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A Guide for the Implementation of a Commnity-Based Instructional Model to Teach Students with Severe Handicaps

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A GUIDE FOR THE IMPLEMENTATION OF A COMMUNITY-BASED INSTRUCTIONAL MODEL TO TEACH STUDENTS WITH SEVERE HANDICAPS

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A GUIDE FOR THE IMPLEMENTATION OF A

COMMUNITY-BASED INSTRUCTIONAL M0DEL

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The need for and implementation of a community-based model for teaching language and communication skills to students with severe disabilities was studied. A guide was presented that includes a list of critical issues and solutions for a school district to consider prior to the implementation of a community-based instructional model. Suggestions and resources were included to be used by teachers to help make decisions about selecting appropriate instructional materials and strategies for teaching students with severe disabilities.

TABLE OF CONTENTS

CHAPTER 1

BACKGROUND OF THE STUDY

Since the mid 1970s the public education system has undergone tremendous policy changes in terms of student population. Through litigation and key legislation, most notably Public Law 94-142, The Education For All Handicapped Children Act of 1975, and more recently, P.L. 101-476, The Individuals with Disabilities Act of 1990 (I.D.E.A.), the schools' doors have been opened to individuals who, not so many years ago, were confined to state or private institutions. Thus, the public school system is currently providing educational programming for children with extraordinary physical, emotional, medical, and mental challenges.

Ferguson (1985) stated that an egalitarian public policy to admit students with severe handicaps into the public schools has not yet led to the further step of a recognizable, coherent curriculum approach for these most recent students. Professional efforts to gain public school recognition for students with severe handicaps now yields to the ever more difficult task of deciding what, where, and how to teach.

Within the school setting, language and communication instruction for individuals with severe disabilities can often be restricted to the child's classroom and to the speech therapy room. With language proficient children of average intellect, skills taught in the classroom environment transfer readily to the natural opportunities in the social environment (Cipani, 1989). Browder (1989) warned that generalization for students with severe disabilities, to facilities outside the school setting, cannot be assumed. Furthermore, experiences which occur primarily in

isolated settings, such as physical therapy or speech training, may not have much relevance to important lifeskills in other school settings or to settings outside the school. According to Cipani (1989), a major focus of a language intervention program for children with severe handicaps must focus on developing communication skills in the natural setting. The logic behind this out-of-class instruction is that because students with severe handicaps do not generalize from one setting to another, it is more efficient to key instruction to the criterion environment, that is, an actual work setting (Horner, Meyer, & Fredricks, 1986).

In October of 1990, the Education of the Handicapped Act (EHA), amended to the Individuals with Disabilities Education Act of 1990, was signed into law. Included among the changes and amendments brought about by P.L. 101-476 was the "transition services" provision. The transition provision requires the Individualized Educational Program (IEP) team to include a plan of transition services for every student who has an active IEP by at least age 16. If the IEP team so decides, transition may begin at age 14 or younger (Martin, 1991).

In part, the definition of transition services includes student participation in the community. By utilizing the community as an instructional setting at the elementary level, students with severe disabilities will have received the benefits of community participation and experiences well before the age mandated by P.L. 101-476. Having the early community experience could greatly benefit those students needing more frequent instructional exposure and trials in order to achieve their specific goals and objectives.

Statement of the Problem

It is known that students with severe disabilities take significantly longer to learn skills and to generalize learning to other settings than it does their nondisabled peers. To overcome the problem of generalization, it is important to teach these students in natural settings where the skill being taught can be applied directly. The problem is that there are no guides available in rural Washington state which can be used to teach elementary students with severe disabilities, functional communication skills in natural settings.

Purpose of the Study

The purpose of this project is to develop a process for implementing a community-based model of instruction in Omak, Washington which can be used to teach 3rd through 5th grade elementary students with severe handicapping conditions, language and communication skills. The guide will contain the following resources:

1. A list of perceived obstacles associated with the community-based instructional model.
2. Recommendations for implementing a community-based instructional model in Omak, Washington and other rural settings.
3. Description of a process to develop a functional communication program for individual students.
4. Description of a systematic process to evaluate student progress.

