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STRATEGIES FOR GENERATING COMPREHENSIVE LONGITUDINAL, AND CHRONOLOGICAL AGE APPROPRIATE INDIVIDUALIZED EDUCATIONAL PROGRAMS FOR ADOLESCENT AND YOUNG-ADULT SEVERELY HANDICAPPED STUDENTS

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ABSTRACT

If chronological age appropriate and functional curricular content is to be developed, the basic components of an individualized educational program (ISP) as mandated by P.L. 94-142 must be supplemented, expanded, and instructionally defined in relation to the unique educational needs of each severely handicapped student. A six-phase process for developing IEPs for such students is presented. It is intended that the six-phase process be considered in attempts to generate individualized interpretations of many of the concepts in P.L. 94-142. Furthermore, it is intended that progression through the phases will result in closer approximations of chronological age appropriate IEPs than if only components stipulated by P.L. 94-142 are considered.

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Public Law 94-142 and the Individualized Educational Program (IE?)

Public Law 94-142 mandates that teachers providing special educational services to handicapped students design, record, implement, and evaluate IEPs for each of their students. Six basic components of an IEP, as mandated by P.L. 94-142, are:

Component 1: A statement containing a description of present levels of educational performance;

Component 2: A statement containing a description of annual goals and short-term objectives;

Component 3: A statement containing a description of the specific educational and related services that will be provided:

Component 4: A statement containing a description of the extent to which the handicapped student will participate in educational programs for nonhandlcapped children;

Component 5: A statement containing the projected dates for the initiation of services and the anticipated duration of the services: and

Component 6: A statement containing a description of appropriate and objective evaluation procedures.

These six components generate at least three major considerations. First, the components provide general guidelines for those (parents, teachers, and others) serving handicapped students to design, record, implement, and evaluate educational programs. Second, many of the critical concepts in the components are broad and open-ended. Thus, the Lav both allows and challenges educators to work in conjunction with a variety of other persons and disciplined toward developing individually relevant and functional definitions of the3e components. More specifically, we are required to specify objectives, but we are not told what objectives to specify. We are required to measure student progress, but we are also given the freedom to develop the most tenable measures acceptable and relevant to an individual program. We are required to educate handicapped students in programs with children who are not handicapped to "the maximum extent appropriate," and we are also allowed the professional freedom to search for the most reasonable criteria of "the maximum extent appropriate." Third, while the six components must be included in every IEP, they are generally viewed as minimal criteria or starting points. In fact, if the spirit of the Law is to be realized, it is critical that the six components be supplemented with additional information in order to avoid irrelevant and nonfunctional educational programs. For example, the following IEP-related information might be interpreted as meeting the minimal standards required by P.L. 94-142, but it is not a relevant, functional, and chronological age appropriate IE? for Nora, an 18-year-old severely handicapped student.

EXAMPLE OF A NONFUNCTIONAL CHRONOLOGICAL AGE INAPPROPRIATE IEP FOR NORA MILLS

Component 1. A statement containing a description of present levels of educational performance

In September Nora was administered a battery of test3, and the following results were compiled and placed in her educational file. Nora performed at the 18-month level on the Denver Developmental Screening Test for Personal-Social Skills (Frankenberg & Dodd, 1966); she performed at Level 3 in Dressing Skills on the Developmental Profile (Alpern & Boll, 1972); she performed at Level 2 in Receptive Language and Level 1 in Expressive Language on the Gesell Developmental Screening Examination (Gesell & Amatruda, 1942); and she performed at the 10-oonth level in Gross Motor Skills on the Bayley Infant Scales on Development (Bayley, 1968).

Component 2. A statement containing a description of annual goals and short-term objectives

In personal-social areas, Nora will be taught the following:

A. Nora will maintain eye-to-eye contact with the teacher for 1 minute
   - Nora will maintain eye-to-eye contact with the teacher for 10 seconds.
   - Nora will maintain eye-to-eye contact with the teacher for 30 seconds.
   - Nora will maintain eye-to-eye contact with the teacher for 1 minute.

In the dressing area, Nora will be taught the following:

B. Nora will learn to remove garments.
   - Nora will learn to remove her shirt.
   - Nora will learn to remove her pants.
   - Nora will learn to remove her jacket.

In the language area, Nora will be taught the following:

C. Nora will touch major body parts on command.
   - Nora will touch her head on command.
   - Nora will touch her mouth on command.
   - Nora will touch her arm on command.

In the gross-motor area, Nora will be taught the following:

D. Nora will crawl 5 feet across the classroom floor.
   - Nora will crawl 6 inches across the classroom floor.
   - Nora will crawl 2 feet across the classroom floor.
   - Nora will crawl 5 feet across the classroom floor.

Component 3. A statement containing a description of specific educational and related services that will be provided

Nora will receive occupational therapy and physical therapy three times a week and speech therapy once a week for a total of 83 minutes of direct instruction per week.

