
11. Propose more than one alternative. Whatever you initially conceptualize as assistance back in your office may or may not fit into the field situation. Be adaptable and flexible.
12. Develop the capacity to deliver technical assistance with regionalism. There are people all around the country who are doing unique things. Design rural remote systems in rural remote settings.
13. Technical assistance should relate to both "content" and "process." Technical assistance should not only be content oriented, but training in leadership, change processes, political relations, and role functioning should be provided as structural or implementation components to content technical assistance. Content training is worthless unless the correlate structural changes are also made possible.

Delivering technical assistance capabilities. In delivering technical assistance the following suggestions should be considered:

1. Try for peer learning. If a technical assistance system provides assistance to a public school, it should make sure a local educational agency director is sent; for a university, a professor; for a state department, an administrator. These people will talk the same language and spend less time reducing their mutual suspicions. The style of delivering technical assistance to different types of needy clients will vary greatly, and by using peer learning one can reduce the "get acquainted" time.
2. Build a consultant force partly with your own trainees. Make the recipient of technical assistance a consultant himself. What better way to validate your own assistance and prove the generalizability of some assistance than, after you have trained them, to bring clients into the trainer pool? This model is employed every day in universities—why not in inservice?
3. "Recycle" your consultants. Establish and use those regional centers for providing a recycling effort. It would not take 4 years to train someone who has been in special education for an entire professional life in the particulars of educating the severely handicapped. Provide institutes for sabbaticals, leave times, and post-doctoral studies in the particulars of educating the severely handicapped.
4. Use support systems. Develop transportable training systems ranging from self instructional systems to those to be used with a con-

sultant. This will help reduce the role that the consultant plays, reduce human variance, and provide visual aids which facilitate learning. Person to person training is not the only training design. Support systems should be developed that are flexible and adaptable to many of the training sites.

Support systems should be developed that are flexible and adaptable to many training sites.

5. Build evaluation systems based upon the competency model. When evaluating your work, build various evaluation models that fit the competency design. Do not use an application evaluation design for assessing *familiarity* with a subject area.
6. Have a successful program at home. Make your own program ideal. Foster working relationships with the state and local education agencies, community, department of social and health services, etc. Be able to show off your own shop as a model.
7. Generate research. Any technical assistance program must generate and conduct research on a wide range of topics, e.g., programs, training curriculum, assessment, and administration. By generating needed research answers, you can pilot program modifications at home and then diffuse them. Use the regional centers to generate research on different problems. Chin (1967) has pointed out that research can be used in many ways, including determining the effectiveness of an action or training program, study and improving interventions, evaluating, and testing change theory.
8. Be ready to assess the needs of the client system yourself. Listen to their statements of the problem, but do not simply take their word on what they need help. Implement with an eye on training them how to better assess and implement. Assessing the needs of the uninformed will not yield useful information.
9. Function as an information base. Newsletters, special publications on crucial issues, journals, etc., keep the client system and potential client system informed of relevant activities. The system can also be used as a referral forum for obtaining information on people and product resources.
10. Develop competencies to deliver various modes of assistance. Technical assistance for the severely handicapped should be available in such areas as curriculum building, deinstitutionalization, alternative living arrangements, instructional management systems, measurement, assessment, transportation, and equipment adaptation.

Technical assistance programs must generate and conduct research on programs, training, curriculum, assessment, and administration.

Implementation should be done with an eye on training the client how to better assess and implement.

Working with a supporting agency. There are several guidelines to observe in working with a supporting agency:

1. Have only one source of funds—one sponsor to respond to, one agency for accountability. It has been noted that the weakness of old Instructional Materials Centers and Special Education Instructional Materials Centers was diffuse funding, which generates accountability to different people. The two or more boss system is a classic source of inefficiency.
2. Guarantee that you will be in operation more than one year. Technical assistance requires years of building relationships and programs and of generating research.
3. Do not get bogged down in paper work. Quarterly reports, monthly program evaluations, annual reports, bimonthly fiscal accountings—why should these deadlines be set prior to the begin-

The two or more boss funding system is a classic source of inefficiency.

The project officer should not be allowed to make unilateral decisions; he should be a member of the advisory board.

CONCLUDING COMMENTS

If educators are to serve severely handicapped children adequately, they must plan that change so it will be effective and efficient.

ning of a project? Be flexible: decide jointly with agencies when reports, evaluations, accountings are necessary.

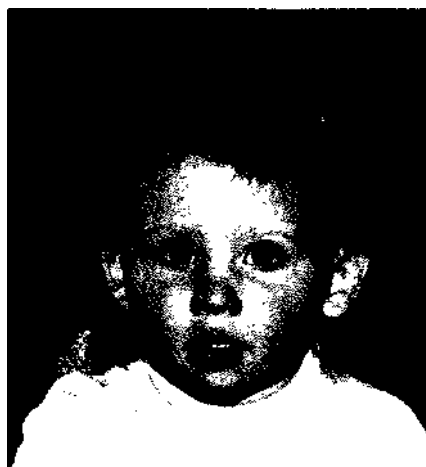
4. Develop an advisory board to assist in making decisions as to the scope and policies of technical assistance activities. Do not allow the project officer to make unilateral decisions. Make him or her a member of your advisory board—a board widely representative of clients, consultants, trainers, researchers, parents, and others.

- Technical assistance systems can play powerful roles as a change agent. Change in local and state educational agencies is essential. The mandate to provide services to severely handicapped children is clear. The need for change is, therefore, urgent. Some form of change will come. If educators are to serve severely handicapped children adequately, they must endeavor to plan that change so that it will be as effective and efficient as possible.

This chapter has discussed a rationale for planned change, a model for effecting change including problems and resistances to change, and the role of technical assistance in the change process, specifically in education of the severely handicapped. Technical assistance systems are in a position to build model programs, research significant issues, disseminate knowledge, and build expertise. Severely handicapped children urgently need appropriate educational programs. Therefore, it is the responsibility of the experts in programming for the severely retarded to develop expertise in the process of providing technical assistance and to develop it rapidly.

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Note: The basic theme of this chapter, that of technical assistance as a change agent, was adapted from a paper presented by Gallagher (1973) at a former Invisible College on Early Childhood Education.

deinstitutionalization

lawrence a. larsen

Key Ideas

- *Deinstitutionalization involves the development of both the individual and the community resources to the extent that everyone can live in the least restrictive environment.*
- *The deficiencies of institutionalization are detrimental to leading a fulfilling life and our society must strive for three goals: (a) to halt further institutional admissions, (b) to return to the community as many current residents as possible, and (c) to improve the care for those who must be retained.*
- *The selection of the residential and program alternatives requires a thorough knowledge and evaluation of every alternative in terms of what each can and cannot provide for particular individuals.*
- *Creditable evaluation of deinstitutionalization programs assesses a specific number of factors that can be measured across programs and populations. It is accomplished by adequate funding, expertise of professional specialists, and an advocacy system responsive to the human needs and civil rights of the clients served.*



- In the past few years, since the term came into popular use, it is common to have deinstitutionalization discussed at most conferences dealing with services for the mentally retarded and otherwise handicapped. Because institutions have a vested interest in the outcome of deinstitutionalization efforts, because much of the burden of accomplishing deinstitutionalization rests on institutional shoulders, and because I work in an institution for the mentally and multiply handicapped, I am especially happy to have this chance to discuss a topic that is both personally and professionally important to me.

RETAINING CHILDREN IN COMMUNITY SETTINGS

When the term *deinstitutionalization* first came into vogue, I was reminded of a "modest proposal" made nearly 250 years ago by Jonathan Swift (1729/1962) for dealing with the problem of a surplus population of children of poor people in Ireland. Similar to what educators hope for the severely, profoundly, and multiply handicapped, Swift sought a means for making these children into useful, productive citizens so that they would no longer be a burden on Irish society. He stated the problem this way:

It is a melancholy object to those who walk through this great town or travel in the country, when they see the streets, the roads, and cabin doors, crowded with beggars of the opposite sex, followed by three, four, or six children, all in rags and importuning every passenger for an alms. . . . I think it is agreed by all parties that this prodigious number of children in the arms, or on the backs, or at the heels of their mothers . . . is in the present deplorable state of the kingdom a very great additional grievance; and therefore whoever could find out a fair, cheap, and easy method for making [them] sound useful members of the commonwealth would deserve so well of the public as to have his statue set up for a preserver of the nation, (pp. 1389-1390)

Insofar as the severely handicapped are concerned, the America of the 1970's does not seem to be much different from the Ireland of the 1700's. Its "kingdom" is also in a "deplorable state," and it is "melancholy" to still observe, as Blatt and Kaplan (1966) have, "children in rags" in institutions who do not grow up to be "sound, useful members of the commonwealth." And there are many who propose "cheap and easy" (but not necessarily fair) methods for dealing with the severely handicapped, very likely so that they also will have statues set up in their honor as "preservers of the nation."

There are many who propose "cheap and easy" (but not necessarily fair) methods for dealing with the severely handicapped.

Swift's proposed solution to Ireland's problem, although unacceptable, did have the appeal of retaining the children in community settings. Having learned from an American acquaintance that "a young healthy child well nourished is at a year old a most delicious, nourishing, and wholesome food, whether stewed, roasted, baked, or boiled . . . [serving equally well] in a fricassee or a ragout" (p. 1391); he made the following proposal:

I do therefore offer it to public consumption that of the hundred and twenty thousand children [born annually of poor parents], . . . twenty thousand be reserved for breed . . . [and] that the remaining hundred thousand may at a year old be offered in sale to the persons of quality and fortune through the kingdom, always advising the mother to let them suck plentifully in the last month, so as to render them plump and fat for a good table. A child will make two

dishes at an entertainment for friends; and when the family dines alone, the fore or hind quarter will make a reasonable dish, and seasoned with a little pepper or salt will be very good boiled on the fourth day, especially in winter, (pp. 1391-1392)

Swift's proposal was more than simply a satire on the conditions that existed for Ireland's lower classes in the 18th century: It reflected his exasperation with several larger issues. He was exasperated with an England that seemed intent on swallowing up the whole of Ireland; he was exasperated with a political order that could not solve pressing social problems with concerted and rational action; he was exasperated with the tolerance of a "civilized" society for the inhumane conditions that it engendered and tolerated; and he was exasperated with the theoretically conceived, and usually unsuccessful, plans proposed by the "benevolent humanitarians" that he parodied so well.

Today's educators should be exasperated with catchy phrases devoid of meaning, mindless bureaucracies, and incarceration of the handicapped.

Today's educators, like Swift, should be exasperated. They should be exasperated with their predispositions for catchy words and phrases that are devoid of operational meaning and which serve only as banners that they wave for their own benefit. They should be exasperated with mindless bureaucracies that take these words and phrases and create, in their name, unwieldy, expensive programs that bear little or no relationship to the human needs that they are supposed to ameliorate. And, in the case at hand, educators should be exasperated in the knowledge that we have for a long time had the financial and technical resources necessary to provide humane care and effective treatment for all handicapped citizens, while we have continued to incarcerate them in those containers of human misery called "institutions."

DEFINITIONS OF DEINSTITUTIONALIZATION

- The deinstitutionalization movement in the United States probably began with President John F. Kennedy's 1963 message to Congress (Kennedy, 1963) in which he called for a reduction, over a number of years and by the hundreds of thousands, in the number of persons confined within institutions for the mentally ill and mentally retarded. This was to be accomplished by retaining them in, and returning them to, the community, where their lives would be revitalized and restored through improved health, education, and rehabilitation services.

President Nixon was more specific when in 1974 he called for reducing by one-half the occurrence of mental retardation in the United States before the end of the century and for enabling at least one-third of the more than 200,000 retarded persons in public institutions to return to useful living in the community.

Kennedy and Nixon pronouncements led to a focus on deinstitutionalization as a primary service goal.

The Kennedy and Nixon pronouncements led to a focus on deinstitutionalization as a primary service goal for the mentally retarded and otherwise handicapped. Scheerenberger (1974) has defined deinstitutionalization as encompassing

three interrelated processes: (a) prevention of admission by finding and developing community methods of care and training, (b) return to the community of all residents who have been prepared through programs of habilitation and training to function adequately in appropriate local settings, and (c) establishment and maintenance of a responsive residential environment which protects human and civil rights and which contributes to the expeditious return of the individual to normal community living, whenever possible, (p. 3)

The New England Case Conference on Planning Alternatives to Institutions (undated) proposed that deinstitutionalization is or should be:

- I. A dynamic process of assisting individuals to live in the least restrictive environment possible, which promotes optimal growth and development.
- II. The development of a comprehensive community-based continuum of services founded on individual needs.
- III. A dynamic process of development of the individual and the community resources and attitudes to the point where the individual can develop to his optimum potential.
- IV. The development of options in the provision of services that recognize the needs of each individual so that he may achieve his fullest potential.
- V. A strategic process involving:
 1. determination of individuals appropriately and inappropriately placed in the institution,
 2. determination of what is needed by those inappropriately placed,
 3. assistance of community resources in providing for those who have been inappropriately placed,
 4. improvement of programming for clients who are appropriately placed,
 5. development of inhome and community services that would enable parents and other caretakers to maintain the client in noninstitutional settings, and
 6. establishment of rigorous screening mechanisms to assure that inappropriate institutional placements are avoided.
- VI. A process that involves:
 1. eradicating little towns (mini-institutions) but not the concept of 24-hour care,
 2. changing physical environments to correspond to what is available to the general public,
 3. promoting growth and development in each individual,
 4. recognizing and protecting a citizen's basic rights,
 5. creating quality of life equal to that of others in society, and
 6. eliminating the custodial concept, (pp. 12-13)

Neither of these definitions calls for an elimination of institutions, although both demand substantial institutional change. Both definitions also make it clear that community placements are generally preferred to institutionalization; that many community alternatives must be developed before deinstitutionalization can become a reality for a substantial number of our handicapped citizens; and that systems must be developed that are responsive to individual differences, needs, and rights.

- It is essential that educators clearly understand their reasons for adopting deinstitutionalization as a primary goal of their efforts on behalf of the handicapped before they institute the massive programs



Many community alternatives must be developed before deinstitutionalization can become a reality.

WHY DEINSTITUTIONALIZATION?

and changes that it will require. I am reminded here of Jesus Christ Superstar's lament to his Father regarding his impending crucifixion, about which he was utterly unenthusiastic: "You're far too keen on where and how and not so hot on why!" Similarly, educators have been better at stating *what* they intend to accomplish, and *how* they intend to accomplish it, in deinstitutionalization, than they have been at stating *why* they decided to do it in the first place.

Financial considerations should not be the primary determinant of services.

With the skyrocketing costs of care in large residential facilities, some would argue that deinstitutionalization should be undertaken to save money. I cannot accept this argument because I do not think that financial considerations should be the primary determinant of services for the severely handicapped. The relative costs of institutional versus community services are difficult to determine, given the changes that are occurring within institutions. If institutional staffing patterns, physical facilities, and programs adhere to Intermediate Care Facility, Accreditation Council for Facilities for the Mentally Retarded, and court imposed (e.g., *Wyatt v. Stickney*) standards, then the costs of institutionalization will be high—probably in the neighborhood of \$22,000 to \$25,000 per year per residential space. It is doubtful that community based programs, even those which include residential services, will approach these figures.

Adopting the goal of "maximum potential" could lead to meaningless statements.

The New England Case Conference definition of deinstitutionalization quoted earlier states that a primary objective of efforts should be to stimulate all individuals to achieve their "maximum potential." Adopting this as a goal could lead to meaningless statements such as: "Freddie achieved his maximum potential at 4:28 p.m. on Wednesday, December 24, 1975." If parents and teachers have been correct over the years, this is a nation of underachievers. Who hasn't had a parent or teacher tell him that he isn't achieving up to the limits of his potential? Can people reasonably expect the handicapped to do something that they have not been able to do themselves? A different approach was taken by a staff psychiatrist in a hospital for the mentally ill when he wrote recently, in a discharge summary, that "Johnny [not his real name] is functioning within the limits of his capabilities at this time." Although the statement is patently nonsensical, it is more valid than stating that someone is functioning either at or above the limits of his potential.

The goal of making everybody producers, rather than consumers, is a poor reason for deinstitutionalization.

Another reason that seems implicit in many deinstitutionalization programs is to make everyone producers, rather than consumers, of economic resources. Again, this is a poor reason for undertaking deinstitutionalization. I am in agreement with Haywood (1974) who has pointed out that not everyone can be, and not everyone must be, productive. I have the feeling that much of the emphasis on productivity is more related to educators' own needs to be professionally productive than to any actual need of the population that they say they are serving.

A better reason for deinstitutionalization is to permit everyone to lead a "reasonably fulfilling" life.

A better reason for undertaking deinstitutionalization is to permit everyone, including the severely handicapped, to lead a "reasonably fulfilling" life (Haywood, 1974). In providing for this, it may be that society will save money; it may be that many of the individuals served will achieve their "maximum potential"; and it may be that many clients will become economically productive. These, however, are only desirable by-products and should not serve as the primary goals of deinstitutionalization efforts.



The essential features of a fulfilling life are difficult to define. For me, however, a fulfilling life is one in which the individual experiences success in meeting the demands of an environment that becomes increasingly complex; in which he has frequent occasion to smile, laugh, and in other ways express pleasure and joy; in which he interacts frequently with others, with both parties enjoying the encounters; in which his behavior "counts" through exerting some measure of control over what happens to him and what he experiences; in which he has a relatively enduring and uninterrupted relationship with others who are important to him (Coleman, 1964); and in which he is respected and treated as an individual while, at the same time, feeling that he is an important member of a group (Coleman, 1964).

The plain fact is that institutionalization is antithetical to leading a fulfilling life as defined above. Institutions have deficiencies that simply cannot be put right. The position taken here is that professionals must stop, and stop short, placing young people in large residential facilities. If institutions continue to exist at all, they should serve only an older population that requires extensive medical and nursing care. Many institutions have placed the highest priority on admitting young children while discharging older residents on the supposition that the institution can and should be a "therapeutic detour" in the developmental life of the individual.

This is erroneous, for the essential features of institutions preclude attaining this objective. There is no service or program that can be provided in a large institution that cannot be provided better, and possibly for less money, in a community setting. The documented failure of institutions to facilitate, and their documented success in inhibiting, the growth and development of the individuals they intend to serve should be reason enough to discontinue their support. There is no reason to continue to support costly residential facilities that can accomplish only the opposite of what is intended.

If institutions continue to exist at all, they should serve only an older population that requires extensive medical care.

The documented failure of institutions should be reason enough to discontinue their support.

There are many arguments that can be proposed to justify the continued support of institutions. I know, because I have used all of them over the past 10 years. For example, I have argued that institutions must be continued because there are no community alternatives available for the severely handicapped, and institutional admissions cannot be curtailed except as community programs become available. I have also believed that institutions are improving and that they can, if given more time, develop effective programs and services. I have also argued that residential centers have been reasonably good for some, for example the hearing impaired, and that they can likewise be good for the mentally retarded. And I have been quick to point out that institutions have never enjoyed adequate financial support which, if made available, would permit them to provide effective services and programs.