Definition of Terms

The following definitions are provided for certain words and phrases to delineate their meaning as they are used in this paper.

Augmentative Communication Systems

Augmented communication include the adaptations used to help a student communicate. These adaptations are supplemental to natural gestures, speech, vocalizations, facial expressions, and other means the student may have to express messages. Depending on the student's capabilities in a number of areas, the adapted or augmentative communication techniques can require the use of either a device (aided technique) or the body itself (unaided technique). Some examples of the most common unaided and aided augmentative communication techniques are listed below:

1. Unaided
    a. Vocalizing
    b. Verbalizing
    c. Using facial and body movements
    d. Gesturing
    e. Manual signing
    f. Pantomiming
2. Aided
    a. Using a symbol board/booklet
    b. Using a pencil and paper
    c. Using electronic aids and computers
    d. Using symbols displayed in specific locations (Ford, Schnorr, Meyer, Davern, Black, & Dempsey, 1989).

Community-Based Instruction

Community-based instruction relates to placement of students with severe handicapping conditions in regular schools and includes systematic instruction in community settings (Foley, 1988).

The community-based instructional model is often associated with vocational education programs; at the elementary level, instruction is more an extension of what is learned in the school setting to settings outside of school where it is anticipated the student will be functioning.

Curriculum-Based Assessment (CBA)

Curriculum-based assessment has been defined by Blankenship (1985) as "the practice of obtaining direct and frequent measures of a student's performance on a series of sequentially arranged objectives derived from the curriculum used in the classroom" (p. 234). Tucker (1985) refered to the CBA as "the ultimate in 'teaching the test,' because the materials used to assess progress are always drawn directly from the course of study" (p. 200).

Ecological Inventory

According to Sailor, Wilcox, and Brown (1980), the term is used to refer to actions undertaken to secure critical information about the school and community environments in which the student might function in the future. Specifically, the inventory consists of identifying and listing the components of behaviors demonstrated by nonhandicapped persons in natural environments (the specific topology, rate, frequency, intensity, and duration). The information obtained through the use of ecological inventory strategies can assist teachers in designing and implementing functional and effective preparatory educational programs for students with severe disabilities (Sailor, Wilcox, & Brown,1980).

Functional Skills

Brown, Branston, Hamre-Neitupski, Pumpian, Certo, and Gruenwald (1979b) explain functional skills to be those skills that are frequently demanded in natural domestic, vocational, and community environments. Functional skills are not limited to performances which affect the actual survival or physical well-being of an individual; they also include the variety of skills which influence a student's ability to perform as independently and as productively as possible in home, school, and community. By contrast, nonfunctional skills are those that have an extremely low probability of being required in daily activities.

Generalization

Generalization is described as a set of knowledge and behaviors that are performed reliably across the range of natural environments and situations that the student encounters in his or her day-to-day activity (Horner et al., 1986).

Gestural Communication

Gestures are commonly used by people, with or without handicaps, to supplement speech. Gestures might include motions such as shaking a fist to express anger or waving to greet another person. However, gestures are not to be confused with sign language. Snell (1987) reported that "natural gestures are not language per se; rather, they are pre- or extra-linguistic signals that can be used to convey a particular, usually concrete, message in a particular context" (p. 274). In contrast, sign language is a language with various grammatical and semantic rules.

Individualized Education Program

An Individualized Education Program (IEP) is a written agreement between the parents and the school about what the child needs and what will be done to address those needs. It is, in effect, a contract about services to be provided for the student. By law the IEP must include the following: (1) the student's present levels of academic performance; (2) annual goals for the student; (3) short-term instructional objectives related to the annual goals; (4) the special education and related services that will be provided and the extent to which the child will participate in regular education programs; (5) plans for starting the services and the anticipated duration of the services; and (6) appropriate plans for evaluating, at least annually, whether the goals and objectives are being achieved (Kauffman1989).