Component 4. A statement containing a description of the extent to vhich the handicapped student will participate in educational programs containing children who are not handicapped

Nora will attend a segregated school and will not participate in regular education programs containing nonhandieapped children.

Component 5. A statement containing the projected dates for the initiation of services and the anticipated duration of the services

This program, and thus these services, will begin in September 1980, and . will be completed in June 1981.

Component 6. A statement containing a description of appropriate and objective evaluation procedures

Data sheets will be used to secure and record weekly probes of Nora's progress toward completion of each of the objectives stated in Component 2. In addition, the tests administered in September 1980 will be readainistered in June 1981.

While Nora's IEP apparently relates to the six basic components called for by P.L. 94-142, in our judgment it also manifests serious deficiencies, only some of which are stated below.

1. Nora's IEP contains a statement that she will not participate in educational programs with nonhandieapped students. ISPs that do not contain assurances for interactions between severely handicapped students and nonhandicapped students are unacceptable.

2. Nora's IEP does not contain a description of bow she will be taught to perform chronological age appropriate functional skills in natural environments.

3. Nora's IEP does not contain clearly articulated statements that pertain to performance criteria.

The reader is referred to Falvey, Ferrara-Parrish, Johnson, Pumpian, Schroeder, and Brown (1979), in which a comprehensive, longitudinal, and chronological age appropriate IE? for Nora Kills is described.

Our interpretation of the spirit of P.L. 94-142 is that severely handicapped persons should live, work, and play in heterogeneous community environments throughout their lives. Therefore it is critical that the educational experiences provided during their developmental years be oriented toward preparing them to function as independently and as productively as possible in as many community environments as possible. This paper attempts to describe a process to meet the minimal criteria of P.L. 94-142 as well as result in the designing, recording, implementing, and evaluating of comprehensive, longitudinal, and chronological age appropriate IEPs. It is hoped that this process will result in at least the following:

1. IEPs will ensure that all severely handicapped students have opportunities to interact with nonhandicapped students.

2. IEPs will contain goals and objectives directed toward teaching severely handicapped students to perform chronological age appropriate functional skills in natural environments.

3. IEPs will contain systematic strategies for including parents/guardians in the educational programs of their handicapped children.

4. IEPs will contain functionally relevant methods and procedures for determining existing and needed student skill repertoires.

5. IEPa will contain strategies that can be used to put in priority order the skills that might be selected for instruction, using the collective input of a variety of persons, disciplines, and perspectives.

6. IEPs will contain descriptions of how severely handicapped students might be taught chronological age appropriate skills.

7. IEPs will contain clearly articulated statements pertaining to performance criteria.

A SIX PHASE PROCESS FOR GENERATING AN IEP

The process for generating comprehensive, longitudinal, and chronological age appropriate IEPs offered here has been somewhat arbitrarily divided into six nonmutually exclusive phases:

PHASE I: A STRATEGY FOR ORGANIZING CURRICULAR CONTENT

PHASE II: ECOLOGICAL INVENTORY STRATEGIES

PHASE III: STUDENT-REPERTOIRE INVENTORY STRATEGIES

PHASE IV: PARENT/GUARDIAN INVENTORY STRATEGIES

PHASE V: STRATEGIES FOR PUTTING CURRICULAR CONTEST IN PRIORITY ORDER

PHASE VI: THE DESIGN AND IMPLEMENTATION OF INSTRUCTIONAL PROGRAMS

The reader should realize that these phases are suggestive in nature and that they should and will be revised and supplemented as experience accrues.

PHASE I: A STRATEGY FOR ORGANIZING CURRICULAR CONTENT

Unfortunately, much curricular content currently used for severely handicapped students of all ages is based on curriculum-development strategies originally generated for young children, and it is usually. organized into such categories as self-help, motor, language, and sensorimotor. From many perspectives, particularly from developmentally oriented normative perspectives, it is apparently logical to base curricula for severely handicapped students of all ages on the assunptions used to generate curricula for young nonhandicapped children; i.e., viewing older severely handicapped students in the same way as younger nonhandicapped students. It is our premise that although developmentally based curriculun

development strategies may have merit for young children regardless of functioning level, such strategies lose, creditability relevance, and applicability as the chronological ages of severely handicapped students increase. We believe that a major precise underlying IEPs for severely handicapped students should be the orientation of curricular content toward direct teaching of the exact skills necessary to function as independently and productively as possible in the least restrictive current environment and subsequent community environment. For discussion purposes it is suggested that educators consider organizing curricula for severely handicapped students into at least five nonnutually exclusive curricular domains.