Community programs will never be developed so long as the severely handicapped are placed, out of sight and out of mind, in isolated residential centers.

There is some truth in each of these arguments. However, I have come to believe that community programs will never be developed so long as the severely handicapped are placed, out of sight and out of mind, in isolated residential centers. New programs and services are not developed in the absence of an observed need for them, and the need for community programs will not be observed so long as the severely handicapped are quickly and permanently shuttled off to institutions. The history of institutions also indicates that they will not, or cannot, develop effective programs no matter how much time they are given to do so. There has been nearly a decade of "Christmas in Purgatory" since Blatt and Kaplan's (1966) photographic essay was made public; yet I fail to discern any real progress in institutional programs over the past 10 years.

The argument that residential placements can be good for the mentally retarded, just as they are for other populations, likewise cannot be supported. There are vast differences between those served in other residential settings, e.g. the hearing impaired, and the severely handicapped, particularly in terms of the relationships that they are able to maintain with their families and communities, that can outweigh the potentially damaging effects of institutionalization for the former but not for the latter.

Vast increases in the per capita cost of institutionalization are not met with similar increases in program effectiveness.

Finally, I do not believe that the deficiencies of institutions can be rectified simply by giving them more money. Although adequate funding is a necessary prerequisite to effective programming, it is insufficient to guarantee that such programs will be forthcoming. It has been my own experience that vast increases in the per capita costs of institutionalization are not met with similar increases in program effectiveness.

Educators are confronted with a matter of priorities and must realize that the selection of priorities may be beneficial to some at the expense of others. The first priority should be to prevent the institutionalization of additional severely handicapped individuals through the development of community based residential, school, and early identification and intervention programs. As a second priority, educators should seek to return to community settings as many currently institutionalized individuals, and especially younger individuals, as possible. And finally, as a third priority, educators should continue their efforts toward providing humane care and effective treatment for those who must be retained in institutions. If these priorities are accepted, it is possible that those who must be retained in institutions will receive fewer and poorer services than those served in community settings. This will be one of the costs of deinstitutionalization. This cost can be kept at a minimum, however, by insuring that institutional budgets and staffs are not precipitously

reduced, and by assuring that every institution meets minimum care and treatment standards.

- Although substantial social change probably requires a prior commitment to general principles such as those given in the definitions of deinstitutionalization, effecting such change requires practical strategies and tactics. These strategies and tactics, in turn, depend on a prior statement of what educators intend to accomplish with deinstitutionalization efforts.

Stemming from the Kennedy and Nixon statements and from the Scheerenberger (1974) and New England Case Conference (undated) definitions, there is an understandable tendency to equate the goals of deinstitutionalization with decreases in institutional populations, either through increased discharge rates or restrictive admissions policies, or with increases in the number of individuals served in community programs. This approach is insufficient, however, for a number of reasons. First, an institution's discharge rate may be independent of that institution's success in preparing its residents for community living, reflecting instead administrative decisions that are made for other reasons. It has been my experience in one institution, for example, that a discharge rate plotted across years showed a remarkable jump in one year when it was decided to close a 72 bed cottage for renovations. Although our programs were no more or less effective, we did deinstitutionalize a large number of our residents. Institutional discharge rates, then, may not accurately reflect the success of deinstitutionalization programs.

Second, individuals discharged from an institution may find themselves in environments that are far worse than the institutions that they formerly lived in. One study of mental patients (Murphy, Pennee, & Luchins, 1972) has shown that boarding houses and foster care can be more restrictive, segregating, regimented, and "institutionalized," than care in a large institution. Also, there have recently been several news media exposes (e.g., "Crackup in Mental Care," 1973; Trotter & Kuttner, 1974) of the miserable conditions that many former mental patients are forced to live in after being deinstitutionalized. Skarnulis (1976) and Santiestevan (1975) have warned how easy it is for a community residence to become a "mini-institution" in its own right.

Third, reducing institutional populations through restrictive admissions policies is an inadequate objective of deinstitutionalization programs, both for the reasons cited above and because some handicapped individuals, albeit a minority who have histories of severe social deprivation, actually profit from institutionalization (Clarke & Clarke, 1954; Yando & Zigler, 1971; Zigler, Butterfield, & Capobianco, 1970). If institutionalization is beneficial for those of this minority, their natural environments must have been severely depriving.

If reductions in institutional populations and increases in the number of individuals served in community settings are, in and of themselves, inadequate objectives of deinstitutionalization, what can be proposed as an alternative? I believe that the answer here is to be found in some objective measure of the "quality of life" available to the residents of alternative settings, whether they be institutional or community based. Although the development of each individual is the primary goal of efforts on behalf of handicapped individuals, insuring that everyone lives in a setting marked by kindness and consideration, in which he is respected as a person and treated as an individual, and in which he is given a variety of experiences (King, Raynes, & Tizard, 1971), is a

GOALS OF DEINSTITUTIONALIZATION

An institution's discharge rate may be independent of its success in preparing its residents for community living.

Individuals discharged from an institution may find themselves in environments far worse than institutions.

Although the development of each individual is a primary goal, quality of life is a worthwhile objective independent of the setting's measurable benefits in terms of behavior.

worthwhile objective independent of whether that setting has measurable benefits in terms of the behavior of the individuals concerned (King, et al., 1971; McCormick, Balla, & Zigler, 1975).

Fortunately, there are some methods that are already available for assessing the quality of life within various residential settings. Tizard, Raynes, King, and their colleagues in England have developed an objective and reliable measure of child management practices in residential settings (Raynes & King, 1968; McCormick, et al., 1975). Their scale, termed the Child Management Inventory, assesses the extent to which a residential environment, whether it is a large institution or group home, is characterized by rigid routines, block treatment, depersonalization, and social distance between staff and residents. Moos and Houts (1968) have presented a scale that assesses the social environment of an institutional ward that has been shown to be reliable and related to both objective and subjective ward characteristics (Moos & Houts, 1970). And Schaefer (1974) has prepared the Cottage Life Questionnaire, a measure of social climate based on the Moos and Houts work, that is designed expressly for use in institutions serving children.

Educators should develop a standard for assessing psychological environments within various residential alternatives.

As a first step, then, educators should either develop or adopt a standard method for assessing the all important social and psychological environments that exist within various residential alternatives and insure that each individual has an opportunity to live in a setting that meets minimum quality of life standards. This approach should not, however, supplant efforts with respect to other standards, for example those set by the Accreditation Council for Facilities for the Mentally Retarded (1971) or for certification as an intermediate care facility (Intermediate Care Facility Services, 1973). The social and psychological environments provided within residential alternatives should be the first concern, however.

IMPLEMENTING PROGRAMS: BASIC REQUIREMENTS

- Next, what are the basic requirements of successful deinstitutionalization efforts? As specific models and programs will be discussed later, this section will be limited to general issues that must be dealt with as deinstitutionalization programs are implemented. According to Scheerenberger (1974), successful deinstitutionalization requires five integrants including (a) local boards, (b) a standard setting and monitoring agency, (c) backup services and support, (d) adequate financial resources, and (e) a legal advocacy system. Taking Scheerenberger's paper as a starting point, I will discuss each of these integrants in turn.

The first requirement is for boards on local or regional levels that are authorized and accountable for planning, developing, and operating deinstitutionalization programs.

The first requirement is for boards operating on either local or regional levels that have statutory authority, and that are legally accountable, for planning, developing, and operating deinstitutionalization (as well as other) programs for the handicapped. I would like to emphasize, first, that proper planning is important at the local and regional levels and, second, that the need for sound planning is not limited to these levels.

Many difficulties can be prevented if the focus of planning is kept on actual services, if plans are kept simple and realistic, and if implementors are active in development.

Unfortunately, it seems that plans are too often developed for the benefit of those who read them, and not for the benefit of those who are to be served by them. It is difficult to develop a sound plan of action and then stick by it. Unforeseen developments or emergencies get in the way, or a plan becomes too grandiose or too demanding to be implemented. Many difficulties can be prevented if the focus of planning efforts is kept on actual services to a target population, if the plans are kept as simple and straightforward as possible and aimed at realistic objectives, and if everyone who is going to have to implement the plan

plays an active role in its development.

The need for sound planning is not limited to the local and regional levels; sound planning is needed just as much, if not more, at the state and federal levels. Several states, among them Connecticut (Connecticut Office of Mental Retardation, 1973) and Nebraska (Wolfensberger & Menolascino, 1970) have developed comprehensive plans that can be used as models to be emulated. It is within such plans that deinstitutionalization programs should be mandated and statutory authority for them assigned.

At the federal level, the myriad agencies, divisions, centers, administrations, committees, panels, councils, institutes, bureaus, sections, and departments have made it difficult to find logic and consistency in the federal funding apparatus. At best, the result is often fragmented programs which, at worst, are sometimes at odds with each other. I think that even the civil servants concerned would agree that there is a pressing need for better planning and improved program coordination at the federal level.

The second necessary integrant, according to Scheerenberger (1974), is for an independent agency that sets minimum standards for, and that monitors the programs and services provided by, the local boards. This could be accomplished through an independent state agency or through a national organization such as the Joint Commission on Accreditation of Hospitals. The Joint Commission already accredits residential facilities for the mentally retarded (Accreditation Council for Facilities for the Mentally Retarded, 1971) and community agencies serving persons with mental retardation and other developmental disabilities (Accreditation Council for Facilities for the Mentally Retarded, 1973). Perhaps the three most important functions of the standard setting and monitoring process are:

1. To evaluate the "quality of life" provided to the residents in various residential settings operated by the local boards, as was discussed earlier.
2. To monitor the extent to which individualized, comprehensive program plans that have measurable objectives are prepared, followed, evaluated, and modified as necessary for the individuals served (Crosby, 1976).
3. To evaluate the extent to which the total program achieves its intended objectives.

In view of the immense investment of personnel and financial resources that deinstitutionalization will require, and because efforts are necessarily experimental at this point, overall program evaluation is critical. Basically, evaluation efforts should be aimed at finding out how well deinstitutionalization programs are working. A straightforward method for doing this has been outlined by Weiss (1972): (a) state the goals of the program; (b) translate the goal statements into measurable indicators of program effects; (c) collect data on the indicators for individuals who are involved in the program and for an equivalent, or contrast, group of individuals; and (d) compare the data collected for both groups in terms of goal criteria.

Although the purpose and method of evaluation research are clear-cut, there are several reasons why it is difficult to obtain "clean" evaluative data in applied settings. First, program evaluation is political as well as scientific (Cohen, 1972). Reforms are advocated by reformists

Sound planning is needed at the state and federal levels as well as at the local level.

The second integrant is for an independent agency to set minimum standards for, and monitor services by, the local boards.

Overall program evaluation is critical in finding out how well deinstitutionalization programs are working.

It is difficult to obtain "clean" evaluative data in applied settings.

hey, don't forget about me'



as if they were certain to be successful, and outcome data showing the opposite may be perceived as a threat (Campbell, 1972). Second, there may be a conflict between program needs and the evaluation design—here the evaluator usually has to take a back seat (Weiss, 1972). Third, the goals of programs such as deinstitutionalization are rarely simple and clear-cut (Weiss, 1972), making it difficult for the evaluator to translate goals into measurable indicators. Fourth, contrast groups are difficult to locate and random assignment becomes a near impossibility (Weiss, 1972). Fifth, the program being evaluated is rarely a simple, unitary entity, making the interpretation of obtained results difficult (Weiss, 1972). For example, most deinstitutionalization programs necessarily consist of a large number of "treatments" that are initiated simultaneously. This makes it difficult to correlate specific effects with the specific factors responsible for them.

Educators should agree on a limited number of measures to assess program success.

Too often evaluation schemes are proposed that do not have adequate financial backing.

Educators should treat programs as social experiments and have alternative approaches on the drawing board.

The third integrant calls for support services to provide technical expertise not available at the local level.

In view of these difficulties that confront the program evaluator, how can educators effectively evaluate their deinstitutionalization efforts? First, they should agree on a limited number of measures that can be used across populations and programs to measure deinstitutionalization success. A quality of life measure of the social-psychological environments available in different settings has already been discussed. If such a measure were coupled with sound measures of developmental level and progress, many of which are already available, educators would be well on their way to effective program evaluation. Second, funds necessary for effective program evaluation must be provided. All too often evaluation schemes are proposed that do not have adequate financial backing. Third, educators should treat programs such as deinstitutionalization as social experiments that may, or may not, be successful. They should have alternative approaches on the drawing board that can be implemented if their efforts are not successful (Campbell, 1972). If this were the case, evaluation outcomes would be far less threatening to those concerned, and failures would lose a lot of their sting.

The third integrant listed by Scheerenberger (1974) calls for backup and support services that would provide the technical expertise that is needed but which is either not available or not affordable at the local level. Taken as a group, the severely handicapped have multiple needs that require the involvement of a variety of professional specialists, among them physical therapists, speech therapists, psychologists, occupational therapists, and physicians. Especially in sparsely populated areas, it is not possible for every community to have these various specialists readily available, hence the need for a centralized technical



services system. In addition to these direct services, successful deinstitutionalization will require the development of effective staff and parent education programs.

Perhaps the best source of these technical and training services is through the cooperation of local and regional institutions of higher education with the local boards. And, so long as institutions for the handicapped continue to exist, consortiums of these institutions, institutions of higher education, and local boards could provide the needed services. This model has met with considerable success in training special education teachers in at least one location (Brooks, 1975; Larsen, Brooks, Boyd, & Caldwell, 1974).

Fourth, Scheerenberger (1974) points out that "quality services are costly, regardless of where they are offered" (p. 6), indicating that adequate financial resources must be available as a precondition to successful deinstitutionalization programs. It should be added that the allocated funds must be tied directly to, and follow from, the state and local plans that are required. In human services it is too often the case that plans and budgets are developed independently of each other. As Goldman (1975) has pointed out with his In Belief of Money (IBM) theory, major new program efforts do not occur as a result of new models and concepts, changes in standards and ideologies, revised ethics, a sense of outrage, or more favorable cost-benefit ratios; change occurs instead because of the allocation of funds, and it is money that determines and directs social policies. Hence reallocating financial resources to deinstitutionalization program plans, and away from existing services, is another necessary precondition to successful deinstitutionalization efforts.

Fourth, adequate financial resources must be available as a precondition to successful deinstitutionalization.

Finally, as a fifth necessary integrant, Scheerenberger (1974) recommends a legal advocacy system that would be responsive to, and protective of, the human and civil rights of the clients served. The issue of deinstitutionalization is fraught with legal questions that have not yet been resolved (Turnbull & Turnbull, 1975). For example, to what extent must due process be guaranteed to the individual concerned in making placement decisions? To what extent must the affected individual be consulted in selecting a particular alternative for his placement? To what extent is an institution legally accountable for preparing an individual and his family for discharge to a community residence? To what extent are educators legally responsible for providing at least the same kind and quality of services to the individual in a community setting that were available to him at the discharging institution? To what extent are educators legally responsible for "truth in placement"

A fifth integrant is a local advocacy system responsive to and protective of the human and civil rights of the clients.

There is at least an equal need for a personalized advocacy function.

just as financial institutions are under a requirement of "truth in lending"? These and many other legal issues must be resolved as a part of deinstitutionalization efforts.

In addition to the legal advocacy function recommended by Scheerenberger (1974), there is at least an equal need for a personalized advocacy function, particularly in cases in which parents are either unwilling or unable to serve in this capacity. Whether termed citizen advocate (Wolfensberger, 1972), child advocate (Joint Commission on Mental Health of Children, 1970), benefactor (Edgerton, 1967), "educateur" (Linton, 1971), or live-in friend (Perske & Marquiss, 1973), each individual should have someone who (a) provides continuity across program and placement settings, assisting him in adapting to new situations and environments; (b) insures that the programs and services provided to him are responsive to his individual needs; (c) represents him as a *person*, rather than as a set of symptoms, deficiencies, or test scores, in the placement and program planning process; (d) speaks out on his behalf when the system becomes self serving rather than client oriented; and (e) meets his expressive and instrumental needs (Wolfensberger, 1972).

The role of the personal advocate is especially critical in the placement process. The selection of the best residential and program alternative requires an intimate knowledge of the individual concerned *and an* intimate knowledge of all alternatives in terms of what each can and cannot accomplish for that individual. To accomplish this will require a personal advocate who is trained as a generalist and who can speak both the language of the professional and the language of the parent. The European educateur model described by Linton (1971) comes closest to meeting this need.

A sixth precondition to deinstitutionalization is a commitment from public schools to serve all school age children.

In addition to the five integrants listed by Scheerenberger, a sixth necessary precondition to successful deinstitutionalization is a commitment on the part of public schools to serve all school age children (birth to 21) irrespective of the nature of their handicaps or their level of functioning. Far more children could be retained in, or returned to, their natural homes than is presently the case if parents could count on 6 hours of care and programming each day for their children in a public school setting. Day services must be provided for all deinstitutionalized children, and the public schools should be legally accountable for providing these services.

DEINSTITUTIONALIZATION MODELS

- Although there have not been many successful deinstitutionalization programs for the severely handicapped reported in the literature, there are a few that can serve as models for other locations. This section summarizes successful programs that have (a) sought to prevent institutional admissions, (b) facilitated the discharge of institutionalized individuals, or (c) developed responsive residential environments within institutional settings.

PREVENTING INSTITUTIONAL ADMISSIONS

The best way to deinstitutionalize somebody is to prevent him from being admitted to an institution in the first place.

- I think that the data will show, in time, that the best way to deinstitutionalize somebody is to prevent him from being admitted to an institution in the first place and that this prevention is best accomplished through early intervention, with parents serving as primary change agents.

Western Carolina Center's Infants' Program (Cornwell, Lane, & Swanton, 1975), now in its third year of operation, is based on this assumption. Serving high risk and developmentally delayed infants in

the birth to age 3 range, the program staff is divided into 3 interdisciplinary teams, each of which serves a geographic area of approximately 12 counties. The program participants are brought to the center by their parents for an intensive evaluation by the various members of the team. The evaluative information is then used to prescribe individualized programs that can be implemented in the home by the parents. Frequent home visits are made to review the progress made by each infant, to help the parents over any difficulties that are encountered, and to modify the programs as required. The data that have been collected are still preliminary; early indications, however, suggest that the program is having substantial positive effects on its participants (Brassell, 1974; Brassell & Dunst, 1975; Dunst, 1974; Dunst & Kinsey, 1974).

A different approach has been used in the Family Care Training Program developed by the Macomb-Oakland Center in Michigan (Rosen, undated). Here foster homes are located for handicapped individuals of all ages and levels of handicap, and the foster parents, designated as "family care managers," are paid the normal foster care rates plus an additional \$5.00 per day specifically for training services. The Macomb-Oakland Center staff provides training for the managers, who then work under the supervision of community agency representatives. Thus the participants in the program enjoy individualized, goal oriented training in a foster home setting for the modest cost of \$5.00 per day—much less than the costs of similar training provided in institutional and other settings.