IEP Team

The Washington Administrative Code requires the following participants to be present at IEP team meetings: (a) A representative of the school district other than the student's teacher who is qualified to provide or supervise the provision of special education and related services; (b) the student's regular or special education teacher; (c) one or both of the student's parents, or legal guardian; (d) the student, if appropriate; (e) a member of the student's assessment team; and (f) other individuals at the discretion of the district or the parent or the adult student (State of Washington, Rules and Regulations, 1991, WAC 392-171-456).

Natural Settings

Natural settings are environments or naturally occurring times where behaviors would be expected to occur. For example, the most natural setting to teach dressing and zipping skills would be just prior to going out to recess. Dressing would ideally not be taught in isolation (Neel, & Billingsley, 1989).

Students with Severe Handicaps

For the purpose of this study, the term "students with severe handicaps or students with severe disabilities" is used to refer to students with moderate/severe or profound mental retardation, who may have accompanying physical disabilities, visual and/or hearing impairments or deaf/blindness, and behavior impairments.

Simulation

Horner et al. (1986) state that simulation has been used to describe a wide variety of instructional materials, settings, and formats. "The inherent logic of all simulations is to re-create demands of actual performance environments in the classroom in order to teach responses required under natural conditions" (p. 301).

Transition Services

Martin (1991) defined transition service as follows: Transition services are a coordinated set of activities for a student, designed within an outcome-oriented process, which promotes movement from school to post- school activities, including post-secondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation.

The coordinated set of activities shall be based upon the individual student's needs, taking into account the student's preferences and interests, and shall include instruction, community experiences, the development of employment and other post-school adult living objectives, and, when appropriate, acquisition of daily living skills and functional vocational evaluation.

CHAPTER 2

REVIEW OF RELATED LITERATURE

New Approaches in Teaching Students with Severe Handicaps

Many factors contribute to shape programming for students with severe disabilities and a quick survey will reveal much diversity among programs. No commonly recognized curriculum or performance outcomes exist for this population. The only controls on programming in the State of Washington are the general guidelines established under section 392-171-461 of the Washington Administration Code. Goals and objectives are often written based upon a teacher's perception of a student's future independent functioning potential (Ferguson, 1985). Two teachers could have different student outcome expectations which could result in dramatically different programs. Access to the community and available resources could also determine, to some degree, the focus of instruction.

In reviewing the literature, the writer discovered the current philosophy for teaching students with severe handicaps to be quite different from the predominant developmental approached used in the 1970's and 1980's. The past practice of segregating students with severe handicaps from their nonhandicapped peers during the 70's and 80's is far from the norm today.

A more acceptable approach to teaching students with severe handicaps in the 1990's was described by Falvey (1986), Neel, & Billingsley (1989), Ferguson (1985), and Horner, Meyer, & Fredericks, (1986) as an approach in which the curricula is functional, chronologically age appropriate, and reflects transitions. In

addition, the authors philosophically agreed that instructional arrangements should vary and include opportunities for individual, small - and large-group instruction involving other students including nonhandicapped peers. These authors stressed that instruction should be systematic, relevant to the student's individual needs and learning style, and ultimately assist the student in achieving the goal of independent living to the greatest degree possible. Curriculum-based assessment and data-based decision making are also recognized by many special educators as integral components of effective instruction for students with severe disabilities.

Natural Environments for Learning Functional Skills

Natural environments can be thought of as "least restrictive environments" both within the school setting and beyond the school boundaries. These environments are important to curriculum development as a location for training students with severe handicaps and as a source of curricular content (Brown et al., 1979b). Least restrictive environments should be identified for each individual student; Brown, Branston-McClean, Baumgart, Vincent, Falvey, & Schroeder (1979a) listed four critical steps in identifying least restrictive environments:

1. Delineate the current and subsequent chronological age-appropriate recreational/leisure, educational, vocational, domestic, and general community environments that are *currently available and used* in the community environments of concern by both nonhandicapped and severely handicapped persons;

2. Delineate the current and subsequent chronological age-appropriate recreational/leisure, educational, vocational, domestic, and general community environments that are currently available and used *in other communities in the country* by both nonhandicapped and severely handicapped persons;
3. Delineate the current and subsequent chronological age-appropriate local, recreational/leisure, educational, vocational, domestic, and general community environments that are used by nonhandicapped peers and others which also are *potentially available and usable* in the community of concern by severely handicapped persons; and
4. Decide upon, develop, and use the environments that best represent the concept "least restrictive" for an individual severely handicapped person in a specific community. Certainly such decisions should be individualized and based upon criteria that are functionally related to maximal development (p. 34).