The Domestic Domain; To state an obvious (and often overlooked) fact, all severely handicapped students, regardless of their functioning level, will live somewhere. Consequently, all severely handicapped students have the right to longitudinal educational programs that will prepare them to function as independently as possible in the least restrictive domestic environments. It is becoming increasingly apparent to educators, legislators, parents, and others that severely handicapped persons can be served humanely and effectively in a variety of community-based domestic environments (e.g., group homes, sheltered apartments, boarding homes) and that we oust create such environments to afford handicapped persons personal diginity, individual freedom, love, emotional support, and interpersonal involvement. As educators, we oust assume the responsibility for teaching the skills for living effectively in those environments.

The Vocational Domain: All persons, including the lowest functioning persons in cur society, have the right to participate in vocational activities. That is, all persons in our society, including severely handicapped students, have, at the least, the right to try to earn a living or to contribute to their economic support. Educators have the responsibility to provide the developmental experiences that will allow handicapped students to utilize that right. Certainly it is realized that many nay never be able to earn a minimum wage in competitive employment. However, at least two points seen in order. First, there have been those who predicted that no severely handicapped person was capable of earning a minimum wage. In fact, they were wrong. Second, severely handicapped persons (as well as the rest of our society) will benefit if they are allowed to participate to the maximum degree possible in our economic system. Thus, curricula should include a segment, component, or domain specifically devoted to preparing students to participate in vocational activities to the greatest extent possible.

The Recreational/Leisure Domain; Most persons spend substantial tine engaging in recreational/leisure activities. Severely handicapped students quite often are given unusually long periods during which such activities might be performed. Unfortunately, however, most of them lack the skills to do so. In addition, success in various vocational and general community environments may depend on the ability to manage and occupy free time appropriately. Therefore, it is critical that educational programs include a domain for teaching recreational/leisure skills in a wide variety of heterogeneous school and nonschool environments (e.g., in neighborhoods, group homes, public recreational facilities).

The Ceneral-Community-Functioning Domain: Severely handicapped students must be taught to access and act appropriately when using public transportation or visiting shopping centers, restaurants, public streets, hospitals, public and private agencies, etc. A portion of their curricula should be devoted to teaching the skills necessary to function in a wide variety of general community environments.

The Interaction-With-Nonhandicapped-Persons Domain: Under ordinary circumstances, curricular content pertaining to teaching . severely handicapped students to interact with nonhandicapped persons, and vice versa, would be considered a component of the domestic, vocational, recreational/leisure, and general-community-functioning domains. However, at least two major factors justify establishing it as a major curricular domain. First, as we move toward providing educational and related services in less and less restrictive environments, it becomes apparent that handicapped and nonhandicapped students are certain to interact in many ways. Obviously both groups must develop the skills, attitudes, values, etc., that will allow those interactions to be constructive, positive, and mutually gratifyin Second, P.L. 94-142 requires that severely handicapped students be educated with nonhandicapped students "to the maximum extent appropriate." Our interpretation of "to the maximum extent appropriate" is that educational services should never be provided to severely handicapped students in environments that do not allow for a variety of interactions with nonhandicapped chronological age peers and others. Therefore a substantial proportion of the curricula should be devoted to teaching all severely handicapped students and many nonhandicapped students and persons the skills necessary for those inevitable and desirable interactions. The reader interested in a more detailed discussion of justifying such interactions is referred to Brown, Branston, Hamre-Nietupski, Johnson, Wilcox, and Gruenewald (1979); the reader interested in core detailed curricular suggestions for educational strategies that can generate interactions in school and nonschool settings is referred to Hamre-Nietupski, 3ranston, Ford, Stoll, Sweet, Gruenewald, and Brown (1978).

PHASE II. ECOLOGICAL INVENTORY STRATEGIES

Phase 2 of the IEP process is designed to secure information about those least restrictive environments in which a severely handicapped student is currently functioning and about those environments in which he/she might function in the future, particularly with regard to the five curricular domains.

Historically, most of the curricular content used in educational programs for these students has come primarily from one or more of the following resources: (a) nonhandicapped child-development literature, (b) professional judgments of producers of commercial products, and/or (c) professional inferences regarding skills that cay be necessary to function in nonschool environments.

When curricular decisions regarding "living" skills for handicapped students are based principally on what might be appropriate for normally developing younger children and the content of commercial materials, the handicapped students are often taught skills that are inappropriate to their age and that are made even more nonfunctional by being taught in simulated environments in response to artificial cues and correction

procedures. Thus it is suggested that ecological inventory strategies be used at least to supplement, if not replace, some historically used strategies.

Ecological inventory strategies, as the term- is used here, refers to teacher processes or actions for determining the exact skills (and related factors) severely handicapped students need to function in natural environments. While there Bight be many ways to conduct such inventories, the fundamental premise is that a teacher should acquire information about the current and subsequent natural environments of a student in order to design and implement progress to prepare his/her to be as independent and productive as possible in these environments. An example of an ecological inventory strategy that has been effectively used in educational programs for severely handicapped students was reported by Brown, Branston, Hamre-Nietupski, Pumpian, Certo, and Gruenewald (1979) and is summarized below.