For older severely handicapped youngsters, the success of deinstitutionalization depends in large measure on the willingness and ability of public school systems to provide educational programs for them. Time does not permit describing them in detail here, but two exemplary public school programs for the severely handicapped should be mentioned: Project MESH, located in Parsons, Kansas, which serves an essentially rural area, and the Madison, Wisconsin zero-reject model that has been described by Crowner (1975).

- In the past, the major impediment to discharging institutionalized individuals has been a lack of residential alternatives in community settings. If the family is unwilling or unable to accept the individual back into his natural home, and if no community residential alternative is available, there is little recourse to retaining him in the institution. Fortunately, this situation is changing and a large number of community residences have been opened in the past few years (O'Connor & Sitkei, 1973).

There are potentially as many different types of community residences as there are groups of individuals to live in them. Existing facilities vary in size, staffing pattern, administrative organization, and type of resident served (Larsen, undated). A publication by the Florida Department of Health and Rehabilitation Services (undated) has categorized some of the possibilities which are presented in a slightly revised version below:

1. Halfway houses are residential, community based treatment programs for 16 to 30 individuals each. Their residents usually attend local schools or are employed in the community. Halfway houses are usually located in relatively large urban areas.
2. Group centers are residential treatment programs serving from 16 to

One center is based on the assumption that prevention is best accomplished through early intervention, with parents serving as primary change agents.

In a foster home approach, participants enjoy individualized, goal oriented training for a modest cost.

For older severely handicapped youngsters, deinstitutionalization depends on the provision of educational programs by the public schools.

FACILITATING DISCHARGES FROM INSTITUTIONS

In the past, the major impediment to discharging institutionalized individuals has been a lack of residential alternatives

Some possible alternatives are halfway houses, group centers, small group homes, large group homes, and group foster homes.

25 residents each. They are similar to halfway houses with the exception that any educational or vocational programs provided are "in house" and their residents are generally not as actively involved in community activities. Group centers are usually located in suburban or rural areas.

3. Small group homes generally house from 4 to 8 individuals and provide a warm, homelike atmosphere under the supervision (usually) of a resident husband and wife team. Treatment and educational services within small group homes are optional.
4. Large group homes serve from 9 to 15 residents each, and are otherwise similar to small group homes.
5. Group foster homes are community based services providing residential care and services to small numbers of individuals on a contractual basis.

Although a large number of community residences have been developed for the handicapped, few group homes have been developed specifically for the severely handicapped. Two model programs can be described, however. Kin Kare (Martin & Lowther, 1972) is a small



group home program for six severely retarded females in Portage la Prairie, Manitoba. The participants, who were under age 15 when the program began, had been involved in an intensive behavior modification program at the Manitoba School for Retardates and had acquired many self care and work skills in that setting. They were moved to a house adjacent to the Manitoba School campus that was staffed with former employees of the school. Support services, such as food, professional services, and recreation, were provided by the institution.

In one small group home for severely retarded girls, the girls made dramatic gains in the development of "normal" behaviors.

Martin and Lowther (1972) reported that the girls made substantial behavioral gains subsequent to their entry into the program, some of the most dramatic being in the development of "normal" behaviors. They began playing "Twister" and other games spontaneously and without supervision; hiding dirty dishes in the kitchen so that they did

not have to wash them; seeking out their boyfriends when they returned to the institution for the evening meal; and initiating shaking hands and introducing visitors to the home, all of which are decidedly noninstitutional behavior patterns.

A group home program similar to Kin Kare has been in operation at Western Carolina Center since November of 1974. Belevedere House serves five severely handicapped boys who were 12 and 13 years old when it opened. As was the case with Kin Kare, the Belevedere staff was obtained from the institution, and the institution provided backup and support services to the home. For the first 5 months the boys attended special education classes at the institution; beginning in April 1975 they attended classes in a local public school.

Our results at the Belevedere House indicate that the Belevedere boys, when compared to a contrast group of randomly selected youngsters who were retained in the institution, have made substantial gains in self help and preacademic skills and on a measure of social maturity. Some gains in measures of receptive vocabulary and mental age were also observed, although these were not as large as we had hoped for. An initial increase in problem behavior occurred when the boys were first transferred to Belevedere, followed by a gradual decline in such behavior to reasonable levels. Unfortunately, informal observations and the AAMD Adaptive Behavior Scale indicate this decline has apparently been followed by increased rates of problem behavior although it has not reached its original high levels.

Based on our first year's experiences in Belevedere House, there are many things that we would do differently if we were starting over today. First, we would begin by having the group home staff work with the children in the institution for at least a month before transfer. This, hopefully, would minimize the problem behavior that was difficult for the staff to manage when the home first opened and would provide for a smoother transition from the institution to the community setting.

Second, we would employ live-in houseparents instead of shift workers as we did. We felt that we could not reasonably expect a married couple to live almost full time with five severely handicapped, behaviorally disordered youngsters. I think that we were wrong here. Besides being cheaper, the continuity and consistency provided by live-in houseparents is essential, and couples who are interested in this kind of work are available.

Third, we would take greater pains to insure that the Belevedere residents had access to interdisciplinary services. The isolation of a group home makes this difficult; yet it is required by the multiple problems of the severely handicapped.

Finally, we would prepare the group home residents for community living with a better curriculum than was available to us at the time. We were deficient in our ability to teach those skills that are requisite to adapting to a community environment. The criterion of ultimate functioning (see Chapter 1) can serve as a model for developing the community relevant curricula that are required.

- The reason many institutionalized children exhibit maladaptive behavior and so few of them show developmental progress is that deficiencies exist in the quantity and quality of the interactions between residents and staff. There are reasons for these deficiencies, and they do not concern a lack of effort, caring, or intelligence on the part of direct care workers. In a typical institution at the cottage level, there are

In another small group home, five severely handicapped boys have made substantial gains in self help and preacademic skills and social maturity.



CREATING A RESPONSIVE
RESIDENTIAL ENVIRONMENT

don't forget about me!

The reason many institutionalized children exhibit maladaptive behavior and fail to show developmental progress is a deficiency in the interactions between residents and staff.

Most institutions suffer from a severe shortage in direct care positions.

When direct care workers share an accountability for all residents, no one is really accountable for anyone.

When different individuals who work different days and shifts share responsibility, poor communications and programming inconsistencies result.

The institution tends, by its very nature, to create a sterile emotional environment.

usually three shifts of direct care workers who provide 24 hour coverage, 7 days a week. The available personnel on any given day varies, depending on the rotation pattern adopted to cover weekends. Usually, the staff members who are on duty at any given time are collectively responsible for all aspects of cottage functioning, ranging from caring for the residents and trying to carry out training programs to performing light housekeeping chores. Most institutions suffer from a severe shortage in direct care positions, and vacations, holidays, and sick leave all subtract from the available manpower. Thus the typical institution has too few staff members assigned on too many shifts to be collectively responsible for too many residents. Several problems are inherent in this arrangement.

First, the typical staffing pattern contradicts the consistent treatment of, and programming for, the residents. It is difficult for a single individual to behave with reasonable consistency from hour to hour and day to day. Anyone who is a parent knows this. And consistency is one of the cardinal rules of good parenting. The inconsistency that is caused by having as many as 10 or 15 staff members responsible in a vague and general way for each resident on any given day is obvious. When coupled with the inconsistency that is an unavoidable consequence of staff turnover, the lives of residents become chaotic.

Second, when cottage staff members are assigned a collective responsibility for a large group of residents, it is impossible to hold individual staff members accountable for the successes and failures of individual residents. The rule that a single staff member should be accountable and responsible for each aspect of each resident's overall habilitation plan (Accreditation Council for Facilities for the Mentally Retarded, 1971) is probably the most violated rule in the typical institution. When direct care workers share an accountability for all residents, no one is really accountable for anyone.

Third, the typical staffing pattern results in numerous programmatic "cracks" into which individual residents are inevitably lost. If Tommy Doe needs a dental examination, for example, how long will it take for this to be recognized and appropriate action taken? This may happen immediately, or the next day, or perhaps not until the problem becomes acute. If staff member A doesn't have time, perhaps staff member B will have time; or staff member C will have time. If no one has time, Tommy is lost in a crack.

Fourth, cottage programs usually suffer from poor communications. Communications are, by nature, neither spontaneous nor self maintaining, and the extent to which they are required in an institutional setting is determined by the number of individuals who share programmatic responsibility for an individual resident. When different individuals who work on different days and on different shifts have a shared responsibility, poor communications necessarily result. This usually results in different individuals responding to the same behavior in the same individual in different ways—another example of inconsistency.

Fifth, all institutions must accept and cope with the fact that the institution tends, by its very nature, to create a sterile emotional environment. To be institutionalized is to be taken away from parents and family and to sever most emotional ties between the individual and others. This can be developmentally crippling, for a healthy emotional life is extremely important to the development of satisfactory adjustment patterns in later life. There is general agreement that healthy emotional development depends on (a) a close and relatively uninter-

rupted relationship between the individual and a responsive, empathetic parent or substitute; (b) freedom in keeping with maturity such that necessary limits, but not undue restrictions, are placed on the individual's behavior; (c) consistent guidance and support, including desirable adult models that the child can imitate; and (d) a warm and caring atmosphere in which the child is respected and made to feel that he is important as an individual (Coleman, 1964). These are difficult things to provide in an institution, where a resident may be cared for by as many as 70 or more adults in a single year (Tizard, 1970).

Sixth, and finally, there is usually a low level of job satisfaction among direct care workers. As Herzberg and his colleagues (Herzberg, 1964, 1966; Herzberg, Mausner, & Snyderman, 1967) have pointed out, it is those aspects of one's job that lead to an individual's self realization as a person, and as a productive member of an organization, that are critical to job satisfaction. Unless the individual has responsibility for planning, implementing, evaluating, and changing the programs that he is responsible for, low job satisfaction results. Individual responsibility of this nature is impossible in a system in which everyone is vaguely responsible for everyone and everything.

There is usually a low level of job satisfaction among direct care workers due to a lack of individual responsibility.

In sum, the programs provided for an institution's residents are often ineffective, if not damaging, due to inconsistent treatment of residents, numerous programmatic "cracks," poor interstaff communications, a sterile emotional environment, and a low level of job satisfaction on the part of direct care workers.

I'd like to describe our institutional program at Western Carolina Center that is aimed at establishing and maintaining "a responsive residential environment which . . . contributes to the expeditious return of the individual to normal community living, whenever possible" (Scheerenberger, 1974, p. 3). Our "teaching-family" program is based on the belief that direct care workers are the most important ingredients in institutional functioning. It follows that significant institutional change cannot be achieved unless it affects direct care workers. Simply adding professional staff members to an institution can be expected to have little impact on the ways that residents are cared for, although it will increase costs (McCormick et al., 1975).

Simply adding professional staff members to an institution can be expected to have little impact on the ways residents are cared for.

In one of Western Carolina Center's residential units we sought to correct the deficiencies of institutions through the development of a teaching-family program. Based on a model developed in the Achievement Place Project in Kansas (Phillips, Fixsen, & Wolf, 1974; Phillips, Phillips, Fixsen, & Wolf, 1973) and the Bringing It All Back Home Project (Maloney, Braukman, Fixsen, Phillips, & Wolf, 1974; Maloney, Ammons, Maloney, & Timbers, 1975), our efforts (Larsen, Thigpen, & Pittman, 1976) were aimed at expanding the duties and responsibilities of direct care workers by delegating to them more authority and responsibility for programing and by making them accountable for the quality and quantity of services provided for the individual residents assigned to their care.

One approach to overcoming institutional deficiencies has been to delegate direct care workers more authority and responsibility and to make them accountable.

We began by dividing the unit's population into small, 5 to 8 resident groups and selecting 10 of our approximately 25 cottage parents to be teaching parents. The teaching parents were assigned to work second shift, Mondays through Fridays, so that they would be there when their students returned from school until after they went to bed. This insured that each student was dealt with by only 2 staff members on all but 2 days of each week.

Next, we outlined a revised job description for the teaching parents. In contrast to the usual duties of direct care workers, we expected each teaching parent (a) to assume major responsibility for the total programs of each student in his family group; (b) to serve on, and be an *active* member of, the interdisciplinary team that planned programs for each student; (c) to insure that the objectives specified by the teams were translated into effective programs for individual students; (d) to teach social, community living, and self care skills to the students; (e) to meet regularly with the students' teachers to coordinate school and cottage programs; (f) to obtain consultation, for example, from psychologists, speech therapists, physical therapists, as required; (g) to maintain a familylike atmosphere for the family group; and (h) to maintain a record keeping system that reflected the progress that each student was making towards his stated objectives.

The results of this program were substantial increases in adaptive behavior and decreases in maladaptive behavior.

Briefly, the results of the evaluative data that we collected show substantial pre- to postprogram increases in adaptive, appropriate behavior coupled with decreases in maladaptive behavior. Our use of restrictive procedures, such as time out, declined substantially. And, as vacancies occurred, we found that we were able to recruit new staff members who were far better qualified, at least in terms of educational background, than was the case before we initiated the program. This latter effect should be durable—our state personnel system recently approved a 20% pay increase for the teaching parents on the basis of the complexity of their duties and responsibilities.

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federal leadership

edward w. sontag

Key Ideas

- *Because of the amount of professional talent that has been directed toward improving services to the severely handicapped, this area is emerging as one of the most resourceful in the field of special education. It may well be shown that strategies found to be successful with this population are likewise applicable to the more moderately handicapped.*
- *The Bureau of Education for the Handicapped has taken strong actions to bring attention and resources to bear upon the national priority of providing quality public education to even the most severely handicapped child.*
- *Professionals within the educational system have the advantage, both from a technological and a programmatic aspect, to act as the best advocates of full service alternatives for the severely handicapped.*

D The public schools have traditionally excluded severely, profoundly, and multiply handicapped children. Among the arguments for exclusion have been lack of money, inadequate facilities, shortage of teachers, and state regulations mandating that children have a certain repertoire of skills before they might be admitted to public school. Underlying these arguments, however, was probably a basic philosophical belief that these children did not belong in the domain of public education but were better served elsewhere. Even leaders in special education had advocated for years the support of nonpublic school programs for this population, and their arguments were resurrected by regular educators (and by many special educators) when they were faced with the prospect of including the severely handicapped as a responsibility of the public school sector. The prevailing view that these children could not learn, that efforts to educate them simply wasted time and money, reflected ignorance of the characteristics, capabilities, and potential of the severely handicapped.

THE TRADITIONAL EXCLUSION OF THE SEVERELY HANDICAPPED

The prevailing view that these children could not learn reflected ignorance of the potential of the severely handicapped.

Concurrent with the growth of this faulty concept, special education became preoccupied with the efficacy of the special class for moderately handicapped students. In response to this issue, the field began to develop alternative service delivery models which offered viable educational strategies for the moderately handicapped, but provided little or nothing new for the more severely handicapped. Thus, as these models proliferated, they perpetuated the reluctance to place severely handicapped children in the educational mainstream, and subsequently, a continuation of their assignment to inappropriate institutions, day care centers, and other forms of confinement. What should have happened, and what should still happen, is a reconceptualization of these service delivery models to make possible maximum integration of the severely handicapped.

What should have happened, and what should still happen, is a reconceptualization of service delivery models to make possible maximum integration of the severely handicapped.

While public education was exerting most of its energy on programs for the moderately handicapped, colleges and universities were equally slow in responding to the needs of the severely handicapped. Again, many reasons were offered, such as the lack of expertise in this area and the limited budget for new faculty positions. However, like their colleagues on the state and local levels, most people in higher education did not believe that these children should be in public schools because they thought they could not profit from an education. Coincidentally, universities were more interested in nonapplied research than in applied research for program development.

- For whatever reasons, prior to 1971, the professional community did not exercise significant leadership in providing adequate public education services to the severely handicapped. As has been the case with children with other types of disabilities, it was finally the parents who once again led the way, forced the point, and initiated action.

THE BEGINNING OF ACTION

It was finally the parents who led the way, forced the point, and initiated action.

In 1971, the National Association for Retarded Citizens (NARC) issued a policy statement regarding the education of mentally retarded children. Included in the statement was the Association's position on education for severely retarded persons, which said in part:

Public school education must be provided for all mentally retarded persons, including the severely and profoundly retarded. There should be no dividing line which excludes children from public education services. If current educative technologies and facilities are inappropriate for the education

Litigation and new major federal legislation make it clear that in the future severely handicapped children will be served by American public education.

This does not mean that the field of special education is facing an immediate full service posture.

THE ROLE OF BEH

While BEH may have been unprepared initially for the implications of the PARC decree, it immediately addressed the problem with its available resources.

of some retarded, then these existing educational regimes should be modified, (p. 2)

Much formal action has taken place during the past few years to reaffirm that statement and to make its spirit part of the law of the land. Litigation in Pennsylvania, the District of Columbia, Maryland, and other states, along with the new major federal legislation, make it clear that in the future severely handicapped children will be served by American public education.

The new federal law, the Education for All Handicapped Children Act (Public Law 94-142), signed by President Ford on November 29, 1975, also assures the right to education for all children.

In addition to firmly establishing the education of the handicapped as a national priority, this act provides a strict due process guarantee to the handicapped child and his parents as they seek their true right to an education. The act further provides incentives to local school districts and states to provide preschool services to the handicapped. ("S.6 Becomes Public Law 94-142," p. 1)

Although solutions to this pressing problem are being written into legislative and legal decisions, this does not mean that the field of special education is facing an immediate full service posture. On the contrary, the tidal wave that many predicted after the 1971 decree in the Pennsylvania Association for Retarded Citizens (PARC) case never amounted to more than a "high tide" in states and regions where legislation had not been enacted or litigation had not occurred. What the field does face is the necessity for developing deliberate and qualitative procedures to implement not only the letter but the spirit of the law.

- Early in 1972, soon after the PARC decree was issued, the Bureau of Education for the Handicapped (BEH), in the Department of Health, Education and Welfare, the US Office of Education, moved to establish the cause of the severely handicapped as a national priority, taking strong actions to bring attention and resources to bear on this problem. Under the leadership of Edwin W. Martin, the priority was established to provide education to even the most severely handicapped child. The primary goal of BEH is to encourage the provision of quality instruction for all handicapped children (Martin, 1975).

While BEH may have been unprepared initially for the implications of the PARC decree, it immediately addressed the problem with its available resources so that, as states moved toward zero exclusion, assistance would be available. Beyond that, and more far reaching, the Bureau began to spotlight the education of the severely handicapped. BEH assumed a catalytic role through which it supplies productive professionals with funds that allow them to perform leadership activities (Martin, 1975).