It has been known for some time that students with severe disabilities can learn certain skills that help them become more independent in home, work, and community settings. Many students with severe handicaps, however, are unable to take a skill from one setting and perform it in another. Foley (1988) found that students with severe handicaps could not generalize skills taught under simulated conditions to the actual environment in which the skills were needed.

Falvey (1986) maintained that instruction for students with severe handicaps should occur within a wide variety of natural environments. If, for example, a target skill for a student is to make eye contact while greeting another person, the training should take advantage of natural opportunities to greet persons in community settings, at school, and in the familiar surroundings of the student's home. Skills taught in the manner just described have the effect of teaching generalization.

Community-based learning has additional benefits outside of generalization. Training in the community is beneficial because it increases the opportunity for meaningful interaction and socialization with members of the general population. The experiences encountered by students with severe handicaps while in the community will likely represent experiences with which they will be expected to contend as independently functioning adults. Other benefits reported by Foley (1988) are that community-based education is more cost and time efficient and more productive for adult life training than classroom-based programs.

A critical factor in utilizing the community-based model is the attempt to make all outings blend into the normal activities of the environment. For example, a grocery shopping trip with an instructional assistant, a teacher and six students with severe handicaps would not represent an actual shopping trip for a person with severe handicaps. The experience should not appear to be something unnatural. As a rule, the number of students with severe handicaps on any particular outing should reflect the proportions normally occurring in the general population, that is, about

1 to 2 percent of the total people present (Falvey, 1986). Additionally, instruction can only be effective if the number of students being taught is reasonable.

Sailor and Guess (1983) developed an instructional model for teaching functional life skills curriculum in three environmental domains. The environmental domains are the following:

1. The classroom: The classroom is the least restrictive public or private education setting; never a segregated, isolated facility.
2. The school: The greater physical area outside the classroom including the playground, hallways, restroom, gym, locker rooms, cafeteria, and partial mainstream situations such as art or music classes, the library, and adaptive P.E.
3. The community, or nonschool areas: These settings include parks, playgrounds, pools, stores, restaurants, work environments, residential environments, and other age-appropriate community environments.

Sailor and Guess' model included the optimal percentage of time that should be devoted to instruction within each environmental domain relative to the student's age. Table 1 presents Sailor and Guess' recommendations for instruction.

Table 1

Percentages of Optimal Educational Time Spent in Three Environmental Domains.

Environment	Age 3-6	%	Age 6-9	%	Age 9-12	%	Age 12-16	%	Age 16-21	%
Classroom		65%		40%		25%		10%		0%
School(nonclass)		25%		35%		25%		15%		15%
Community		10%		25%		50%		75%		85%

Appropriate Curriculum for Students with Severe Handicaps

Currently there exist two major educational philosophies about how best to teach students with severe handicaps. One approach, loosely termed sensory-developmental or "bottom-up", suggests that curriculum content should be based on developmental sequences in fine and gross motor, receptive and expressive communication, social, sensorimotor, cognitive, and self-help curricular areas (Goetz, Guess, & Stremel-Campbell, 1987). The educator's task using this approach is to determine the student's developmental level and select those skills for instruction that would represent the next logical developmental milestone if that student were not handicapped. A major concern in using the sensory-motor approach is that students could spend an inordinate amount of time mastering sequential skills. As students get older some of the developmental skills not yet mastered become inappropriate for their age level and have very little to do with skills that can be beneficial to their independence.