Step I: Divide the curriculum into the cost relevant curricular domains;

Step II: Determine the environments in which a severely handicapped student is functioning or might function in the future within each domain;

Step III: Divide the environments delineated in each domain into subenvironments;

Step IV: Delineate the activities that occur in each subenvironment; and

Step V: Delineate the specific skills needed in order for the studen to participate in as cany of the activities as possible.

When conducting ecological inventories it is often critical to consider varieties of adaptations to enable student participation in a diversity of activities. A core detailed discussion of such adaptations is available in Brown, Branston, 3auagart, Vincent, Falvey, and Schroeder (1979).

PHASE III: STUDENT-REPERTOIRES INVENTORY STRATEGIES

A comprehensive, longitudinal, and chronological age appropriate IE? for a severely handicapped student must include information about the skills current in his/her repertoire. The process offered here for gaining this information is referred to as a student-repertoire inventory strategy, a series of actions to determine the skills the student needs in order to participate in the activities identified by ecological inventory strategies.

Student-repertoire inventory strategies are intended as individually referenced approaches to instructional measurements: they should not be construed as standardized, inflexible recipes or uniformly applicable sequences. Indeed, each teacher is encouraged to use or create the measurement strategy that is most functional and appropriate for a specific student in a specific environment. The following version of a student-repertoire inventory strategy is only an example and will no doubt require adaptations when used in relation to an individual student.

Step I: Conduct a nonhandicapped person inventory

If a teacher is considering teaching the skills to take part in a particular activity, one of the first tasks might be to analyze and record the skill sequences nonhandicapped persons use in that activity. Much of this information was secured in Phase 2 when the teacher conducted ecological inventories of specific environments. However, it may be necessary to reinventory specific environments in relation to specific skill sequences.

Step II: Conduct a severely handicapped person inventory

When the skill sequences nonhandicapped persons use in a particular activity are delineated, the teacher might determine the skills in those sequences that a particular handicapped student can perform. At least two procedures seen appropriate. First, the student can be taken to the natural environment and given the chance to engage in the activity, and the teacher can then record the skills the student performs. Second, as it may not always be practicable or educationally justifiable to use actual environments initially, simulated environments can be set up. Obviously, simulation without later empirical verification in natural environments is unacceptable.

Step III: Conduct a discrepancy analysis

In Step I the skill sequences performed by nonhandicapped persons were delineated, and in Step II the skill sequences performed by a severely handicapped student were delineated. Comparisons between the two can then be made. From such comparisons one can identify skills for a particular activity that are missing from the handicapped student repertoire.

Step IV: Generate an initial adaptation hypothesis

Certainly there are many skill sequences nonhandicapped persons perform that might never be performed by severely handicapped students; flying an airplane and conducting a symphony orchestra are but two examples. Just as certainly, however, there are a number of skills that can be performed by many severely handicapped students at appropriate chronological ages; for example, making toast, blowing one's nose, putting a stamp on an envelope, vacuuming an ash tray in a car, and using a public restroom. In addition, there are many skills that severely handicapped students can perform, although not in the same ways that nonhandicapped persons perform them. Stated another way, handicapped students can be taught to perform many chronological age appropriate skills if adaptations are provided. Using an electric wheelchair to go from home to school, and using pictures of a hamburger. french fries, and a soft drink to order lunch in a fast-food restaurant exemplify the kind of adaptations that a student might use to participate in activities from which he/she has been excluded.

Thus it is suggested that in analyzing discrepancies between the skills of nonhandicapped persons and a severely handicapped student, the teacher should also consider adaptations of materials, skills, skill sequences, rules, physical environments, devices, etc., that might enhance or allow participation.

It is assumed that almost ail parents/guardians of severely handicapped students have infomation critical to the development and implementation of longitudinal, comprehensive, and chronological age appropriate IEPs for their child. Phase IV is designed to allow a teacher to get that information. More specifically, Phase IV has five major purposes: first, to secure basic information about the environments in which the student is functioning and these in which he/she might function in the future that were not delineated in Phases I and II; second, to systematically present the information secured in Phases I and II to parents/guardians in an organized, comprehensive manner; third, to secure basic information from parents/guardians specifically related to the functioning of their son/daughter in the environments delineated; fourth, to persuade parents/guardians to allow and encourage their child to perform new skills; and fifth to learn perental preferences regarding their son's/daughter's educational program.