Thus, there was generated a concerted effort to change some of the funding focus in order to give more attention to the severely handicapped. Major thrusts included preparation of professionals and paraprofessionals, research into the needs and processes of learning, and the development of educational technology for this population. Because this task is neither easily nor rapidly accomplished, and because the quality of training is closely related to the characteristics and philosophies of professors at the universities, the Division of Personnel Preparation was particularly interested in stimulating colleges and universities

to begin the training of personnel on all levels—paraprofessional through postdoctoral.

At the same time, a new BEH branch was created to fund model demonstration centers for the severely and profoundly handicapped. Moreover, various divisions in BEH used their power to convene meetings of specialists to bring attention to the problem. One of the most successful of these meetings convened in Princeton, New Jersey, in 1975 to develop research priorities in relation to the severely handicapped.

BEH took the initiative. It acted. This is a significant point, in that bureaucracies are so often maligned as being unwieldy and incapable of quick and viable response to the community at large. In this case, however, as a result of BEH leadership in concert with the field, special educators are in a better position than ever to begin to deliver quality services to severely handicapped children.

- As a result of the PARC decree, other litigation and legislation which followed, and BEH activism, a number of major developments have taken place. First, there can be no doubt about the change of attitude within the special education community. Most, if not all, of the major and most reputable special education training programs in the nation currently have, or are developing, programs for professionals who will relate to severely handicapped children. This attitudinal turnaround on the part of special educators has produced a similar change in the attitudes of thousands of public school officials.

Less evident perhaps, but prevailing, is the slow demise of what Brown, Nietupski, and Hamre-Nietupski (see Chapter 1) and others have called the "logic of homogeneity," or the conviction that severely handicapped individuals cannot function in heterogeneous community based environments, but that they require institutionalization or confinement. This misconception has diminished because it has been actively demonstrated that the severely handicapped can ride buses, can participate in community recreational activities, can function in self contained classrooms, can shop and eat and work in a variety of settings that are used simultaneously by the rest of the population.

Also indisputable is the success of early intervention programs. Projects under way at the University of Washington, the University of Miami, and the Madison (Wisconsin) Public Schools attest to the promise of work in this area, and lend credence to the imperative of providing comprehensive, longitudinal intervention programs in public schools across the country.

In regard to teacher preparation, when BEH initially responded to this issue in 1972, there was not one program in the United States which specifically prepared persons to work with the severely handicapped. Currently, such programs are developing with remarkable frequency and quality in every region of the country. Because a vast amount of professional talent has been directed toward improving services to this population, the area of the severely handicapped is emerging as one of the most resourceful in the field of special education, and in all probability, strategies found to be successful with these children will likewise apply to the more moderately handicapped.

- Technological progress and attitudinal changes are indeed sources of pride in accomplishment. However, much remains to be considered, to be discussed, and to be acted upon in both the full service and tech-

SUCSESSES TO DATE

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FUTURE CONSIDERATIONS

The traditional concept concerning what the severely handicapped can ultimately learn must be reexamined.

nological domains, and there is a major premise upon which all future action steps must be based. The traditional concept concerning what the severely handicapped can ultimately learn must be reexamined.

Educators must avoid statements that specify the limitations of this group of individuals. History has shown that, each time sweeping statements about other groups of handicapped students have been made, they have been wrong. For example, not long ago many borderline and mildly handicapped individuals were kept in institutions because among other reasons, it was thought that they could not function adequately in society. Today, however, the trend is to bring the borderline and mildly handicapped out of the institutions and place them in the community, where now it appears they should have always been.

Educators are now pondering a similar reevaluation of their stance regarding moderately handicapped individuals. Not long ago, there were many professionals who viewed the moderately handicapped individual as incapable of public school education. By means of a behavioral approach, a number of practitioners have demonstrated that this is not the case. In actuality, the moderately handicapped do profit from well designed educational experiences and do learn self help, language, social, and even functional academic skills.

Despite demonstrations to the contrary, such professionals as Burton (1974), Gearheart and Litton (1975), and some historical leaders in the field are still questioning whether academic achievement (i.e., reading, writing, and mathematics) can be attained by moderately handicapped children. The work of Haring (1976), Hayden and Dmitriev (1974), and Brown and his associates (Brown, Bellamy, & Sontag, 1971; Brown, Crowner, Williams, & York, 1975; Brown, Scheuerman, Cartwright, & York, 1973; Brown & Sontag, 1972; Brown, Williams, & Crowner, 1974) prove these positions to be wrong. As a result of early intervention, previously identified moderately handicapped children are presently functioning in regular kindergartens and elementary school classes with their "normal" peers of the same age. In the future, special educators will probably be saying that moderately handicapped children should have been in school with "normal" children, doing academic work, all along.

Any limited expectation by any professional concerning the learning potential of severely handicapped children is simply not supported by any sound empirical data.

The same things can be said about traditional beliefs regarding the severely handicapped. The fact is that any limited expectation by any professional concerning the learning potential of severely handicapped children is simply not supported by any sound empirical data. Given the right educational environment, these children can and do learn. But unless professionals avoid pronouncements about their limitations, they will perpetuate the same early patterns that were set for the borderline, the mildly handicapped, and the moderately handicapped child.

INSTITUTIONAL PLACEMENT

Institutional placement of the severely handicapped can never be appropriate.

- From this viewpoint, institutional placement of the severely handicapped can never be appropriate. In fact, institutions have presented the field and the children they serve with 100 years of documented failure and few instances of success, and the problems of institutionalization have been amply documented by Kugel and Wolfensberger (1969), Hobbs (1975), Blatt (1973), and many others. Nonetheless, the argument continues that, for some children, institutionalization will always be necessary: for example, when there is no family or foster care to support the child; when the family cannot emotionally or financially take care of the child; when the marriage or siblings suffer because a severely handicapped child is in the home; when the child requires

round the clock comprehensive management; when interdisciplinary care is needed and these services do not exist anywhere else; when a variety of specialists is needed and must be centralized in one place to serve a wide geographic area; when a severely handicapped child resides in a rural, remote setting and service can be provided only by helicopter or boat; or when the anatomical limitations of a child interfere with the success of an intervention program.

Regardless of these arguments, it is imperative to understand that we *do not need institutions*. This is true not just from an advocacy position, but also from a programmatic point of view. The field now has the beginnings of an effective technology. It also has access to programs that have been demonstrated to be effective in motor, language, and cognitive development, as well as in academic and social skills. Although it will be necessary to continue to generate new information, new programs, and further research, there has been a dramatic beginning in the public education of the severely handicapped.

Hobbs (1975), while making the case that most children can be served in the public schools, did not advocate total deinstitutionalization, but he did say that "the institution in our society that can serve almost all children without creating nonfunctional categories and isolating conditions is the public schools." Further, Hobbs described a model that may be quite useful in relation to the concept of the public school sector as having the primary responsibility for educating all handicapped children.

The recommendation that the public schools assume responsibility for ensuring comprehensive services to exceptional children has been advanced on several occasions before, and it has not met with widespread enthusiasm. The extreme and familiar positions can be succinctly stated. On the one hand, people responsible for the schools are appalled at the prospect of substantial responsibility for the full development of children who need much more than is ordinarily provided by school programs. Further, they are reluctant to assume responsibility for very young children, including infants and toddlers. On the other hand, representatives of such fields as health, mental health, and social welfare regard public school personnel as incapable of dealing with the complex and wide-ranging problems of the exceptional child, apart from his narrowly defined educational needs.

We regard both of these positions as unfortunate because they poorly serve the interests of children, both exceptional and normal. We challenge public school officials to accept fully their responsibility to provide instruction for all children of school age, including handicapped children. And we challenge opponents of the proposal to re-examine their arguments and test the optimistic hypothesis that giving responsibility to the public schools may provide a reasonable solution to a grave problem that has not been responsive to earlier recommendations. This may not be the best solution, but it is the best in sight.

The arguments for assigning to the public schools responsibility for coordinating services to most handicapped children from earliest identification through the school years are several and impressive.

Although it will be necessary to continue to generate new information, new programs, and further research, there has been a dramatic beginning in the public education of the severely handicapped.

The school is the one public agency normally responsible for helping the family induct the child into society. The principle of fullest possible participation by the handicapped child in the normal experiences of childhood favors the school as the most appropriate helping agency.

The schools already have responsibility for providing educational services to the majority of exceptional children; the services could be extended to include other required services and to include children of preschool age as well.

Once the special disabilities of exceptional children are attended to, their problems (apart from normal nurturing by parents, a need of great importance) are predominantly educational. Once glasses are obtained, a hearing aid fitted, or psychotherapy started, educational methods (ranging from speech therapy to remedial reading to socialization) must be brought into play. Schools have more competence in educating children than do other agencies.

Schools are geographically dispersed, and they serve total populations by geographical area, an essential requirement for a comprehensive service program for exceptional children.

Schools have buildings that are seldom used to capacity. Furthermore, space in school buildings will become increasingly available as a result of the declining birthrate. Use of school buildings to house comprehensive services for exceptional children would effect great savings in capital expenditures.

Parents and children are familiar with schools, their location, and their ways of operating. Educational leaders have for many years advocated "the community school," or the school as a locus or sponsor of many community-wide human-development activities. The proposal advanced here embraces this concept in the service of exceptional children.

Schools have a tax base in states and local communities.



The full array of services required by exceptional children from earliest identification on should not be dependent entirely on federal or private-sector funding.

We recognize that the public schools in some communities simply may not be able to carry the burden (and gain the educational advantage) of the responsibility here proposed. When the schools of a community are judged to be inadequate to the task, some other single agency should be formally charged with the responsibility. (Hobbs, 1975, pp. 199-201)

Although Hobbs' rationale for the expanded public school does not include the severely handicapped, it does show that there are many alternatives to institutionalization. The public school sector can use these alternatives; it can and should assume responsibility for delivering all public education agency service to handicapped children. If it is not possible for a particular child to live at home, alternate living situations can be provided, e.g., semi-independent group homes, foster parent settings, adoptive parents, and in relatively few cases, when 24 hour medical care is required, use of local hospitals.

- Along with an examination of institutionalization, there needs to be a review of the special school cluster. A 1973 article (Sontag, Burke, & York) examined the pros and cons of cluster and noncluster approaches to providing educational services to handicapped children. A new look at this article reveals its bias toward the myth that grouping similar children together will facilitate the provision of better services. The current mainstreaming movement has prompted a search for means by which such groups as the "trainable mentally retarded" can be integrated into many regular school activities. Educational technology is now at a point at which it can not only eliminate institutionalization, but also begin to plan to rule out special schools for the severely handicapped.

The best plan for the immediate future is to place severely handicapped children in self contained classrooms in regular school buildings, even though past attempts to do this have been complicated by various problems. The first problem was that of fear and ignorance on the part of administrators, teachers, students, and parents. Administrators were concerned about neighborhood reaction to the presence of severely handicapped children in their schools. Because they had lacked contact with these students, regular class teachers were frequently skeptical that the severely handicapped could benefit from education. Moreover, they questioned their own ability to handle "retarded" students and were apprehensive that these students would be placed in their classrooms without adequate support from special education. Students in regular classes feared that they would be harmed by handicapped children, and they lacked an understanding of why these children might "act funny," spell poorly, learn slowly, and display various other characteristics of their handicaps. Also, regular students would often tease and harass their handicapped peers. Parents of "normal" children sometimes reported their reluctance to let their children attend school with "abnormal" students and were also fearful that the severely handicapped would somehow harm their offspring. By the same token, parents of the handicapped also had reservations about placement of their children in regular schools, fearing that they would become objects of ridicule and physical abuse by other students.

THE SPECIAL SCHOOL CLUSTER

Educational technology is now at a point at which it can not only eliminate institutionalization, but also begin to plan to rule out special schools for the severely handicapped.

Placing severely handicapped children in self contained classrooms in regular school buildings is complicated by fear and ignorance on the part of administrators, teachers, students, and parents.

One of the most successful strategies for placing special classes in regular schools has been careful advance planning.

In the search for solutions to the problem of fear and ignorance, one of the most successful strategies for placing special classes in regular schools has been careful advance planning, including the careful seeking out of schools that have adequate space and that seem most willing to accept severely handicapped students. Questions and concerns of the staff should be elicited, so that inservice programs may be arranged to provide answers. Visits by staff and parents to classes for handicapped students should also be scheduled. Handicapped students, their parents, and their teachers can also make visits to the regular school to acquaint themselves with staff, students, and surroundings. Both special education and regular education teachers can talk with regular class students, answering their questions about handicapped children, and pointing out their strengths, as well as their weaknesses. The special education teacher should attempt to clarify to the staff the goals, methods, and programs planned for the special class. Integration can be gradual—minimal at first (e.g., lunchroom, recess, library) and, as these attempts become successful, expanded into such areas as music, art, physical education, and academics. Through these encounters, regular class teachers and students will become accustomed to the handicapped students, recognize their skills, and cease to feel threatened by their presence.

Another problem of integration has been insufficient space within school buildings.

A second major problem stemming from efforts at integration has been insufficient space within school buildings, but this may not be a problem much longer. Elementary schools throughout the United States are experiencing a dramatic decline in enrollment which could force many of them to close. Because special classes increase enrollments, administrators realize the advantage of including them in their schools; they may represent the difference between closing an elementary school or keeping it open.

In the still crowded middle schools and high schools, one can only attempt to find space wherever it exists, perhaps taking small and unattractive classrooms in back hallways or basements. However, as this school population dwindles as has that of the elementary school, more and better classroom space will become available.

In a few school districts, many severely handicapped children are today being integrated into the everyday activities of the public schools. How far can this concept be pushed? The answer lies in the field's acceptance of the tightness and necessity of the least restrictive educational environment. Once this is understood and accepted, it makes little sense to group the severely handicapped in homogeneous, unrealistic settings, which do not reflect a normal society. With careful planning and creative problem solving, all of our severely handicapped children can indeed be well served in self contained classes within the public schools.

THE PARENT-PROFESSIONAL PARTNERSHIP

The professional concept of "parent" must be reexamined, and professionals will have to produce more than rhetoric.

D Still another area that must be reviewed by the entire special education community is that of the parent-professional partnership. Educators need to examine further and learn to respond more effectively to parental reaction to the crisis of the handicapped child. The professional concept of "parent" must be reexamined, and professionals will have to produce more than rhetoric. As Scheuerman points out, parent training must broaden to include the entire family constellation (see Chapter 6). In the past, parent education has too often been solely "mother education."

Moreover, there must be an end to the myth that it is easier and

better to operate a school or classroom if parents are kept out. In actuality, the reverse is probably true, but the educational community does not generally recognize it. Therefore, those programs which provide a broadly based, individualized, and consistent program both at home and at school must be identified and replicated.

It must be recognized that parents can be effective teachers, not only at home but also in the school setting. Children are more likely to achieve at a higher level when their parents are involved in the educational process, and parents are more likely to become involved when they are served by professionals who have been trained to work with family members in divergent and appropriate ways. All training programs should make it a priority to provide significant course work and practical experience in the parent-professional partnership. Concomitantly, this training should open its doors to parents, as well as professionals.

Finally, the concept of citizen advocacy has existed in America for a number of years, and it has a particular application to the education of the severely handicapped. Some writers (Wolfensberger & Zauha, 1973) see advocacy functions as best served by volunteers outside the agencies and schools which were designed to provide services to the handicapped. They claim that workers within agencies and schools are subject to conflicts of loyalty between the needs of the client and the policies of the agency, and that only through independent volunteer advocates can the needs of handicapped individuals truly be met.

While there is a place for extra-system advocates, we can no longer afford only special, extra-system advocacy experts. Professionals within the educational system need to act as advocates in behalf of those they serve. In fact, one shortcoming of the "outside advocate" system is that educators can too readily assume that help will come from the outside and that those within the system can postpone or avoid their own conscious advocacy roles.

Paul and Neufeld (1974) and Neufeld (1975) have presented cogent arguments for the "within systems" advocacy concept, pointing out that within system advocates may have the advantage of being more aware of service alternatives available to the handicapped; that is, those within the field should be aware of the technology, programs, and materials that have proven effective with handicapped individuals. Thus, educators can serve as advocates by (a) attempting to provide students with the best educational services possible, (b) cooperating with existing educational agencies (schools, state departments, universities) to ensure that all children are served and served well, and (c) fully committing themselves to the development of new knowledge in the area of education for severely and profoundly handicapped individuals. As Edwin W. Martin (1975) has said, "I . . . urge each of you to be advocates for handicapped children not just through your professional activities, but by engaging yourselves as citizens in the development of more effective public policy" (p. 387).

D Developing personnel preparation programs for teachers of the severely handicapped is a complicated venture. On the one hand, most sections of the country report a demonstrated need for trained teachers and paraprofessionals to work with these children. On the other hand, there is an equally documented need to avoid the many pitfalls associated with the accelerated expansion of personnel preparation programs over the past 20 years for other disability groups. The priority of re-

Children are more likely to achieve at a higher level when their parents are involved in the educational process, and parents are more likely to become involved when they are served by professionals who have been trained to work with family members.

Professionals within the system need to act as advocates in behalf of those they serve.

PERSONNEL PREPARATION

There is a need to avoid the many pitfalls associated with the accelerated expansion of personnel preparation programs over the past 20 years for other disability groups.



sponding to a need cannot be fulfilled by choosing either to urge rapid development of training programs or to adopt the more long range objective of developing sound, empirically based, well staffed, fiscally feasible, and public school based programs of preparation. It is also important that a cautious strategy not be used in any way to delay the provision of full service quality education for all handicapped children.

The BEH funding pattern for new programs has resulted in a slow but steady acceleration of empirically based training programs of singularly high quality.

Through its Division for Personnel Preparation, BEH has elected a multifaceted, multidimensional plan for responding to teacher preparation issues. Since 1972, when this area became a funding priority, the funding pattern for new programs has resulted in a slow but steady acceleration of empirically based training programs of singularly high quality.

Although doctoral training programs have been funded in institutions which had the resources to shift into the area of the severely handicapped, the slow development of doctoral training has been extremely frustrating in the past but is beginning to yield dividends. In areas with acute needs for preservice and inservice training, BEH has exercised unusual leadership. For example, in Maryland, the state education agency was awarded a training grant with both preservice and inservice components, because no university offered an operational training pro-

gram in the area of severe handicaps at the time of the Maryland decision in 1974. In cooperation with the Maryland State Department of Education, BEH facilitated technical assistance by requesting some of the projects it was currently funding to provide immediate but longitudinal assistance not only to Maryland's State Department, but also to its institutions of higher learning which expressed interest in the development of training programs. In addition, leadership personnel in Maryland were enrolled in special BEH funded projects designed to provide short term training. As a result of this unique partnership, Maryland is now in a better position to begin serving all handicapped children.

The recent history of personnel training shows that earlier manpower preparation models will not suffice for training teachers of the severely handicapped. Rather, both general education and special education must take a new look at their previous assumptions and commonly held assertions:

Traditional concept of teacher skills. Documentation from states and local school districts that have begun moving toward full service for all testifies to the need for teachers of very high quality to work with the severely handicapped. These teachers must possess many more skills than the teacher who works with less disabled children. The complexity of the severely handicapped student's physical, mental, and emotional makeup require a repertoire of skills that few traditionally prepared special educators can claim.