Goetz et al. (1987) defined the second major approach as ecological or "top-down", and stated that it is a radical departure from the sequential approach. With this method skills taught are those which are useful immediately or in the near future, across a range of natural environments. Through a series of action sequences, the teacher attempts to determine the skills needed by students with severe handicaps to function in a variety of current and subsequent natural environments. The student is directed to perform a skill and data are collected to: 1) determine if the student is responding to natural cues and correction procedures; and 2) establish a discrepancy between current performance and the level of

performance necessary to independently accomplish the task. The resulting discrepancy skills are incorporated into instructional objectives for teaching those skills in that particular setting. Brown et al. (1979a) described ecological inventory strategies as:

> . . . processes an individual teacher can use to formulate educational programs based on the skills of an individual student, the priorities of parents and/or guardians, available resources, professional judgments, the specific environments in which a particular severely handicapped student is being prepared to function, and so forth (p. 418).

A review of the current literature supports the ecological approach as being the most appropriate of the two philosophies and has the greatest potential for meeting the immediate needs of individual students.

Within the communication domain, previous educational efforts and programs for students with severe handicaps have concentrated primarily on those students who have responded, at least in part, to instructional procedures designed to teach or enhance speech, signing, or other conventional symbolic modes of expression (Siegel -Causey, & Guess, 1989). It is known that these past techniques and programs have not been effective with a significant number of students who, for whatever reason, have failed to respond to existing approaches and orientation. Siegel-Causey, & Guess (1989) noted the following:

> Equally important, we have come to understand that past efforts might well have 'missed the mark' in both interpreting the communication needs of students with the most profoundly handicapping conditions, and in applying that which was

considered to be state-of-the-art practices. (p. xi)

Currently, persons working with students with severe handicaps are more apt to recognize and accept subtle gestures and behaviors as forms of communication than was previously the case. Any attempt at expressing a want or need can be viewed as a positive communication building block.

Assessment As A Multipurpose Process

Among students with severe handicaps, a majority have some degree of language delay, and generally 25% of their educational objectives are related to communication (Cipani, 1989). Once an individual has the ability to understand and use even the basic forms of the language system common to his or her social community, the individual then has the potential to exert more control within that environment, (Horner et al., 1986).

Since communication is so vital to students becoming more independent, and a great many students with severe handicaps are at risk for not developing intelligible speech, the need exists to somehow determine the most effective communication system, or combination of systems for each student.

Falvey (1986) recommended that because the majority of students with severe handicaps function substantially below their chronological age peers, the use of norm-referenced or standardized assessment tests be minimized. If these tests are used, extreme caution must be exercised when interpreting the results. For students for whom there is a significant discrepancy between their chronological and mental ages, developmental ages and/or intelligence scores will not provide specific information regarding their needs and preferred learning methods. Richman,

Seestedt, & Brandell (1988) found that a large proportion of students with severe disabilities do not cooperate in the formal test setting, and many of these children cannot attend to standardized test procedures which are necessary in order to complete the assessment battery.

Since few norm-referenced assessment measures can be used successfully to evaluate individuals with limited oral language, the evaluation team must rely upon alternative methods to gather information pertinent to making communication programming decisions. Falvey (1986) noted that the assessment process, in order to be most revealing, should be multidisciplinary including the use of developmental measures, observational procedures, ecological and student repertoire inventories, interviews and questionnaires with parents and significant others, and possibly the referral of parents to other experts.

Determining what to assess should be decided prior to the actual assessment. Several areas that should be assessed with limited language and nonverbal students are: receptive understanding; expressive communication (attempts both verbally and nonverbally); cognitive understanding such as memory, perceptual discrimination, and attending; communication functions (determining what the student uses communication for); interaction skills - the frequency and types of interaction; and finally the physical, motor, and sensory skills (Falvey, 1986).

In recent years, augmentative communication systems have been recommended for students for whom oral communication is not a viable option. The decision to recommend an atypical method of communication has a pervasive influence not only on students with communication disorders, but also upon those with whom they

interact (Nietupski-Hamre, Nietupski, & Rathe, 1986). Decisions about augmentative systems should ultimately be made based on data gathered in some systematic fashion.