Please note that this information-gathering and sharing process is intended to be durable, flexible, and cumulative. That is, because of the breadth and depth of the information gathered and shared, it is impossible to complete Phase IV in one meeting. Thus a working relationship with parents/guardians oust be developed. It is hoped that the relationship will lead to continuous and intensive interactions ensuring that the parents/guardians are constantly kept abreast of the educational programs in which their son/daughter is functioning and that, in turn, teachers are constantly kept abreast of the important information that can be secured from parents/guardians and related sources. For organizational purposes, Phase IV may be divided into four steps.

Step 1

The specific domains covered in the curriculum of an individual student should be presented to the parent/guardian. At this point it might be appropriate to ask parents/guardians about additional domains and relative emphasis within specific domains.

Step 2

The current and subsequent environments delineated within each domain should be presented to parents/guardians. Specific information concerning additional current and subsequent environments should be secured and organised appropriately.

Step 3

Information from the student-repertoire inventory should be organized and explained to parents/guardians in as precise and concise a manner as needed. Information regarding how their son/daughter functions in environments not inventoried should be secured. Information pertaining to adaptations that parents/guardians have used successfully/unsuccessfully or plan to use should be secured.

PHASE V; STRATEGIES FOR PUTTIING CURRICULAR CONTENT IN PRIORITY ORDER

The strategies described in Phases I through IV generate and organize substantial information pertaining to the current and potential life spaces of a severely handicapped student. In order to convert that information into a functional, comprehensive, longitudinal, and chronological age appropriate IEP, the teacher must now systematically determine and assign priorities to curricular content.

A critical question now becomes, What dimensions should a teacher consider when deciding on curricular "content for a severely handicapped student? For organizational purposes, a list of 16 dimensions is offered in random order in Table 1.

Insert Table 1 here

Before considering these dimensions, several points seem in order. First, the list is incomplete; additional dimensions could be considered now, and others will emerge as experience grows. Second, the dimensions offered are viewed as neither linear nor mutually exclusive. Third, it is strongly urged that, at a minimum, these 16 dimensions be considered to some extent when developing an IEP; if they are not, the IEP development is incomplete and therefore unacceptable. Fourth, because of the inherent range of complex possibilities, informed and honorable persons will and should disagree on points of emphasis both within and among dimensions. Fifth, it is intended that the IEP of a student be unique to that student. Therefore different dimensions and points along each dimension may be considered differently for each student.. Sixth, in our view, regarding decisions that relate to emphasis of particular dimensions and points along those dimensions, the guiding theme should be to teach chronological age appropriate functional skills in the least restrictive current and subsequent school and nonschool environments. Seventh, the reader should realize that each dimension may have advantages and disadvantages for the educational program of an individual student; therefore each dimension should be carefully scrutinized in relation to other dimensions.

1. TEACHER PREFERENCES. This refers to assigning priorities to curricular content using the personal and professional judgments and preferences of the teacher. It is virtually impossible to select curricular content without regard to the preferences of the teacher. It is important that teachers present their preferences openly, so they can be scrutinized carefully by all concerned and modified if necessary.

2. ADMINISTRATOR PREFERENCES. This refers to assigning priorities to curricular content using the considered judgments and preferences of a principal, a board, a supervisor, or some other person or group administratively responsible for the provision of educational services to a particular student. For example, administrators of a school district might premeditatedly adopt a curriculum guide, operate a segregated school, and arrange for a specific curriculum to be presented in an inservice training program.

ANCILLARY-STAFF PREFENCES. This refers to assigning priorities to curricular content using the considered judgments and preferences of ancillary staff (e.g., occupational therapists, physical therapists, speech therapists). Obviously, it is important to have the benefit of the individual and collective thinking of a variety of professional disciplines.

PARENT/GUARDIAN PREFEANCES. This refers to assigning priorities to curricular content using the considered judgments and preferences of parents/guardians. For example, some parents/guardians concerned about the physical safety of their children night prefer that they be taught skills only in highly supervised and sheltered environments. Other parents/guardians sight prefer that their children be taught, for instance, the skills necessary to ride on a public bus and attend a public movie.

STUDENT PREFERENCES. This refers to assigning priorities to curricular content using the preferences of the student. For example, provided with a choice, a severely handicapped student might choose to drink pop and eat some solid food rather than drink only orange juice and eat only pureed food.

UNIQUE STUDENT CHARACTERISTICS. This refers to assigning priorities to curricular content in relation to one or more of the unique characteristics of the individual, student. For example, a teacher night unfairly limit the recreational/leisure activities of non-ambulatory handicapped student to table games in a group hone rather than consider adaptations to allow participation in varied community recreational activities. It should be emphasised that in addition to physical characteristics, social, emotional, and other characteristics should also be considered.

COMMERCIAL-PUBLISHER PREFERENCES. This refers to assigning priorities to curricular content using the preferences supported and advocated by commercial publishers. For example, after attending a workshop sponsored by a publishing company, a teacher might decide to teach the particular motor, language, and self-help skills emphasized in the company products rather than teach the specific skills the students need to function in natural environments.