Short term retraining. Some special educators have tended to move with each new wave of change that sweeps the field. Professionals have become specialists in mental retardation, then specialists in brain damage, then specialists in learning disabilities. While this interest in and emphasis on emerging national priorities has some justification, it is unfortunate that actual methodology has changed very little. In some cases, all that has changed is the area of concentration. The technology, the curriculum, the teaching methods, and the people have remained essentially unchanged, and the models employed to retrain both regular and special educators have been less successful than they might have been. In addition, we must be aware of individuals who have moved from one area to another, and may elect to move into the area of the severely handicapped without a track record of success in previous endeavors.

There must be retraining of both direct service and teacher training personnel, but the old short term model of 6 weeks at the local university is simply not going to suffice for the adequate retraining of teachers to work with severely handicapped children. The children we have chosen to serve need the best that special education has to offer, not the most flexible career "quick change" artists.

Preservice training. When immediate delivery of services for the severely handicapped is incumbent upon states or districts, we must be prepared with training models that have reconceptualized and blended the best features of both preservice and inservice training. This reconceptualization may call for the training institution to move its preservice training program into the local public school district. Although this approach may seem revolutionary to a university, it can provide training for existing personnel, increase the service dimension of the institution of higher education, and provide more relevantly trained teachers and other members of the educational team.

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The old short term model of 6 weeks training at the local university is not going to suffice for the adequate retraining of teachers to work with the severely handicapped.

The training institution may be called upon to move its preservice training program into the local public school district.

Teacher competencies. Inservice and preservice models must articulate and incorporate specific competencies for teachers of the severely handicapped. In addition to competencies of a general nature which must be extrapolated, nontraditional competencies such as those outlined by Bijou and Wilcox-Cole (1975) will be essential:

Teachers must in fact be trained to deal with a whole range of behaviors that have rarely been the concern of the public schools. They must be prepared with programs for toilet training, for eliminating self-destructive and self-stimulatory behaviors, for teaching eye contact and imitative responding, for teaching community survival skills, and so on. These very special teachers cannot be content nor limit themselves to giving training in verbal behaviors—the traditional reading, writing, and arithmetic—that may guarantee success in the latter school environment. Clearly, the traditional three R's are not enough. The curriculum must be inclusive: teachers must be prepared with the skills to teach students to survive in the world from the moment they wake up in the morning until they go to bed at night. When we deal with the severely retarded, the behavioral deficits and developmental needs of each person, rather than the dictates of the school board, become the curriculum.

In addition to acquiring expertise in goal selection or curriculum, a well trained, effective teacher must be taught the other critical components of the behavioral teaching format: assessing behavior, keeping records, altering programs in response to student performance, and programming for the generalization and maintenance of the learning acquired, (p. 21)

A major effort is necessary in postdoctoral training for those who train teachers.

Postdoctoral training. A major effort is necessary in postdoctoral training for those who train teachers. "The first step in the preparation of teachers for the severely retarded might be to modify the behaviors of teacher trainers in colleges and universities" (Bijou & Wilcox-Cole, 1975, p. 22). It will be highly desirable to provide intensive and longitudinal retraining for those special educators who have been thrust into training and leadership roles.

THE FUTURE

Landmark litigation and legislation such as Public Law 94-142 give more than just hope for what the future holds.

- Landmark litigation and legislation such as Public Law 94-142 give more than just hope for what the future holds. For example, that law includes:
- A new entitlement formula which will go into effect in fiscal year 1978. Under this new formula, states will be entitled to receive an amount equal to the number of handicapped children 3 to 21 years of age receiving special education and related services, times a specified percentage of the average per pupil expenditures in public elementary and secondary schools in the United States. The percentage of federal aid will grow from 5% in fiscal 1978 to 10% in fiscal 1979, 20% in fiscal 1980, 30% in fiscal 1981, and 40% in fiscal 1982 and succeeding fiscal years.
- A separate authority to encourage states to serve children between 3 and 5 years of age. States will receive up to \$300 for each child served within this age range. Per capita grants will be ratably reduced if appropriations are insufficient in any fiscal year to cover the states' full entitlements.

- Assignment of first priority to unserved children and second priority to severely handicapped youngsters who are not receiving adequate services. The conference committee on the legislation emphasized that it did not intend that "any one or two categories of disabilities be recognized ... as the 'most severe' categories, but rather that an attempt... be made to reach and provide appropriate services to children with the most severe handicaps *without regard to disability category.*"

However, this chapter in the history of special education is yet unfinished. Much work remains for the professional community if the severely handicapped are to make their way in the public schools. There is almost unanimous agreement that the work of the future must include early intervention, teacher training programs of high quality, relevant applied research, and the development of adequate evaluation and assessment procedures. But these are not the only activities worthy of consideration in the search for ways to improve the life space and life style of the severely handicapped child. Beyond these clearly productive areas of major effort lie a number of additional propositions. Exploratory projects in research and development may not yet have unanimous support or may not yet be adequately conceptualized, but they cannot be dismissed. Rather, they should be understood and evaluated. Among the more important of these propositions are:

Secondary education. Critics of public education for the severely handicapped often question the long range results of the effort. It is only as the severely handicapped individual approaches adulthood that such results can be realized, through positive vocational outcomes and relative self sufficiency. Therefore, models for teaching the adolescent and adult individual who is severely handicapped are urgently needed.

In terms of vocational education, programs should push for the most competitive and realistic job training. For example, students should learn to deal with money, not with artificial reinforcers that are not found in the community. The program should emphasize self initiated job related skills, such as transportation to and from work and what to do during coffee breaks. Students should be taught the realities of the world of work, such as being penalized for tardiness.

In addition to vocational skills, the severely handicapped need to learn a range of skills involved in normal living, for example, interpersonal behavior, transportation, domestic living, stores and services, and leisure. Toward this end, academic work may become more functional, e.g., learning to add and subtract through the use of actual checkbooks or reading stories about the things one does when going to the store.

Initial early educational programs for the severely handicapped should be designed to prepare the individual for learning vocational, practical, and interpersonal skills. In turn, secondary education should prepare him to live, love, and work to the utmost of his potential.

Use of ancillary service personnel. To offer the severely handicapped student the broadest range of effective services, it will be necessary to blend the work of the teacher with the work of a number of other disciplines. A first step in this direction is to train teachers to ask the right questions when dealing with physicians, physical therapists, speech clinicians, and others. A second step is to establish master's level training programs for professionals from other disciplines. The objectives of such programs should be to develop an understanding of the characteristics of the severely handicapped and the specific methods

Exploratory projects in research and development may not yet have unanimous support or may not yet be adequately conceptualized, but they cannot be dismissed.

Initial early educational programs should prepare the individual for learning vocational, practical, and interpersonal skills. Secondary education should prepare him to live, love, and work to the utmost of his potential.

Master's level training programs should be established for professionals from other disciplines.

and techniques involved in teaching them and also to orient these professionals to working within the classroom, instead of removing students for individual therapy.

Classroom research. The objective gathering of data is the only key to the development of programs and materials for teaching the severely handicapped. There is far too much that educators do not really know about learning in general, and about the learning of the severely handicapped in particular. Although the bulk of educational research into these areas is carried out at the doctoral level, these individuals are not always involved in the day to day learning activities of the severely handicapped. The bulk of teaching is carried out by people at the bachelor's and master's level. However, because of lack of training, lack of encouragement, or lack of time, these people are not usually involved in research.

Teachers must be trained to carry out classroom research and, equally important, view their research as meaningful, competent, and publishable.

Teaching strategies that facilitate generalization must be developed. Also, master's level teachers must be trained to carry out classroom research and, equally important, to view their research as meaningful, competent, and publishable.

Practitioners can help to solve the problem of the expense of prosthetic devices.

Development of adaptive and prosthetic devices. Many severely handicapped individuals who are presently unable to perform certain necessary tasks could rapidly learn to do so with the aid of a simple device. While some prosthetic devices are available commercially, many are prohibitively expensive. Practitioners in the field can help to solve this problem by developing simple devices for their students (e.g., a belt attached to rubber strips for head control, as opposed to the expensive, calibrated, precision made head control device), by disseminating information about making and using such devices, and by marketing them for wider use at a small cost.

A well run system of technical assistance centers could speed program development by years.

Technical assistance network. As professionals at all levels of special education make progress in filling these gaps in our knowledge and programing, a well run system of technical assistance centers could speed program development by years. This network should offer practical advice to school systems and institutions of higher education and should incorporate intensive dissemination activities designed to get products out rapidly and at little or no cost to the service people who need them.

DECISION AND DISCOVERY

After a long history of providing for the average child, public education is beginning to see itself as a full service community agency.

The problems, solutions, and directions that have been reviewed show that the field of special education is finally coming to grips with its real reason for being—the education of all children. Simultaneously, after a long history of providing for the average child, public education is beginning to see itself as a full service community agency.

That we have advanced this far is a credit to the teaching profession, to thousands of parents, and to the American public in general. We have decided that we shall serve all children, but we have not yet advanced very far beyond the point of decision.

What remains is the discovery of the myriad ways to enhance the lives of all severely handicapped persons. The public schools will be the vehicle. The technology remains to be fully developed by special educators, from the teacher's aide to the professor.

The past is prologue. The events of the past five years have made special education once again a new field. Special educators have the opportunity and the challenge of creating their own professional futures and of helping to ensure that the potential of all handicapped people is recognized and realized.

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service of research

william bricker

Key Ideas

- *Statistical evaluations of group data are secondary to the clear demonstration that the behavior of individual students has changed significantly and that the change can be attributed to the activities of teachers or parents.*
- *The prevailing goal of educational research with the handicapped is to find ways of improving the instructional process.*
- *Although there is a need for more experimental research than descriptive research, humanitarian considerations about the welfare of a child must always take precedence over the possible scientific benefits of an experimental hypothesis which is tested by manipulating the child's environment.*
- *One crucial need in the area of research is to examine how concepts are acquired and can be taught to the severely handicapped.*

- A relatively naive layman could, when hearing the term *research* as a descriptor of professional activity, take the term literally and ask the simple question, "Have you lost something?" The question could be turned a bit into the form, "Is there something that you need to find?" The latter question constitutes the underlying theme in this chapter.

The target for the question is the educational program for a group of people who are between birth and approximately 25 years of age and who have been identified by some segment of society as handicapped. What needs to be found is a system of education that will allow these people to function without any *unnecessary* disruption from their handicapping condition in existing communities throughout the world. This means that the search of a research effort is for the most effective means of bringing each person to an optimum state of normalization within the limits of the unchangeable aspects of the handicap and to do so through the process of public instruction.

A question that must be asked before embarking on a description of research efforts that might achieve this difficult goal is whether the knowledge base for making this possible already exists and all that needs to be done is to translate this knowledge into educational practice? The answer appears to be self evident, although particular researchers, teachers, or therapists would answer it differently. In general, they would probably agree that there is not sufficient knowledge about human development and the educational process to maximize the normalization potentials of the majority of people now labeled as handicapped. Consequently, there appears to be a need to continue the search for effective educational programs. Justification for this conclusion is contained in several of the following sections.

- Before launching into specific topics, one of the important prerequisites to a discussion of research needs for the handicapped is a basic definition of research itself. In the domain of handicapped children there are at least five major dimensions by which particular forms of research can be defined.

The first dimension is the contrast of biomedical and behavioral research. For example, in the investigation of Down's syndrome, one group of researchers may be trying to find easier ways to establish the existence of an extra chromosome in the fetus than the dangerous use of amniocentesis; another group may be trying to determine the best method for teaching language to children who are born with the extra chromosome. The former group has training in biological analyses and medical interventions while the latter has methods for studying the behavior-environment interaction in order to determine optimum environmental arrangements.

The second dimension is the basic versus applied division. This dimension is not so easily defined. However, for purposes of this discussion, basic research is defined as those activities which attempt to determine the effects of particular independent variables on a particular dependent variable. Within biomedical research this might have to do with determining the specific metabolic effects of trisomy; in behavioral research it might involve study of the effects of hypotonicity of the Down's syndrome child on learning a particular task, such as a two choice discrimination problem.

In applied research, the process is reversed. The dependent variable becomes critical in applied research while it is practically irrelevant in basic research. In basic research any reasonable prototype such as pressing a lever, touching a press panel, or emitting the name of a

BASIC CONCERNS

The search of a research effort is for the most effective means of bringing each person to an optimum state of normalization.

There is not sufficient knowledge about human development and education to maximize the normalization of the handicapped.

DIMENSIONS OF RESEARCH

The first dimension is the contrast of biomedical and behavioral research.

Basic research is defined as those activities which determine the effects of independent variables on a dependent variable.

In applied research, the dependent variable becomes critical.

particular object can become the dependent variable against which the importance of the selected independent variable is assessed. In applied research normal language (or other human process) is the goal and the search is for the sequence of manipulable independent variables that will bring normal language into existence with a handicapped child who would probably not acquire normal language without such manipulations. This is an important distinction in that much of the existing research literature cannot be adequately interpreted without looking at the basic or the applied purpose of each investigation.

The third dimension is along the lines of descriptive versus experimental research. In the former, a particular developmental process is defined according to the age of appearance of certain forms of behavior such as the use of conjunctions in language. Children of different ages are given various tests to elicit the use of the conjunction; the outcome of the research may indicate that children of 2 to 3 years of age do not use the conjunction while children over 4 typically do. Most of the studies in developmental psychology are of this type (e.g., Bruner, 1975). Experimental research involves manipulation of the environment in order to determine the effect of particular instructional events on the acquisition of a particular form of human behavior. Much of the research in the applied analysis of behavior (Baer, Wolf, & Risley, 1968) is of this type.

This descriptive versus experimental dimension is one of the more important dimensions in that the major theoretical battles appear to be fought on the basis of the two types of data. Cognitive psychologists use descriptive and correlational data to affirm that particular types of environmental events such as reinforcement are not necessary for acquisition of human behavior (Brown & Hanlon, 1970) while others demonstrate experimentally how operationally defined reinforcers function in the acquisition of the same process (Guess, Sailor, & Baer, 1974). More will be said about this dimension later.

The fourth important dimension is between theory based and non-theory based research efforts. Many of the behaviorists (Skinner, 1959; Sidman, 1960) tend to reject theorizing until there is a sufficient factual basis for the inductive emergence of a set of basic principles. These experimental investigators are joined by another group of descriptive atheoretical psychologists who attempt to observe behavior in natural settings under the heading of ecological psychology (Barker & Wright, 1955; Barker & Schoggen, 1973). On the theoretical side of this dimension, there are a number of experimental types (Belmont & Butterfield, 1971; Baumeister, 1970; Ellis, 1971; Call & Switzky, 1975) as well as some descriptive researchers (Brown, 1973; Schlesinger, 1974; Eimas, 1974). The issue of theory versus nontheory in research is sufficiently important in my view that a major section is devoted to it in a later portion of this chapter.

The final dimension of research is cross sectional versus longitudinal. In cross sectional research a particular process such as the relative value of specific reinforcers (Orlando & Tyler, 1966), the acquisition of the negation response (Miller, 1970), or learning the basic number concepts (Williams, et al., 1970) becomes the focus of research over a relatively short period of time. In the typical study of the cross sectional type, children of different ages surrounding the probable time when the concept is to be learned or tested are selected and then trained over a period of days. The targeted criterion performance usually represents only a small sample of the total concept and may

often be a contrived (prototypic) form of the concept. In longitudinal research, the children who are acting as subjects will be enrolled in a program for a matter of many months and sometimes years (Bricker & Bricker, 1973) while the effects of various instructional approaches are assessed. Since educational interventions occur over periods of months rather than days, longitudinal research may provide the better model.

As each of these dimensions is considered in relation to the educational problems of handicapped children, certain decisions can be made. First, educators are not generally trained in biomedical research nor can they prescribe medical interventions. Consequently, the educator must trust the medical person to do what is best for the health problems of the handicapped person while focusing on how environments can be modified to improve the behavioral development of these children and young adults. Therefore, there will be no further mention made of medical research needs in this chapter.

Second, while a knowledge of basic research findings is essential to applied research, the goal of educational research with the handicapped is to find ways to improve the instructional process. To do this, research must become increasingly focused on how to structure the sequence of instructional acts so that the "maximum potential" of each handicapped individual is indeed reached. Therefore, applied research is emphasized in this chapter.

Third, since education is always a form of intervention, there must be more emphasis on experimental research rather than descriptive research. This is a critical decision when dealing with handicapped people since much of the existing descriptive research that forms the basis of frequently pessimistic predictions about the futures of handicapped children have been derived from sterile environments such as large residential institutions (Ellis, 1971; Hobbs, 1975). Consequently, the emphasis in this chapter is on active intervention rather than passive description.

No clear conclusion can be drawn along the dimension of theoretical versus nontheoretical research. The issue can only be evaluated in the application of research within specific content domains.

D Skinner (1959) remarked that most research design has tended to foster a closer relationship between a graduate student and a calculator than between a student of behavior and a behaving organism. Although this may be an unfair overstatement of problems in the application of the experimental method, it does point in the direction of some needed reforms in program design that will accommodate the relationships between environmental events and the behavior of handicapped children. The ethics of research and the characteristics of the people being studied are no more strongly intertwined and the need for extreme caution is no more evident than when one deals with the handicapped person.

Here, as in few other domains of intervention effort, one must follow the primary ethical dictum of medical practice by agreeing that first, *one will do no harm*. Children must not be deprived of food, subjected to physically aversive conditions, or made uncomfortable in any other way unless the teacher or researcher is *absolutely* positive that these procedures provide the best possible techniques for altering the behavior of the child in a positive direction. Consequently, when one is in doubt about the advantages of a specific manipulation in the environment of a child, the humanitarian considerations about the welfare of

Since educational interventions occur over long periods, longitudinal research may provide a better model than cross sectional research.

TRENDS IN RESEARCH DESIGN

The ethics of research and the characteristics of the people being studied are no more strongly intertwined than when one deals with the handicapped.

the child *must* take precedence over the possible scientific benefits of a carefully validated hypothesis. When one can justify the need for intervention with children, he must approach the issue being studied from within the framework of the child's construction of reality rather than from an adult, professional perspective. Thus it seems that research demands a relatively alterable program design.

The design alternative that is being proposed is both novel and untested in the context of the educational domain. Although one can identify the forms of behavior that typify the successive stages of human development, the prerequisites of each form of behavior or the instructional mechanisms that can be used to stimulate development in that area are typically not well specified.

- The first generalization that can be applied here is that when a child knows what he is requested to do, he will do it willingly and quickly unless he is asked to do it too often. Program (and motivational) problems seem to creep in when the child does not have the behavioral repertoire that is required by a given task. Program design must deal with this issue in a manner that does not oppress the child or require excessive deprivation or punishment. These considerations have led to the development of the test-teach research approach proposed in this chapter.