Nietupski-Hamre, et al. (1986) found that nonverbal systems to teach communication skills to students with severe disabilities are often selected in an arbitrary manner. Too often teachers make decisions about how and what to teach based on subjective factors such as the following:

1. All the other teachers in the program are using a particular system.
2. The teacher next door or the communication specialist "firmly believes" that one particular system is "the answer" for all students.
3. Teachers take a course that emphasizes one particular system without exposure to alternative systems that may be more appropriate for some students.
4. Program administrators or consultants strongly suggest that all teachers use one particular nonverbal system for all students.
5. A particular system is a popular trend in the profession (Nietupski-Hamre, et al., 1986).

Teachers who adopt programs based on decisions like these, can only accidently hit upon an appropriate match with the student. Fortunately there are several data-based processes which incorporate follow-up data keeping to help make decisions about programs. One method is a decision matrix consisting of ten clinical considerations related to cognitive status, oral reflex status, language and motor speech production, intelligibility, emotional factors, chronological age, previous

therapy, speech imitative ability and the environment. The decisions generated from the matrix are specific as to whether to elect, delay, or reject an augmentative system (Shane & Bashir, 1980).

Another method of decision making evaluates the student's physical limitations relative to the variety of augmentative devices within the realm of choice. Students are first assessed for the following characteristics: whether they are ambulatory or not, whether they have control of arms, hands, and fingers, and their ability to attend to the actions of others and respond to verbal or gestural cues. If the data do not yield a definitive choice, two or more systems are used in training the student. A systematic approach is implemented beginning with baseline data gathered as the student interacts with each system. The training continues from 10-15 days with the student's performance being charted. The charted results should reveal the best system for the student, but if the results are equal, the choice could be made by significant others outside the school environment (Nietupski-Hamre et al., 1986).

Once an alternative or augmentative communication system has been selected, choosing or developing a language program becomes the next challenge. IMPACT is a functional curriculum handbook that includes informal assessment inventories to help teachers and parents set curriculum priorities. The Environmental Inventory for the Home and Community chapter has three parts. Part one includes family demographics and usual activities. Communication patterns and how he or she communicates are carefully documented in part two. Part three samples the student's response to change, leisure time activities and self-help skills that have been mastered (Neel & Billingsley, 1989).

The Environmental Inventory for School and Community chapter of IMPACT describes typical school and community activities, communication patterns at school, and the level of functional activities to which the student has access. The parents of the student respond to statements and questions contained in the inventory. Provided in the curriculum handbook is a step-by-step process for summarizing information as well as samples showing how to translate this information into an individualized education program (Neel & Billingsley, 1989).

The Implications of Data Collection

Continuous evaluation of student performance is essential in all settings where instruction occurs. While in the community, any data to be collected on students should not be noticeable to others (Browder, 1989). In the classroom, for convenience and efficiency, teachers frequently record student performance on data systems attached to binders or clipboards. In settings outside the classroom this type of student evaluation would most likely appear peculiar and could draw attention to an otherwise normal experience. A less conspicuous method would be to mark behaviors or lack of behaviors on a small slip of paper or on the back of a shopping list.

There are many data systems from which to choose. The effectiveness of the instruction relates directly to how the information is gathered and the way in which the teacher makes adjustments based upon the data that are collected (Salvia & Hughes, 1990). Data-based decision making relies on two types of assessment data. *Formative* data are collected during the process of instruction and are useful for decisions about how to teach and what to teach. *Summative* data are collected at the

end of an instructional sequence to evaluate the effectiveness of instruction and again, to determine what to teach (Salvia, & Hughes, 1990).

Certain educational objectives are basic and straight-forward, and collecting and interpreting data can be a fairly simple matter. For example, when assessing a student whose goal is to orally read a passage at a rate of 25 words per minute, the teacher needs merely to time the student's reading sample and tally the total words read within the time allowed. When evaluating a student with severe disabilities engaged in a multi-step skill, such as expressing a want or need using an augmentative communication system, a dozen steps may be involved with instruction and evaluation needed at each step. It is sometimes more revealing to have a skill task analyzed and the various steps listed on a single data sheet. When working with students who have severe handicaps, it is difficult to know just when it is appropriate to advance in the curriculum or to know when to make program adjustments.