PRESUMED LOGISTICAL AND PRACTICAL REALITIES. This refers to a critical cluster of realities that must be considered when planning and developing educational programs for severely handicapped student The location of the school in the community, transportation services available to teachers, adaptations of vans and buses for multiply handicapped students, the human resources necessary to provide the low-ratio instructional arrangements sometimes needed, the hours in which school is typically in session, the relative competency levels of personnel — these are but a-few examples. As logistical and practical realities (and limitations) exist in all environments, the educational community must make systematic attempts to adapt to an even transient those realities so as to interfere least with the development of an individual student. In our Judgment, given commitment, ingenuity, and vital resources, many logistical and practical "realities" used in the past as barriers to educational growth can be circumvented.

NUMBER OF ENVIRONMENTS. This refers to the number of environments in which a specific skill is required. Assume that a severely handicapped student who lives in an apartment building has the opportunity to mow a lawn, but only when he visits the house of his grandmother. Lawn-mowing skills for that student are required in only one environment. Assume that a student in the classroom has been required to put pegs into peg holes several times daily for 18 years and that the activity of putting pegs into peg holes is not required in any other environment in which that student functions. Assume that a severely handicapped student works part time cleaning extremely large pots, pans, and skillets in the restaurant of his uncle. In the situations described above, the students were taught skills that were required of them in only one environment. Clearly there are situations in which skills should be taught even though they are required in only one environment. Clearly there are situations in which skills should be taught even though they are required in only one environment. On the other hand, there are many skills that are required in relatively many environments; e.g., the skills needed to use a restroom. Obviously, the number of environments in which a skill is required must be considered in relation to other dimensions when developing an IEP.

NUMBER OF OCCURRENCES. This refers to the number of times a skill is required within an environment. A student might participate in the trimming of a Christmas tree in his home, at the home of a friend, at his church, in his classroom, and at the home of his grandmother. However, the skills required to trim a Christmas tree are generally only performed once a year. On the other hand, a student whose vocational training consists of operating a postage meter might use that postage meter in only one environment, but nigh use it over 200 times a day during 230 days in a year. Although Christmas tree trimming is a skill required in many environments and operating a postage meter is a skill required in only one, operating a postage meter is required and expected many more times in a day and in a year than is Christmas tree trimming. Obviously tills dimension must be considered in relation to many others, particularly since there are skills required in many environments that rate less of a priority than skills required in only one.

SOCIAL SIGNIFICANCE. This refers to how a skill affects the general social acceptability of a severely handicapped student. There are many skills that can be taught that will enhance general social acceptance. For example, many severely handicapped students can be transported on public buses. However, if a bus riding student is excessively boisterous or blatantly self-stimulates and self-mutilates, the probability of acceptance by nonhandicapped persons is nullified. In addition, if a severely handicapped student "does not try hard," or lets his/her tongue hang cut and drools, or dresses inappropriately, or sits inappropriately in a public place, the probability of social acceptance is reduced. Obviously, if a severely handicapped student can be taught the skills necessary to act appropriately on a public bus, to hold his/her tongue in his/her month, to sit appropriately, etc., it is far more likely that constructive interaction with nonhandicapped peers will be possible.

PROBABILITY OF SKILL ACQUISITION. This refers to the educational return in relation to invested instructional time, effort, and other resources. Assume that a 16-year-old severely handicapped student has been receiving formalized instruction in shoe tying for the past 10 years and is still not able to tie his/her shoes. Critical questions that must be confronted are: How much additional time, effort, and resources should be expended on such an objective? What is the probability of a reasonable return for what might be invested? What other skills night be addressed that might yield a greater return for invested time, effort, and resources? Certainly there are situations when one should abandon once justifiable objectives and substitute other skills with a higher acquisition probability.

MINIMIZATION OF PHYSICAL HARM. This refers to the consideration of reducing physical harm when teaching in natural environments. In the past, severely handicapped students have been systematically excluded from many of the natural hazards to which nonhandicapped students are exposed daily; e.g., stairways, public streets, construction sites, lakes, medicine cabinets, and chemical cleaners. If these students are to spend more and more time in natural environments such as group homes, chronological age appropriate regular schools, and public parks and recreation facilities, it is critical that they be taught as many of the skills as possible that will allow then to function in those environments with minimum risk of physical harm.

FUNCTIONAL NATURE OF A SKILL. This refers to a skill used to complete a necessary task. A general strategy that might be applied when attempting to determine the functional nature of a skill is to ask the question, If the student does not perform the action, will it be necessary for someone else to perform it? If the answer is affirmative, it could be considered a functional skill. For example. if a severely handicapped student does not put a peg in a pegboard and walk on a balance beam, will the teacher have to do so? If a student does not pour his/her juice, will the teacher have to do so? If a student does not draw a line from a girl to a house, will the teacher have to do so? As there are notable exceptions to such a generalization (most single-person recreational actions for example), such a strategy should be used with caution.