The test-teach approach starts with an overview of the domain being covered by the system. This overview can be represented as a developmental program lattice. For example, a lattice covering the sensory motor period from birth to 2 years is represented in Figure 1. The lattice indicates the progressive forms of behavior that move the child from reflexive responding to preoperational and intentional behavior.

A screening instrument has been developed to locate the child within this developmental structure in the various areas that appear most related to important cognitive and prelinguistic structures. This instrument was constructed from several available scales including the Uzgirish-Hunt Provisional Instrument (1966), the Albert Einstein Scales (Escalona & Corman, 1966), the Bayley Scales (1969), Gesell Developmental Scales (Gesell & Armatruda, 1949), and other items added by my colleagues (e.g., Robinson, 1972) based on Piaget's description of the sensory motor period.

The child's responses to the tasks contained in the instrument provide a basis for determining the types of interaction between ongoing behavior of the infant or child and various objects or environmental events that are developmentally relevant and important. The child is then placed in contact with these objects or events over a period of a few days and careful observations are made and recorded to determine his mode of reaction. These observations then form the basis of a specific test-teach paradigm.

The test-teach system begins with the materials and events that are immediately relevant to the development of the child. For example, the object permanence domain specifies a sequence of progressive developments from the point where the child ignores any object that is not immediately and physically present to the point where he wants objects that he has not seen for some period of time and initiates a search for the object in his home or in the classroom. This sequence of developments has been latticed by Robinson (1972), and the lattice provides the description of what materials and manipulations can establish the perspective of the child concerning the permanence of objects and what specific alterations in the task might stimulate progressive development.

When one is in doubt about the advantages of a manipulation, humanitarian considerations must take precedence.

THE TEST-TEACH APPROACH

The test-teach approach starts with an overview of the domain being covered by the system.

The test-teach system uses materials and events immediately relevant to the development of the child.

don't forget about me!

The test system leads directly into the teaching phase.

In this way, the test system leads directly into the teaching phase, and both phases may be repeated several times in a single instructional period. At this level, the system provides an instructional technology which, if it is working properly, requires no other support. However, if the system does not appear to be working (and this is quite frequently the case with developmentally delayed children), then the system is moved into the investigative domain, and a strong inference approach (Platt, 1964) becomes applicable. The program research process being proposed is not related to most conventional designs so that its mode of application requires specific detailed description.

The observable interactions between child and environment provide only the raw data for more important generalizations.

The observable interactions between the behavior of a child and his environment provide only the raw data or phenomena which form the basis for the more important and more interesting inferences and generalizations about the child. For example, a teacher may see a child open a cupboard door and then take out a toy and play with it. This phenomenon gives the teacher one data point in arriving at the inference that the child "has" the structure defined as the object permanence concept. But this is only one possible explanation of the child's behavior. He may simply like to open doors, and when he does so, he sometimes encounters interesting toys. This may have been a specifically trained act such that toys hidden anywhere else are not discovered and the child will look in no other hiding place for any object not clearly in view. Opening the door may have been a direct imitation of an immediately antecedent model which was not observed. There may be other possibilities for the observed action of the child and the application of a strong inference model requires that all reasonable possibilities be listed.

After the possible explanations of a child's action are listed, situations can be contrived to determine the best explanation.

After the possibilities are listed, situations can be contrived in the classroom and elsewhere to determine which possibility offers the best explanation of the behavior. Platt contests that this may be most reasonably done by determining how each explanation or hypothesis about a child's behavior could be disproven. This requires that the contrived tasks not only allow for altered demands on the child's object permanence system, but also that the possible outcomes be considered in advance of the various explanations. This will tend to move the selection of the preplanned manipulation of the situation in the direction of providing the greatest amount of information about as many explanations as possible.

In the case of object permanence concept, a special type of hide and seek could be contrived using a toy which has a high probability of use by the child. The toy is then placed in one of several cupboards in a relatively uninteresting room. The child is encouraged to find the toy but without indicating the cupboard that it is in or even that it may be in one of the cupboards. If the child moves directly to the cupboards, systematically opens one after another until the toy is found, and then takes the toy and proceeds to play with it, his behavior clearly discredits several of the previous explanations of his behavior. However, if he would move to the cupboard closest to him and simply open and close the door several times without regard for what was inside, one could believe his preference for opening as compared to searching. However since the child did not repetitiously open and close the door, this is not a reasonable explanation.

Similarly, the requirement of an imitated model would also be discredited as would the explanation based on a single trained response chain (different rooms, different cupboard, different toy). There could

have been many other outcomes, but each would have some relevance to the proposed explanations. Unexpected responses might require that additional possible explanations be added to the list. Additional manipulations could then be done with the toys in order to determine the creditability of the various explanations, and the one receiving the greatest amount of positive support with few instances of negative evidence would become the strongest explanation or inference of the child's behavior. If the most strongly supported explanation was not the one defining the terminal behavior in that area (i.e. the child "has" the object permanence concept), the information gathered to this point would provide a basis for giving the child additional experience to extend the boundaries of his behavioral repertoire.

To those who are trained as teachers, this method of working with children might be viewed as an interesting one for teaching children important concepts but not as a scientific approach to concept formation or child development. Even those scientists who are trained in using individual subject designs might have difficulty understanding how this method leads to general insights about behavior and behavior development. The first defense of the method would be in terms of the multiple hypothesis versus the single hypothesis approach to research design which Platt (1964) indicates is the major difference between research in microbiology and many other sciences. Educational research is notorious for research investigations of one hypothesis at a time.

For example, in the field of mental retardation research, there are such hypotheses as stimulus trace deficit (Ellis, 1971; Baumeister, 1970), rehearsal deficit (Ellis, 1971), short term memory deficit (Belmont & Butterfield, 1971), reinforcement history deficit (Bijou, 1963), and many others. Each has a primary sponsor, and each is tested in a variety of settings or in an exact way by a number of different researchers (Can the support for an hypothesis be replicated by someone other than the sponsor?). Tests of the hypothesis are made using groups of children usually in contrived laboratory situations and the results are frequently difficult to interpret (e.g., Sidman, 1960). In my experience in attempting to do research with retarded children, the outcomes of a group design are difficult to interpret because for some children the "reinforcers" do not reinforce, the manipulations are viewed in different ways by different children, entering response topographies of the children vary in substantial but unindexed ways, etc. In essence, there must be a better method for doing research on developmental processes of retarded children.

- Another model that must be considered is the individual subject approach used in much of the research covered by the experimental analysis of behavior. In retardation, much of the single subject research is done in terms of a behavior modification strategy. The method used is to find a set of discriminative and reinforcing stimuli with which the behavior of the child can be brought under experimental control and then manipulated in various ways in order to clearly indicate the functional relationships between the independent variables and the selected dependent variable. The rate of occurrence of the selected response may be first increased, then decreased, and finally increased to the desired level in what is called the reversal design.

An alternative method, called multiple baseline, involves the selection of several response classes which are recorded together. After sufficient baseline has been established, one member of the set is altered

Unexpected responses might require additional possible explanations.



AN INDIVIDUAL SUBJECT APPROACH

In retardation, much of the single subject research is done in terms of a behavior modification strategy.

One problem with this research is that when transfer is made to less arbitrary reinforcers, the responses extinguish.

When complex shaping procedures are used, any single subject design becomes extremely difficult to apply.

STRONG INFERENCE APPROACH

Recorded observations provide the basis for generating all possible and reasonable explanations of the child's behavior.

As these are tested, particular explanations will become increasingly more plausible.

The analysis will also provide information about the child's intrinsic reinforcement system.

(at least an attempt is made to do so), and if change occurs only in this one, the functional relationship is established. A second member of the set is then selected and attempts are made to alter its frequency, again with the remaining responses used as a control set. The procedure is repeated until all members of the selected set have been modified in the predicted direction.

One of the problems often encountered in this research is that extrinsic reinforcement systems are used as part of the functional relationship, but when transfer is made to less arbitrary reinforcers, the responses extinguish (e.g., Lovaas, 1968). The strong inference model would build on many of the strengths of the single subject procedures but would hopefully extend the benefits of the manipulations into more typical (less laboratory like) environments. The need to do this has been indicated by Ferster (1972).

Another problem with behavior modification procedures is that they are easily applied when the responses to be modified are in the repertoire of the child as in the case of an undesirable form of behavior that is to be decelerated or a form of behavior such as solving arithmetic problems which may exist but has an extremely low rate of occurrence. When complex shaping procedures are used, any single subject design becomes extremely difficult to apply for reasons which I have described elsewhere (Bricker, 1970).

- The strong inference approach deals with many of the problems associated with both hypothesis testing group design methods and the behavior modification, single subject designs. First, the screening instrument provides a general locator system for placing the child in some area of developmental progression in each of the structures involved in the system (visual tracking, object permanence, use of tools, physical causality, organization of space and time, functional use and classification of objects, seriation, and foresight). The child is then assessed in the various areas using modification of Piaget's methodology clinique (1967) to determine more precisely how each child functions in various alternatives of the problem domain.

The recorded observations taken during this systematically varied methodology provide the basis for generating all possible and reasonable explanations of the child's behavior (the what, when, where, why, and how of the child's response system). As these are tested (through additional manipulations of relevant materials and events), particular explanations will become increasingly more plausible, and these can be even more specifically evaluated. As the procedure is repeated across domains for a given child, there may be only a very few explanations that are necessary to account for his successes and failures. These explanations will generally refer to problems in certain prerequisite behavior systems. The analysis will also provide information about the child's intrinsic reinforcement system and the forms of environmental stimulus control that are operative in determining the specifics of the child's behavior. This information can then be used to generate instructional plans that can be used to stimulate development in the defined areas.

Failures of the plan to work would generate multiple alternative explanations which would then be tested systematically. The resulting data from both the assessment phase and the instruction phase would be pooled as a systematic case study in human development.

As the system is used across children, the replications of findings in particular domains and at various levels within a domain would be analyzed and used to determine the generalization possibilities of information coming from the individual case studies. The system then combines methodologies including observational methods, clinical method, and experimental manipulations. Explanations must be disprovable before they can be included and all terms used in the system to describe the child's behavior must be operational in that they involve processes and events that are observable by two or more people. Since explanations are inferential in nature, the proof or disproof of a particular explanation would be based on logical analyses of empirically established probabilities.

If all measures were reliable both in terms of interrater agreement and on a test-retest basis, then the results could be combined and analyzed using standard statistical procedures including analysis of variance and multivariate analysis. If several of these investigations were videotaped, various types of sequential analyses could be made from the data. However, statistical evaluations of the data are secondary to the clear demonstration that the behavior of the students has changed significantly and that the change can be attributed to the activities of teachers or parents.

- There is another issue here and that involves the content of research. What should be researched in the area of severe and profound handicap? Obviously, the research should be in the basic processes of movement, initial social development, beginning language, and other processes that form the important prerequisites for subsequent complex forms of human behavior. However, much of this research can be theory based in that a system for training is based on a prior conception of what the child is learning and why what is learned will generalize. I have taken one example of an area that is in need of research and attempted to indicate how research in concept acquisition would be based on a theoretical formulation.

- One of the most crucial areas of research that needs to be quickly moved forward is in the area of concept acquisition. In this area, there is a need to find a new method for defining and training concepts. This section of this chapter is used only to spell out the problems involved in concept acquisition and to structure a rather hazy picture of a workable alternative.

The definition of a concept requires at least the following features:

1. Only a limited number of specific exemplars of a particular concept must be explicitly taught before a child can generalize to an almost limitless number of untrained members of the class.
2. The class must have a hierarchical relationship with both subordinate and superordinate classes when this is logically possible.
3. Any class can have specific members that are simultaneously members of other classes and they can be so assigned by the child.
4. The child will respond to particulars as members of classes in the areas of phonology, objects, actions, object properties, people, other animals and plants, space, and time. This is no small achievement and one that is most in need of research.

The complexity of the problem is sufficiently large that more than a couple of paragraphs must be used to describe it. A relatively recent

Explanations must be disprovable before they can be included, and all terms used must be operational.

THE QUESTION OF RESEARCH CONTENT

Research on the severely handicapped should be in prerequisites for subsequent complex behaviors.

The area of concept acquisition is used here as an example of how research can be based on a theoretical formulation.

RESEARCH ON CONCEPT ACQUISITION

One of the most crucial areas of research is in the area of concept acquisition.

A paradox of this area is the impossibility of recognizing a member of a concept class unless one has prior knowledge of the concept itself.

article by Weimer (1973) enunciated the problem dramatically. Basing his scholarly discussion on two of Plato's paradoxes as represented in the Meno, Weimer concluded that knowledge of abstract entities (concepts) and the ability for "productive" or "creative" behavior must be innate. In reference to abstract entities, Weimer indicated the impossibility of recognizing a member of a concept class unless one has prior knowledge of the concept itself. He stated:

Factual relativity guarantees that one cannot simply go out into the world and neutrally collect facts. Without a prior conceptual framework, that is, a point of view from which to impose order upon reality, there is only the changing phenomenal flux of experience the 'blooming, buzzing confusion' of William James. The data of sensation do not come with little tags attached proclaiming their factual status. Observation is not merely focusing one's attention on the data, but rather assimilation of data into the conceptual scheme of the observer, (p. 20)

This leads to a restatement of Plato's paradox, namely: "We cannot learn (come to know) anything unless we already know (have learned) it."

A second paradox asks, "How can one exhibit knowledge for which one's prior learning history has given no preparation?"

Weimer then turned to linguistic theory to supply the basis for the second paradox which involves creative production. In Chomsky's linguistic position, a theory of language must provide a suitable explanation of the novel but appropriate use of language. This involves "the speaker's ability to produce new sentences, sentences that are immediately understood by other speakers although they bear no physical resemblance to sentences which are 'familiar'" (Chomsky, 1966, p. 11). The second paradox derives from this point and asks the question: "How can one exhibit knowledge for which one's prior learning history has given no preparation?" (Weimer, 1973, p. 25).

Weimer presented several attempted solutions to these paradoxes, including Aristotle's doctrines of nominalism and associationism. On the basis of his evaluation of both the data and the logic that are dependent on the principles of associationism (virtually every learning theory uses them), he believed that they are inadequate in accounting for complex human behavior. Weimer concluded the article by urging a return to the basics of Plato's thinking and proceeding from that point with clear recognition of innate abstract entities.

One approach to concept acquisition has been through receptive language training, often beginning with a two choice paradigm under the heading of learning set.

Before directing a response to Weimer's article, a recitation of the attempts at concept training is instructive. This training has two major paths. One approach to concept acquisition has been through the domain of receptive language training often beginning with a two choice paradigm initiated by Harlow (1949) under the heading of learning set. Many of the investigations were oriented toward producing learning set among retarded children (Zeaman & House, 1963). If a child was able to discriminate on the basis of a single trial then he was considered to "have" learning set. This meant that a pair of objects was presented on a tray. Under one of the objects a small toy or piece of candy was hidden so if the child chose correctly he would receive the "reward" and if not he would receive nothing. This was repeated until the child systematically selected the rewarded item. Then he was given another problem and yet another until he was able to take the data from the first trial of a new problem and either shift the choice to other objects if he was wrong or continue to select the item if correct on the first



trial. In this way, a child who had learned the learning set would always be correct on the second and all subsequent trials of a problem.

Given this skill, my colleagues and I (Bricker & Bricker, 1969; Bricker, Heal, Bricker, Hayes, & Larsen, 1969; Bricker, 1972; Bricker, Vincent-Smith, & Bricker, 1973) developed a paradigm in which the reinforced object was named just prior to the child's choice. The strategy was to shift control of the choice from the rewarding consequence to the naming antecedent event which would mean that the child was responding to the name of the object. For reasons that will be mentioned later, none of the various procedures was successful in generating conceptlike responding to object names.

Examples of stimulus control of the type described above have been demonstrated very clearly with retarded people. Sidman and Stoddard (1967) performed a classic experiment with an adult who was classified as severely retarded. Using a 9 choice system that surrounded a center panel, they taught this adult to always select an ellipse and never to select a circle. Then, through a careful sequence of fading and changing the stimuli, they taught this individual to select the circle instead. The entire procedure was done with extremely few errors on the part of the individual.

don't forget about me!

Touchette (1968) followed this experiment with a clear example of how stimulus control could be demonstrated and then through delayed onset of the prompting stimulus one could ascertain the point at which control shifted from the prompting stimulus to the desired stimulus. This was not a vacuous exercise; it is an excellent example of behavioral research that is basic and experimental in design but can be used in some important ways by the applied researcher. The clear fact is that concept training must depend on a form of stimulus control training but in a somewhat different manner, as will be indicated later in this chapter.

A second approach uses motor and verbal imitation and then name training.

The second approach to training concepts was to use motor and then verbal imitation training until the handicapped child was able to imitate the names of various objects, actions, and people. Then name training was initiated using the echoic stimulus as a prompt in getting the correct name in the presence of the selected object (Lovaas, 1968; Guess, Sailor, Baer, 1974; Bricker & Bricker, 1970). This approach emphasized the expressive aspect of language although, as in the receptive mode, the investigations were examples of behavioral basic experimental approaches to language. However, Guess (1975) recently reported on a 2 year training program with a Down's syndrome adolescent in which he was able to take the boy from a completely mute state to one in which the boy was using conversational language.

FINDING A NEW DIRECTION IN CONCEPT RESEARCH

An essential feature of a new system would be the recognition that concepts are arbitrary sets of attributes.

- The preceding are a few of the pieces from which a new research direction in concept training must be constructed. The essential features of a new system would be the recognition that concepts are not abstractions that are mentalistic but rather arbitrary sets of attributes of objects and events that must become controlling stimuli for children who are learning these concepts.

The child has a communication process before he has language or acquired concepts, and this process sets the basis for concept learning.

The child does not approach instruction in concept acquisition de novo. He has had at least a couple of years of sensory motor experience to lay the groundwork for concepts (Sinclair-de-Zwart, 1969; Bricker & Bricker, 1974). The child has preferences among objects as well as a flexible system for classifying objects according to particular functions that they serve. Prior to the acquisition of his first formal concepts, the child has also categorized people, space, a rough definition of time, and a basic notion of cause and effect in a concrete sense. The term *intentional* can now be used to describe the child's behavior. The child gives definite signals of wanting particular foods, drinks, games, or events, such as going out in the car or to the park. As Premack and Premack (1974) indicated, the child has a communication process before he has language or before he has acquired concepts. This preverbal communication process sets the basis for concept learning. This formulation also establishes the basis for a critical research frontier that can now be broached experimentally.

The important feature is that the child attempts to communicate to a listener.

The important feature is that the child attempts to communicate to a listener. The communication is probably based on some state of relative deprivation which, when analyzed, becomes the basis for defining an intention. The child can clearly signal when the outcome in terms of what he gets from his attempted communication matches the source of the deprivation state. Skinner (1957) has termed this state of affairs the *mand* situation in that the child attempts to specify his own reinforcement.

Two factors come into play in this situation. The first is the feedback from the environment in terms of matching the child's communicated

message. If the child stands by the kitchen counter pointing at the cookie jar and saying something equivalent to "da . . . da," then the listener could reasonably infer that the child wants a cookie. Consequently, the listener could provide an echoic stimulus "Say cookie!" which the child would have to approximate before receiving a cookie. The second is to provide a counterexample which contrasts with the class cookie. Here, the wise parent might turn to crackers as the more healthful of the two and provide a cracker instead of a cookie to the child, which can be the starting point for an interesting language game. Assume that the parent is consistent in that there are some times during the day that, when the child signals the desire for a snack, the parent will give the child a cracker. In addition, if the parent uses different verbal signals from the child as the basis of the two possible outcomes, the child will learn that salty round (or square) things are called crackers while the sweet versions are called cookies and that the use of these two terms operate successfully depending on the time of day or the time before the next meal.

With such contrasts as between having a Coke and drinking milk, swinging and having a book read, riding in a car and having a parent play ball, and all of the almost innumerable contrasts that adults force on the child's various deprivation states, one can start to understand how the child begins to learn the arbitrary structure of conceptual classes of objects and events. In all of the above cases, the contrasts were drawn because parents tend to take the line of least effort in satisfying a child but will, on relatively fewer occasions, grant the more desirable of the options. This is a far different paradigm than one that depends on pointing to a named picture or naming an object that the parent holds in his hand. However, within this model there is the basis of successful language training because it depends on functional reinforcement that will sustain across situations (Ferster, 1972).

At this point, there is a need to return to Weimer's position as outlined previously. An object such as an apple or a cookie is something that the typical child will voluntarily select under minimal conditions of hunger. However, apples and cookies differ from instance to instance in terms of size, texture, color, degree of sweetness, temperature, location, and in other ways that are not relevant to the concepts of either apple or cookie. How does a child come to put these items into classes when there are relatively few ways that they are the same and so many ways that particular members of a class are different?

One primary hypothesis is that the parents have the concepts (which they learned from their parents, etc.) which they use to constrain the verbal requests of the child until the child comes under the control of the set of relevant properties. To speculate further, the child classifies major object groups such as animal, fruit, juices, pops, candy, and vehicles; object properties such as colors, sizes, and textures; and such actions as walking, running, climbing, riding, and throwing before he learns the names for any of these. The classifications are functional rather than linguistic in terms of what the child likes to do and what he needs in order to do it. Consequently, he has already formed groupings which are not true concepts (Piaget, 1970). When the child is required to name objects, he is under the control of the larger rather than the smaller groupings in that all forms of fruit might be called apple just as all animals might be called doggie. Here is where the parents function in terms of constraining the behavior of the child in order to differentiate the various types of fruit or animals. Through different forms of correc-

Feedback and counterexamples from the environment strengthen concept development.

Successful language training depends on functional reinforcement that will sustain across situations.

Parents use their own concepts to constrain the verbal requests of the child until the child comes under the control of the set of relevant properties.

tions, imitated responses, and differential consequence, the parents help the child form subcategories. Within this form of learning, the child has no prior knowledge of the classes but rather learns them from the parents.

This is only the beginning of a relatively complex set of assumptions concerning the acquisition of concepts by children and how such concepts can be taught to handicapped children. However, some of the important points within this system that apply to education of the handicapped have been made although each needs subsequent research confirmation. The first is that particular forms of training such as self help, language, or functional arithmetic do not begin in a vacuum. Each has prerequisite forms of behavior. In concept acquisition, the child needs prior experience with a range of different environments and members of various groupings in order to have the basis for using verbal concepts. This can come at home more readily than in an institution, with parents who understand the acquisition process as well as the prerequisite conditions.

For using verbal concepts, the child needs prior experience with various groupings.

Concepts are more easily understood when they are defined in terms of stimulus control. For example, the concept *cup* is controlled by opaque cylinders that hold fluids and generally (but not always) have handles. Cups tend to be used with hot fluid; glasses tend to be used with cold ones. By operationalizing stimulus control in this way, a teacher or parent can determine if the child is under the control of relevant properties of an object class or remains somewhat under the control of irrelevant properties. To determine this is simply an extension of Piaget's notion of the clinical method described earlier.

Each instance of concept training should be adapted to the child's current motivational system.

A second important point is that each instance of concept training should be adapted to the child's current motivational system (deprivation states) so that each one learned functions without contrived systems of reinforcement. Finally, as Brown (Chapter 1) indicated, the concepts to be emphasized should be those that best fulfil the criterion of ultimate function.

CONCLUDING COMMENTS

- Dealing with the research needs of the future has many pitfalls—the greatest of which is that each researcher dealing with the issues of the handicapped has his own perspectives and biases. This chapter represents only one set of such perspectives and biases.

The most important bias is that all children need to live in the most homelike of effectively stimulating environments and attend public school programs of instruction. Given this bias, research efforts must be altered so that services can be delivered in natural environments, and they must be structured on a longitudinal basis to take into account the complexity of the developmental process. Concept acquisition was emphasized in this chapter to focus attention on the importance of parents and teachers who can and do structure developmental processes in ways that are equal to if not more important than the influence of the genes.

Research should focus on the methods of instructional intervention in both home and school in an effort to meet the criterion of ultimate functioning.

The research should focus on the methods of instructional intervention in both home and school, and it should accelerate the development of behavior that meets the criterion of ultimate functioning. As many have demonstrated in their individual research efforts, this is no small task nor can this outcome be accomplished by relatively isolated local efforts. National coordination is needed, through both private professional societies such as The Council for Exceptional Children and public agencies such as the Bureau of Education for the Handicapped (US Office of Education).



If the past can be used to predict the future, one of the most hopeful changes in public attitude as well as in common law is the increasing reflection that handicapped people are citizens in every respect and are equally protected under the law. This concept ranges from their equal access to public education to their rights to avoid invasion of their privacy. Too often, due to society's readiness to institutionalize those who are handicapped, these children and adults have been exploited as convenient "subjects" for research. The Constitution of the United States, as recently interpreted in the courts, now protects all from such infringements of citizens' rights. Too often research has focused on the increased public visibility of the researcher among one's colleagues rather than on means for improving the instructional abilities of society. This myopia can no longer be tolerated.

One of the most hopeful changes in public attitude is the increasing reflection that handicapped are citizens in every respect.

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- Williams, W., Coyne, P., Johnson, F., Scheuerman, N., Stepner, J., Swetlik, B., & York, R. *A rudimentary developmental math skill sequence for severely handicapped students*. Privately published paper, Madison, WI, 1970.
- Zeaman, D., & House, B. J. The role of attention in retardate discrimination learning. In N. R. Ellis (Ed.), *Handbook of mental deficiency*. New York: McGraw-Hill, 1963.

Alpern, G., & Kimberlin, C. Short intelligence test ranging from infancy levels through childhood levels for use with the retarded. *American Journal of Mental Deficiency*, 1970, 75, 65-71.

A short intelligence test for retarded children whose abilities ranged from infancy levels through childhood levels was devised, and the results were given.

Altman, R. Differential sensitivity of profound retardates to adults steady gaze. *Psychological Reports*, 1970, 27, 30-34.

This study dealt with 10 ambulatory males, profoundly mentally retarded, who were sensitive to a steady gaze; two types of behavior were elicited—avoidance and approach.

Angement, H. L. A frame of reference in the observation of institutionalized sub-normals. *Journal of Mental Subnormality*, 1970, 16, 107-112.

Interviews discussing the characteristics of 39 females and 61 males ranging in age from 8 to 12 years.

Baker, B., & Ward, M. Reinforcement therapy for behavior problems in severely retarded children. *American Journal of Orthopsychiatry*, 1971, 41, 124-135.

This article reported on a behavior modification program for severely retarded children.

Baumeister, A. A., & Foreland, R. Social facilitation of body rocking in severely profoundly retarded patients. *Journal of Clinical Psychology*, 1970, 26, 303-305.

The article presents two studies regarding the rate with which the severely retarded engage in body rocking as influenced by social context variations.

Bell, G., & Keardon, D. Effects of sedative and stimulative music on activity levels of severely/profoundly retarded boys. *American Journal of Mental Deficiency*, 1970, 75, 156-159.

This study tests three predictions of the effects of musical stimulation on the activity levels of eleven 6 to 17 year old boys, who are severely and profoundly retarded and living in institutions.

Bradtke, L. Intensive play: A technique for building affective behaviors in profoundly mentally retarded children. *Education and Training of the Mentally Retarded*, 1970, 7, 8-13.

This article discusses the use of intensive play in working with profoundly mentally retarded children.

Carlisle, L., & Shinedling, M. Use of the Slosson Intelligence Test with mentally retarded residents. *Psychological Reports*, 1970, 26, 865-866.

The Slosson Intelligence Test was administered to 122 severely retarded institutionalized males and females who had previously been given the Stanford-Binet, Kuhlmann Test of Mental Deficiency.

Daniel, W. Abberant serum protein inheritance in a patient with a ring D chromosome. *Pediatrics*, 1970, 45, 120-122.

This article presents the case study of a microcephalic boy classified as profoundly mentally retarded.

Donoghue, E. Some factors affecting age of walking in a mentally retarded population. *Developmental Medicine and Child Neurology*, 1970, 12, 781-792.

A study of the walking age in 336 severely retarded children is presented.

Guralnick, M. A language development program for severely handicapped children. *Exceptional Children*, 1972, 39, 45-49.

The subjects of this study were eight severely retarded children whose vocabularies consisted of isolated words and occasional phrases.

Martin, G., & Treffry, D. Treating self destruction and developing self care. *Psychological Aspects of Disability*, 1970, 17, 125-131.

A case study is given of a retarded self destructive girl and the successful treatment used.

Ribas-Mundo, M. Genetical factors in mental retardation. *Anuario de Psicologia*, 1970, 1, 29-43.

This article classifies the genetic causes of mental retardation and gives a brief description of the resulting retardation.

Richards, B. Ring chromosome 18 in a mentally retarded boy. *Journal of Mental Deficiency Research*, 1970, 14, 174-186.

This article is a case study of a profoundly retarded 14 year old boy with reduced head size, micrognathic, oblique palpebral fissures, and club feet.

Sullivan, J., & Batarseh, G. Educational therapy with the severely retarded. *Training School Bulletin*, 1973, 70, 5-9.

A project is described in which 30 severely retarded children were given educational therapy to show that it can make the severely retarded more alert and less dependent on others for care and entertainment.

Talkington, L. Use of a peer modeling procedure with severely retarded subjects on a basic communication response skill. *Training School Bulletin*, 1972, 69, 145-149.

In this study several retarded subjects were given basic communication training using modeling procedures.

Thomas, E., & Yamamoto, K. Sex ratios found in various types of referred exceptional children. *Exceptional Children*, 1970, 36, 621-625.

The study gives the statistics of the number of male and female children classified as exceptional children.

Thompson, T. Development and maintenance of a behavior modification program for institutionalized profoundly retarded adult males. *Psychological Aspects of Disability*, 1970, 17, 117-124.

This is a report on a behavior modification program based on positive reinforcement of adaptive behavior and extinction of maladaptive behavior.

Wright, J. Behavior modification with low level retardation. *Psychological Record*, 1970, 20, 465-471.

This article describes a case study of 15 severely and profoundly retarded children who were given social reinforcers (verbal and physical attention) for positive behavior and no reinforcement for negative behavior.

GROSS MOTOR DEVELOPMENT



Gesell, A., & Amatruda, S. *Developmental diagnosis: Normal and abnormal child development* (3rd ed.). New York: Harper & Row, 1974.

The text examines normal, atypical, and abnormal expressions of early child development, consistently emphasizing the central problem of diagnosis and diagnostic methods.

Hurlock, E. B. *Child development* (5th ed.). New York: McGraw-Hill, 1972.

Discussion of foundations of developmental pattern covers heredity and prenatal development, and possible effects of birth on development are identified.

Jordan, T. *Development and disability at age four: A prospective longitudinal study* (Bureau of Education for the Handicapped, Department of Health, Education, and Welfare). Washington DC: US Government Printing Office, 1972.

The report is one in a series of products designed to provide an inferential base for planning instructional strategies.

Keck, A. S. *Day camping for the trainable and severely mentally retarded: Guidelines for establishing day camping programs*. Springfield IL: State Department of Mental Health, Division of Mental Retardation Services, 1970.

This book explains guidelines for establishing day camping programs and physical activities for the severely retarded.

Murray, J. B. *Developmental psychology*. Jamaica NY: Author, 1970.

The basic framework of the text is the vertical dimensions of growth.

Pennsylvania Department of Education. *Challenge to change*. Harrisburg, Penna.: Author, 1970.

This book presents program guidelines in physical education for the severely retarded; programs, charts, and checklists are given.

Pennsylvania Department of Education. *Compete*. Harrisburg PA: Author, 1972.

Broken down in modules, a list of objectives and possible methods and materials to be used by the teacher is given.

Rur, R. E. Suggestion from the field: Standing platforms for nonambulatory patients. *Physical Therapy*, 1971,5/(9), 1015-1016.

Teaching ambulation to nonambulatory children by using standing platforms is discussed.

Smith, D. K. *M-A-P project skill development checklist*. Indiana PA: Area Intermediate Unit 28, 1973.

Lists include various motor skills and five possible development levels.

Valett, R. E. *The remediation of learning disabilities: A handbook of psychoeducational resource programs* (2nd ed.) Palo Alto CA: Fearon Publishers, 1974.

The handbook presents a series of concrete activities and exercises for children with learning disabilities.

Wickstrom, R. L. *Fundamental motor patterns*. Philadelphia PA: Lea & Febiger, 1970.

Introduced by a discussion of movement terminology, motor developmental patterns, sport skill patterns, literature related to motor skills, and a study of movement and mechanics, the text describes in detail six major motor skills.

Winnick, J. P., & Landers, D. M. Trampolining with handicapped children. *TEACHING Exceptional Children*, 1971, 3 (4), 181-188.

The use of the trampoline as a tool of fine motor diagnosis, remediation, and development with low performing handicapped children is discussed; explanations include the trampoline's use for physical movement, balance, and physio-motor, and, techniques in teaching trampolining.

Alpern, G. Effect of selected combinations of stimuli on communicative responses of children with Down's syndrome. *Dissertation Abstracts International*, 1972, 5 (1), 4922-4923.

This study was designed to measure effects of stimuli combinations; the independent variables included auditory visual stimuli, auditory gestural stimuli, visual gestural stimuli, sensory motor stimuli, and no stimuli.

Auxter, D. Motor skill development in the profoundly retarded. *Training School Bulletin*, May 1971, 68 (1), 5-9.

The article discusses implementation and effects of a gross motor program that was designed to increase motor skills among profoundly retarded individuals.

Chandler, L. S., & Adams, M. A. Multiply handicapped children motivated for ambulation through behavior modification. *Physical Therapy*, 1972, 52 (3).

A multiply handicapped severely mentally retarded 8 year old boy with special health problems became an independent walker following a 28 day motor program using behavior modification.

Fiorentino, M. R. *Normal and abnormal development: The influence on motor development*. Springfield IL: Charles C Thomas, 1972.

The normal and the abnormal aspects of motor development are presented along with recommendations concerning sensory motor experiences for cerebral palsied children.

Fletcher, H. L. Getting results from movement exploration. *Academic Therapy Quarterly*, Fall 1972, pp. 27-32.

The benefits and techniques of movement exploration are described.

Fredericks, B. H. *The teaching research motor-development scale for moderately and severely retarded children*. Springfield IL: Charles C Thomas, 1972.

Equipment, number of trials, directions, and scoring are specified.

Frostig, M. Visual perception, integrative functions and academic learning. *Journal of Learning Disabilities*, 1972, 5, 15.

Specific exercises are given to enhance the child's development in sensory motor functions.

Hedrich, V. Apply technology to special education. *American Education*, 1972, 8 (4).

The Seattle Public Schools Special Education program, funded by Title VI, includes early sensory motor training to facilitate learning and the involvement of parents learning about their child's special educational needs.

SENSORY MOTOR DEVELOPMENT



Maloney, M. P., & Ball, T. S. Analysis of generalizability of sensory-motor training. *American Journal of Mental Deficiency*, 1970, 74, 458-469.

A study which investigates generalization in Kephart's sensory motor training system concluded that sensory motor training generalizes to body image.

Maloney, M. P., & Payne, L. E. Note on the stability of changes in body image due to sensory-motor training. *American Journal of Mental Deficiency*, 1970, 74, 708.

This study indicates that sensory motor training affects body image concepts.

Pothier, P., & Delmont, M. Two different remedial motor training programs and the development of the mentally retarded preschools. *American Journal of Mental Deficiency*, 1972, 77, 8.

This study demonstrates the advantages of using a detailed developmental analysis of sensory motor deficits as a basis for the selection of remedial sensory motor activities.

Smeets, P. M. The effects of various sounds and noise levels on stereotyped rocking of blind retardates. *Training School Bulletin*, 1972, 68 (4), 221-226.

This study investigates the effects of auditory stimuli with institutional retarded individuals.

Stephens, B., Baumgartner, B., Smeets, P. M., & Wolfinger, W. Promoting motor development in young retarded children. *Education and Training of the Mentally Retarded*, 1970, 5, 124-128.

Individual perceptual motor programs were planned for custodial and trainable children.

Stewart, F. J. A vocal motor program for teaching non-verbal children. *Education and Training of the Mentally Retarded*. 1972, 7, 176-182.

No verbal clues were given; training procedures were based on motor stimuli; and any echoic motor or vocal response was reinforced.

Sullivan, J. P., & Batarseh, G. J. Educational therapy with the severely retarded. *Training School Bulletin*, May 1973, 70(1), 5-9.

This article reviews educational training methods used for 30 severely retarded children.

Voss, D. G. *Physical education curriculum for the mentally handicapped*. Madison Wisconsin: Wisconsin Department of Public Instruction, 1971.

Physical education curriculum for all levels of mentally handicapped is discussed.

Write, C. J. Motoric engramming for sensory deprivation or disability. *Exceptional Children*, 1972, 38, 4.

The relationships of motoric involvement, perceptual motor theories, and neurophysiological evidence are examined for support of a motoric engramming approach to learning.

Whitman, T. L. Effects of reinforcement and guidance procedures on instruction following behavior of severely retarded children. *Journal of Applied Behavior Analysis*, 1971, 4 (4), 8.

Positive reinforcement, physical guidance, and fading procedures were used to teach two severely retarded children motor responses to a variety of verbal instructions.

Bobath, B. *Abnormal postural reflex activity caused by brain lesions*. England: Wm. Heinemann Medical Books, 1971.

This book is an analysis of various types of cerebral palsy, resulting abnormal motor patterns and disabilities, and treatment possibilities and their problems.

Crickmay, M. *Speech therapy and the Bobath approach to cerebral palsy*. Springfield, IL: Charles C Thomas, 1972.