CHRONOLOGICAL ACS APPROPRIATE NATURE OF A SKILL. This refers to a Significant dimension of particular skills: whether that skill is performed by either nonhandicapped chronological age peers or older persons.- Assume that a 16-year-old is ascribed a mental age of 2 on the basis of an IQ test. Should the primary focus of the curri--cnla be to, teach that student to perform skills that would be taught 2 year-olds, or should the primary focus be to teach that student to participate in activities in which 16-year-olds and older nonhandicapped persons engage? In our view, of course, the latter is the choice (Brown, et al., 1979).

16. RELEVANT RESEARCH. This refers to assigning priorities to curricular content using applicable and valid information or inferences from research findings. Unfortunately, relatively little scientifically credible research has been conducted in relation to the longitudinal educational development of severely handicapped students. Teachers are usually offered inferences from research that are presumably related to the problems they confront daily. It is to be hoped that such a situation will be rectified in the near future.

17. SUMMARY. It is one thing to compile a list of dimensions to consider when designing an IEP; far more complex and difficult is the task of designing a strategy that elicits the agreement of all persons involved with regard to the final characteristics of an IEP. At first glance the process recommended here might appear cumbersome, complex, and time-consuming in relation to most of the processes currently in use. However, we believe that in the future present processes will indeed become more demanding, complex, and time-consuming, because there can be no doubt that new dimensions will — and must be added. On the other hand, consider the relative quality of an IEP if we related it to only three of the dimensions; that is, if we taught only chronological age appropriate non-functional skills in artificial environments in response to artificial cues and correction procedures; if we taught only from commercially available "kits"; or if we considered only parent preferences.

PHASE VI: THE DESIGN AND IMPLEMENTATION OF INSTRUCTIONAL PROGPAMS

The term "instructional program" here connotes an open-end strategy that might assist teachers to organize and plan for instructional interactions with severely handicapped students. . Williams, Brown, end Certo (1575) delineated several basic components of an instructional program. More specifically, they proposed that before a teacher engaged in instructional interaction with a severely handicapped student, at least the following eight nonmutually exclusive factors should be addressed:

I. What does a teacher intend for the student to perform (What does a teacher intend to teach the student)?

II. Why does a teacher want the student to perform a specific skill?

III. How does a teacher intend to teach the student to perform a a skill?

IV. How can a teacher empirically verify that the skill of concern is being or has been taught?

V. Can the student perform the skill at a situationally acceptable rate?

VI. What does a teacher intend to use as vehicles (instructional materials) for the skill to be acquired and performed?

VII. Can the student perform the skill across:

a. Persons;
b. Places;
c. Instructional materials;
d. Language cues?

VIII. Can the student perform a skill without directions to do so from persons in authority? (p. 124)

This strategy for organizing instructional interactions has been used by many persons- in many places. However, as experiences accrued it became necessary to revise, redefine, combine, supplement, etc., many of these factors. 3elow we attempt to present a modified version of some of the basic concepts presented in that paper.

Assume that a teacher has implemented individualized versions of the stategies presented in Phases I through V. An instructional-program format is now offered as one strategy for organizing information already available and for delineating some of the critical additional information needed to teach a severely handicapped student to perform a new skill sequence.

Component 1: A written statement should be provided that contains a description of the specific skill sequence needed by a specific severely handicapped student in order to engage in a particular activity.

This component attempts to ensure that the following information will be provided: a delineation of the curricular domain, the environments, the sub-environments, and the activities in which the skill sequence is required; an empirically verifiable skill analysis; and a listing of empirically verifiable prerequisite and correlated skills.

Component *2:* A written statement should be provided that contains an explanation as to why it is important that attempts he made at this time to teach a student the specific skill sequence.

This component attempts to ensure that the following information will be provided: the critical reasons why this skill sequence should be taught at this time; and a listing of some of the negative (developmental) consequences that might accrue if the skill sequence is not taught at this time. Obviously. the dimensions offered in Phase 5 should be used to secure this information.

Component 3: A written statement should be provided that contains a description of how a student will be taught to perform the skill sequence of concern.

This component attempts to ensure that the following information will be provided a description of the instructional arrangement that will bo used; a

description of the ecological inventory procedures used to determine the cues and correction procedures operative in the natural environments in which the skill sequence will be performed; the hierarchy of cues and correction procedures that will be used to teach each skill; a description of the ecological inventory strategies used to determine the reinforcement contingencies apparently operative in the natural environments; and a description of how the student will be taught to perform the skills contingent upon naturally occurring reinforcement contingencies.

A written statement should be provided that contains descriptions of performance criteria that will be sought.