This book discusses neurophysiological principles underlying the Bobath approach and how they can be applied in each of the three areas of therapy-physical, occupational, and speech.

Criswold, P. A. *Play together: Parents and babies*. Indianapolis: United Cerebral Palsy of Central Indiana, 1972.

This book illustrates how a parent can play with his child and still contribute to the child's overall progress.

Fiorentino, M. *Normal and abnormal development: The influence of primitive reflexes on motor development*. Springfield IL: Charles C Thomas, 1972.

This is a guide in evaluation of the newest techniques in therapy.

Marx, M. Integrating physical therapy into a cerebral palsy early education program. *Physical Therapy*. 1973,53, 512-514.

A program is geared toward 3 to 6 year old children, most of them having a diagnosis of cerebral palsy in all degrees of severity.

Pearson, P., & Williams, C. *Physical therapy services in the developmental disabilities*. Springfield IL: Charles C Thomas, 1972.

This book discusses the strengths and weaknesses of many of the tests used by physical and occupational therapists and presents many new and practical ideas for treatment of handicapped child.

Perlmutter, S. *Neuroanatomy and neurophysiology underlying current treatment techniques for sensorimotor dysfunction*. Chicago: University of Illinois Hospital, 1971.

This is a revised and expanded edition of material used to supplement lectures presented at workshops directed by the author on treatment of the multiple handicapped child.

Pothier, P. Therapeutic handling of the severely handicapped. *American Journal of Nursing*, 1971, 71, 321-324.

This article is concerned mainly with the training nurses should have in caring for the severely handicapped child.

Bobath, B. Motor development, its effects on general development and application to the treatment of cerebral palsy. *Physiotherapy*, 1971, 49 (11), 1279-1288.

This article stresses the importance of sensory-motor experience as a basis for learning in both early and later stages of development.

Bobath, K. The normal postural reflex mechanism and its deviation in children with cerebral palsy. *Physiotherapy*, 1971, 49 (11), 1286-1299.

This article describes the normal development of a child and compares it with that of the cerebral palsy child.

PHYSICAL THERAPY FOR THE CEREBRAL PALSIED



NEURODEVELOPMENTAL METHOD (BOBATH)

Cragen, W., & Beter, T. *The mentally retarded child and his motor behavior*. Springfield IL: Charles C Thomas, 1970.

This book deals with the concept that movement is the basis of learning and cognitive function.

Crickmay, M. C. *Speech therapy and the Bobath approach to cerebral palsy*. Springfield, IL: Charles C Thomas, 1970.

This book deals with the neurophysiological principles that are the groundwork of the Bobath approach to the total child.

Pothier, P. C. Therapeutic handling of the severely handicapped child. *American Journal of Nursing*. 1970, 7; , 321 -324.

This article presents the personal account of a nurse and her preparation in learning to teach children with cerebral palsy.

COGNITIVE DEVELOPMENT



Ball, T. (Ed.). *A guide for the instruction and training of the profoundly retarded and severely multi-handicapped child*. Santa Cruz CA: Santa Cruz County Board of Education, 1971.

Instructional plans provide examples of activities and programs in specific curriculum areas which are intended as guides to curriculum planning.

Ball, T. S. *Itard, Sequin, and Kephart*. Columbus OH: Charles E. Merrill, 1971.

Presented in this book are an analysis and evaluation of Itard and Sequin within a modern framework of reference, educational approaches to escape-avoidance conditioning and generalized imitation, and a review and evaluation of Kephart's theory and correlated treatment programs.

Block, J. D. Operant conditioning. *Mental retardation: An annual review*. New York: Grune & Stratton, 1971.

Byles, T. Some observations on the teaching of nature study to severely retarded teenagers in a rural area. *Teaching and Training*, 1970,8(4), 113-114.

Jeffrey, D. Increase and maintenance of verbal behavior of a mentally retarded child. *Mental Retardation*, 1972, 10 (2), 35-40.

In this study operant and imitative techniques were used in programming generalization of verbal behavior in a child.

Kaananen, R. *The factor structure of intellectual abilities and signal sight vocabulary learning at moderate and severe levels of pre/iterate mental retardation*. Gothenburg, Sweden, School of Education, 1970.

Martin, J. A. Mental retardation. *Journal of Experimental Child Psychology*, 1971, 9 (4), 3201. (Abstracts)

The data here suggests that in severe mental retardation after imitative behavior is acquired it may not be controlled by the same stimuli which regulated it during acquisition.

Sontag, E., Burke, P., & York, R. Considerations for serving the severely handicapped in the public schools. *Education and Training of the Mentally Retarded*, 1973, 8 (2), 20-26.

BEHAVIOR SHAPING TECHNIQUES

Alpern, G. D. *Education and care of moderately and severely retarded children*. Seattle: Special Child Publications, 1971.

The purpose of this book is to acquaint teachers with various teaching techniques, planning strategies, and important basic skills to be learned by mentally handicapped children.

Baker, B. Reinforcement therapy for behavior problems in severely retarded children. *American Journal of Orthophychiatry*, 1971, 41, 124-135.

The project emphasized the use of reinforcement techniques by regular attendants trained as therapists and the behavioral measurement of the target children and matched ward controls.

Bradtke, L. M. Intensive play: A technique for building affective behaviors in profoundly mentally retarded children. *Education and Training of the Mentally Retarded*, 1972, 7, 8-13.

This article discusses the value of intensive play in working with profoundly mentally retarded children.

Gardner, J. M. Behavioral competence and social and emotional behavior in the mentally retarded. *American Journal of Mental Deficiency*, 1970, 75, 168-169.

The relationship between intellectual level and social and emotional behavior was examined in an institutionalized mentally retarded population.

Graziano, A. M. (Ed.). *Behavior therapy with children*. Chicago: Aldine-Atherton, 1971.

This collection of papers and articles concerns the application of behavior modification procedures with children in a variety of problem areas.

Hall, H., V. *Managing behavior series*. Lawrence KS: H & H Enterprises, 1971-1972.

Written for teachers, teacher trainees, and parents, the six publications in this series offer a basic introduction to the theory and application of behavior modification techniques.

Rass, S. M. Trace and delay classical eyelid conditioning in severe and profound retarded subjects as a function of interstimulus interval. *American Journal of Mental Deficiency*, 1972, 77, 39-45.

The results indicated that the traced conditioned stimulus was an effective stimulus.

Sloop, H. W. Institutionalized retarded nocturnal enuretics treated by a conditioning technique. *American Journal of Mental Deficiency*, 1973, 77, 717-721.

The efficacy for institutionalized retarded nocturnal enuretics of a conditioning treatment consisted of an electrical buzzer warning device set off by the act of urinating in bed was assessed using 21 experimental subjects matched with 21 control subjects on age, sex, measured IQ, and number of wet nights over a 7 night baseline period.

Thompson, J. (Ed.). *Behavior modification of the mentally retarded*. New York: Oxford University Press, 1972.

One institution, the Faribault State Hospital in Minnesota, transformed itself from a largely custodial institution into an educational therapeutic environment through the systematic application of behavior modification procedures.

Bakwin, J., & Bakwin, R. *Behavior disorders in children*. Philadelphia: W. B. Saunders, 1972.

Although not specifically oriented toward the severely and profoundly retarded child, this book is helpful in outlining basic procedures for self care training.



SELF CARE DEVELOPMENT

Ball, T., Seris, K., & Payne, L. Long-term retention of self-help skill training in the profoundly retarded. *American Journal of Mental Deficiency*, 1971, 76, 378-382.

A study involving the retention of dressing and undressing skills was conducted with six severely retarded boys following their participation in a 90 day intensive training program.

Buckler, B. *Living with a mentally retarded child: A primer for parents*. New York: Hawthorn Books, 1971.

Specific methods which parents can implement in training their retarded child in feeding, bathing, and toileting skills are explained in detail.

Connor, F. P., & Talbot, M. E. *An experimental curriculum for young mentally retarded children*. New York: Teachers College Press, 1970.

Intensive curriculum programs for training 190 behaviors, including self help skills, are provided.

Gardner, W. *Behavior modification in mental retardation: The education and rehabilitation of the mentally retarded adolescent and adult*. Chicago: Aldine-Atherton, 1971.

The development of eating, dressing, and toileting skills in the severely and profoundly retarded is discussed with attention given to the research performed by Bensberg in this area.

Grotz, R., Henderson, J., & Katz, S. A comparison of the functional and intellectual performance of phenylketonuric, anoric, and Down's syndrome individuals. *American Journal of Mental Deficiency*, 1972, 76, 710-717.

The Index of Independence in Activities of Daily Living (ADL) scale was utilized in comparing the functional and intellectual abilities of PKU, anoxic, and Down's individuals.

Groves, I., & Carroccio, D. A self-feeding program for the severely and profoundly retarded. *Mental Retardation*, 1971, 9 (13), 10-12.

Simple operant conditioning techniques were used in a project to teach 60 severely and profoundly retarded female institutional residents to eat with a spoon.

Lebeck, M., & Elliott, C. Toilet training for profoundly retarded with a limited staff. *Mental Retardation*, 1970, 8 (3), 48-50.

An application of the concept of successive approximations was used in a practical research project which attempted to teach toileting skills to 103 profoundly retarded institutional residents.

Martin, G., Rehce, B., Bird, E., Jensen, V., & Darbyshire, M. Operant conditioning in dressing behavior of severely retarded girls. *Mental Retardation*, 1971, 9 (3), 24-31.

The manner in which psychiatric nurses and nurses' aides were trained to use operant conditioning principles to teach severely retarded girls to dress with several clothing items is described.

Martin, G., McDonald, S., & Omichinshi, M. An operant analysis of response interactions during meals with severely retarded girls. *American Journal of Mental Deficiency*, 1971, 76 (1), 68-75.

A project designed to decrease the maladaptive mealtime behaviors (slopping food, yelling, playing with utensils, and eating with hands) of four severely and profoundly retarded, institutionalized females between the ages of 9 and 19 was conducted.

Reese, R. *Establishing spoon-feeding behavior and eliminating finger-feeding and spoon-dropping behavior*. Unpublished manuscript, White Haven State School and Hospital, 1971.

Therapists analyzed the behavior tasks required for spoon feeding into simple parts that were systematically presented.

Steele, S. *Nursing care of the child with long-term illness*. New York: Appleton-Century-Crofts, 1971.

Discussed in this book is the use of various devices for training the child with severe motor impairment to feed himself.

Treffny, D., Martin, G., Samals, J., & Watson, O. Operant conditioning grooming behavior of severely retarded girls. *Mental Retardation*, 1970, 8 (4), 29-33.

This article discusses a program in which 11 severely retarded girls were to be taught to wash and dry their hands and faces.

Watson, L. S. *How to use behavior modification with mentally retarded and autistic children: Programs for administrators, teachers, and nurses*. Columbus OH: Behavior Modification Technology, 1972.

Several programs using the principles of shaping and reinforcement for the training of self help skills are described in detail.

Watson, L. S. *Child behavior modification: A manual for teachers, nurses, and parents*. New York: Pergamon Press, 1973.

A description is provided of the teaching of new behavior to autistic and retarded children by the shaping technique.

Azrin, N., & Foxx, R. A rapid method of toilet training the institutionalized retarded. *Journal of Applied Behavior Analysis*, 1971, 4 (2), 89-99.

In this toilet training program 9 male respondents received positive reinforcement for appropriate elimination in an attempt to accomplish rapid toilet training.

Bates, K. K. *Use of multi-sensory reinforcement in toilet training retardates*. Costa Mesa CA: Farview State Hospital, 1970.

This describes a behavior modification program in toilet training, utilizing reinforcing properties of music, candy, cold drinks, and television.

Colweel, C, Richards, E., McCarver, R., & Ellis, N. Evaluation of self-help habit training. *Mental Retardation*, 1973, 11, 14-18.

The training program was investigated at the Columbia State School, Louisiana, a new short term residential facility for intensive self help training for the severely retarded.

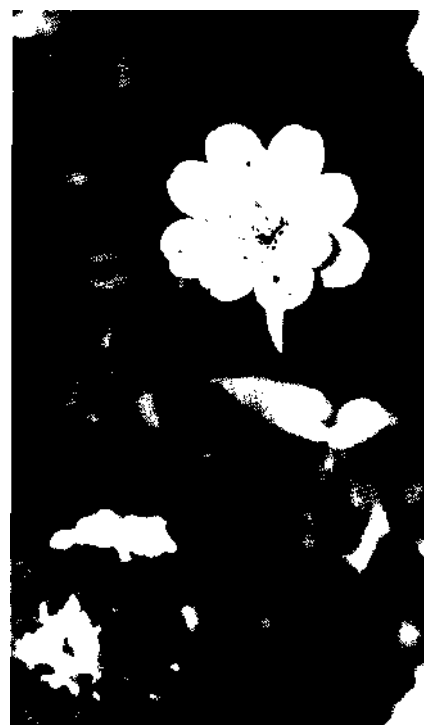
Gardner, J. M. *Behavior modification in mental retardation*. Crient OH: Crient State Institute, 1970.

This annotated bibliography covers literature related to the applications of behavior modification to the training of the mentally retarded.

Levine, M. L., & Elliott, C. B. Toilet training for profoundly retarded with limited staff. *Mental Retardation*, 1970, 8(3), 48-50.

In this study 103 profoundly retarded individuals were toilet trained with limited staff in a 10 week program.

TOILET TRAINING



Baer, D. M., & Guess, D. Teaching productive noun suffixes to severely retarded children. *American Journal of Mental Deficiency*, 1973, 77, 498-505.

Bricker, W., & Bricker, D. A program of language training for the severely language handicapped child. *Exceptional Children*, 1970, 37, 101-111.

A sequence of language training procedures for the severely language handicapped child is presented.

Gray, B. B., & Ryan, B. O. *A language program for the nonlanguage child*. Champaign, IL: Research Press, 1973.

Changing the child's code to language is the basic theme of this book.

Guess, D., Smith, J. O., & Ensminger, E. E. The role of nonprofessional persons in teaching language skills to mentally retarded children. *Exceptional Children*, 1970, 37, 447-453.

In this 2 year research project two former psychiatric aides were trained to serve as language developmentalists for small groups of institutionalized severely retarded children.

Guralnick, M. J. A language development program for severely handicapped children. *Exceptional Children*, 1972, 39 (1), 45-49.

This program, based on behavioral principles, was to develop verbal activity in severely handicapped children, and was implemented by college students.

Hagen, C, Porter, W., & Brink, J. Nonverbal communication: An alternative mode of communication for the child with severe cerebral palsy. *Journal of Speech and Hearing Disorders*, 1973,38, 448-455.

This article discusses the need of an electronic signal system used to communicate basic needs for severely mentally retarded cerebral palsied children.

Hall, S. M., & Talkington, L. W. A suggested language development program for severely and profoundly retarded. *Journal for Special Educators of the Mentally Retarded*, 1970,6(2).

A basic sequence of developmental phases, roughly ordered according to language acquisition stages in normals, has been conceived as a functional language system for the severe and profound mentally retarded.

Hartung, J. R. A review of procedures to increase verbal imitation skills and functional speech in autistic children. *Journal of Speech and Hearing Disorders*, 1970,35, 203-217.

This article reviews the importance of identifying the major deficits and outlines some procedures.

Hebb, L., & Tucker. Language, thought and experience. *Modern Language Journal*, 1971,55,212-221.

The modes of human learning and language learning in relation to environment and experience are discussed.

Hedrick, D. L., & Christman, M. A. Programming for the antecedent event in therapy. *Journal of Speech and Hearing Disorders*, 1973, 38, 339-344

The process for systematically planning the antecedent event is described and includes data collecting from the communicative environment to be used in cueing.

Larson, T. Communication for the nonverbal child. *Academic Therapy*, 1971, 6, 305-312.

A language of signs is being taught to multiply handicapped children in the Orange County Development Centers.

McLean, J. E., Yoder, D. E., & Schiefelbusch, R. *Language intervention with the retarded*. Baltimore: University Park Press, 1972.

The programs in this book are detailed and more useful to the experienced teacher or therapist than to the initiate.

McLean, L. P., & McLean, J. E. A language training program for nonverbal autistic children. *Journal of Speech and Hearing Disorders*, 1974,39, 186-193.

An experimental program taught nonverbal autistic children to respond to a limited number of social transactions using plywood word symbols.

Mowrer, D. E. Transfer of training in articulation therapy. *Journal of Speech and Hearing Disorders*, 1971, 36, 427-445.

Some concrete suggestions for transference of training are supplied.

Rutter, M., & Martin, J. A. M. *The child with delayed speech*. Philadelphia: J. B. Lippincott Co., 1972.

This book is an excellent collection of chapters by a variety of authors.

Ryan, J. Language research in the severely subnormal. *Teaching and Training*, 1971, 5(1).

Research done to explore possible reasons behind the gap in language ability between severely mentally retarded children and nonretarded children of the same mental age, language development was studied in 15 mongol and 15 non-mongol severely mentally retarded.

Schiefelbusch, R. (Ed.). *Language of the mentally retarded*. Baltimore: University Park Press, 1972.

This is a reporting of recent research by the researchers; the book includes the questions and answers asked at the symposium and provides a breadth of information for the reader.

Stark, J. Rosenbaum, R. L., Schwartz, D. & Wisan, A. The nonverbal child: Some clinical guidelines. *Journal of Speech and Hearing Disorders*, 1973,38, 59-72.

This article describes some principles and procedures related to language training for nonverbal children.

Sullivan, J. P., & Batarseh, G. J. Educational therapy with the severely retarded. *The Training School Bulletin*, 1973, 70(1), 5-9.

Possible behavior control methods, attention spans and retainment, gross and fine motor training are discussed.

Talkington, L. W., Hall, S. M., & Altman, R. Use of peer modeling procedures with severely retarded subjects on a basic communication response skill. *The Training School Bulletin*, 1973, 69 (4), 45-49.

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This paper discusses an independent study program at the University of Illinois which is designed to give students an opportunity to work with normal or handicapped children.

Gold, M. W. The preparation of secondary teachers of the mentally retarded. In O. Brolin & B. Thomas (Chm.), *Preparing teachers of secondary level educable mentally retarded: Proposal for a new mode*. Project Report No. 1, Department of Rehabilitation and Manpower Services, School of Education, Stout State University, Menomonie, Wisconsin, April, 1971.

The importance of teachers obtaining experiences similar to those for which their students are being trained is discussed, both in terms of life experiences and vocational experiences.

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Gold, M. W. Stimulus factors in skill training of the retarded on a complex assembly task: Acquisition, transfer and retention. *American Journal of Mental Deficiency*, 1972,76, 517-526.

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Gold, M. W. *An adaptive behavior: Who needs it?* Revision of a paper published in the Proceedings of the National Association of Superintendents of Public Residential Facilities Region V Interaction Workshop on Community Living for Institutionalized Retardates, May 1972, Chicago, Illinois.

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which function to prevent the retarded from enjoying their inherent right to full participation in that society.

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