This component attempts to ensure that the following information will be provided: performance criteria (such as rate, latency, intensity, response time, interresponse time, and duration) that will be sought; and a description of the ecological inventory strategies used to determine performance criteria required in the natural environments.

A written statement should be provided that contains a description of the instructional materials that will be used.

This component attempts to ensure that the following information will be provided: a listing of instructional materials that will be used and a precise description as to how materials available in natural environments will be substituted for any artificial materials.

A written statement should be provided that contains descriptions of the measurement strategies that will be used to record student progress.

This component attempts to ensure that the following information will be provided: measurement strategies, including data sheets, graphs, and other information, that will be used to record and communicate the student's progress, or lack thereof, through the skill sequence.

CONCLUSION

At least three points seen in order. First, in this paper curricula-devaloptnent strategies have been emphasized and administrative strategies given only cursory attention. It is assumed that local educational agencies will create and implement administrative procedures appropriate for Che design, implementation, and evaluation of IEPs. These administrative procedures would include processes for securing needed information, for delineating the administrative and other personnel responsible for providing services, for establishing dates of initiation, and for monitoring strategies. Second, the IEP process suggested will probably require more tine, effort, etc., than is typically expended by teachers and others; it also demands more information than is typically furnished by the forms used by most local education agencies. In our judgment, this additional commitment of resources is warranted, and certainly it is not without ample rewards. Third, the phases can be implemented neither consecutively nor episodically. For these reasons, we recommend that teachers and the significant others in the life space of a severely handicapped student decide as a unit how and when each phase might be addressed for each student.

TABLE 1

DIMENSIONS TO CONSIDER IK PREPARING CURRICULAR CONTENT FOR A SEVERELY HANDICAPPED STUDENT

1. Teacher preferences
2. Administrator preferences
3. Ancillary-staff preferences
4. Parent/guardian preferences
5. Student preferences
6. Unique student characteristics
8. Presumed logistical and practical realities
9. Number of environments
10. Number of occurrences
11. Social significance
12. Probability of skill acquisition
13. Minimization of physical harm
14. Functional nature of a skill
15. Chronological age appropriate nature of a skill
16. Relevant research

REFERENCS

Alpern, G., & Boll, T. Developmental profile. Aspen, CO: Psychological Development Publications, 1972.

Bayley, N. Bayley Infant Scales of Development. New York: Psychological Corporation, 19GS.

Brown, L., Branston, M.B., Baumgart, D., Vincent, L., Falvey, M., & Schroeder, J. Utilizing the characteristics of a variety of current and subsequent least restrictive environments as factors in the development of curricular content for severely handicapped students. AAESPH Review, 1979, 4(4), 407-424.

Brown, L., Branston, M.B., Hamre-Nietupski, S., Johnson, F., Wilcox, B., & Gruenewald, L. A rationale for comprehensive longitudinal interactions between severely handicapped students and nonhandicapped students and other citizens. AAESPH Review. 1979, 4(1), 3-14.

Brown, L., Branston, K.B., Hamre-Nietupski, S., Pumpian, I., Certo, N., & Gruenewald,L. A strategy for developing chronological age appropriate and functional curricular content for severely handicapped adolescents and young adults. Journal of Special Education. 1979, 13(l), 81-90.

Falvey, M., Ferrara-Parrish, P., Johnson, F., Pumpian, I., Schroeder, J., & Brown, L. Curricular strategies for generating comprehensive, longitudinal and chronological age appropriate functional individual vocational plans for severely handicapped adolescents and young adults. In L. Brown, M. Falvey, D. Baumgart, I. Pumpian, J. Schroeder, & L. Gruenewald (Eds.), Strategies for teaching chronological age ap?ropriate functional skills to adolescent and young adult severely handicapped students. Vol. IX, Part 1. Madison, WI: Madison Metropolitan School District, 1979.

Frankenberg, W., & Dodd, J. Denver Developmental Screening Test. Denver, CO: Ledoca Project & Publishing Foundation, 1966.

Gosel1, A., & Amatruda, C. Developmental diagnosis: Normal and abnormal child development: Clinical methods and applications. New York: Hoeber, 1942.

Hamre-Nietupski, S., Branston, M.B., Ford, A., Stoll, A., Sweet, M., Gruenewald, L., & Brown, L. Curricular strategies for developing longitudinal interactions between severely handicapped and nonhandicapped individuals in school and nonschool environments. In L. Brown, S. Hamre-Nietupski, S. Lyon, M.B. Branston, 11. Falvey, & L. Gruenewald, (Eds.), Curricular strategies for developing longitudinal interactions between severely handicapped students to acquire and Perform skills in response to naturally-occurring cues and correction procedures. Vol. VIII, Pert 1. Madison, WI: Madison Metropolitan School District, 197C.

Williams, W., Brown, L., & Certo, M. Basic components of instructional programs. Theory into practice. 1975, 14(2), 123-136.