An example of a systematic instructional decision making process is the three trial paradigm (Neel, & Billingsley, 1989). Using this system, the student must successfully accomplish a task, as described in the objective, three consecutive times in order to move on to the next skill level. If the student is successful for two out of three trials no intervention occurs at that point, but three trials are repeated again. In the case of one successful trial, or a repeated two successes out of three, a program change is implemented and the instructor begins collecting data again. Using the three trial paradigm, programming becomes a very systematic process. If the data are noted and evaluated diligently, the curriculum-based assessment (CBA)

reports when to continue, when to remediate or when to try another approach. Snell (1987) warned that data are not useful unless they are analyzed and used to make decisions concerning effectiveness of the various interventions implemented.

Considerations For Implementing A Community-Based Program

The community-based instructional model presents unique challenges not so noticeable within the school setting. Falvey (1986) listed some of the practical and logistical issues that arise as educational programs examine and modify the services provided to students with severe handicaps. These issues are the following:

1. Funding: In many instances, funds are necessary to cover the expenses for transportation, whether the transportation is provided by public transit, private cars, or school vehicles. In order to make the learning experiences as real and relevant as possible, funds are needed for such activities as eating at a restaurant, making a purchase at a grocery store, or participating in local leisure activities. To provide students with opportunities to learn to respond to natural cues and correction procedures, to use natural materials, and to respond appropriately to natural consequences, "real" money must be used.

It is not clear that community-based training programs add to the cost of educating students with severe handicaps. It is quite possible that a net savings to taxpayers may be realized due to increased independence of handicapped students gained through community-based training (Hamre-Nietupski, Nietupski, Bates, & Maurer, 1982).

2. Staffing: Although research is not yet available to provide guidelines for determining the student staff ratios necessary for community instruction, many educators have reported that a ratio of one adult to two to four students allows for appropriate instruction to occur. Since many classrooms are not staffed with such a ratio, creative strategies must be developed in order to provide community training in the appropriate manner (p. 65).
3. Liability: Providing instruction across a variety of environments requires that educators develop specific policies and procedures which will enable them to implement their programs in a safe and responsible manner. Often, the issue of liability--that is, who is responsible for injury or property damage when students are involved in community training--is a major challenge in the development and implementation of a community training program. Policies and procedures must be developed in order to assure adequate insurance protection for students, staff members, school districts, local businesses, and local city governments (p 67).
4. Community access: At least two types of accessibility must be considered when conducting ecological inventories of community environments: attitudinal accessibility and physical accessibility. . . . *Attitudinal* accessibility refers to environments containing persons who are supportive of or at least not opposed to the concept of training students with severe handicaps in their businesses, on their buses, in their parks, and so forth. . . . *Physical* accessibility refers to environments that have no or minimal physical barriers for severely handicapped students (p. 68).

5. Safety: Safety procedures must be established in order to maximize students' participation and minimize the risks within the community training program. Procedures must be developed that minimize the risks for the students as well as the school personnel and school district. Students must be systematically taught and their ability to function safely within community environments continuously assessed (p. 69).
6. Administrative, teacher and parent support: Support and understanding of the purpose and need for community training from various people is particularly important in order to develop and maintain a community-based educational program. . . . Administrators who understand and support the program can, for example, facilitate the implementation of a community-based program, establish the logistics, investigate and obtain liability coverage, and identify and secure fiscal support. Other teachers can, for example, assist in the implementation by team teaching, systematically teaching or verifying generalization of community-based skills. . . . Parents can aid in the implementation of a community-based program by helping to determine the functional skills that should be taught, providing other essential input regarding how and what their son or daughter can learn, and/or recruiting additional assistance for community training (p. 68).
7. Transportation: Providing instruction in a variety of community environments requires that decisions be made on current as well as subsequent transportation needs of the students. School buses can be a convenient, accessible solution for immediate community training.

> However, the end goal of community training is independent community utilization; therefore, it is essential that students be afforded the opportunity to learn to use transportation that will be available once they have graduated from the school program (p. 70).

Each local school and /or school district must address these issues individually so as to establish the necessary policies and procedures that will allow for safe and responsible instruction to occur within their communities (Falvey, 1986).

SUMMARY

It has taken years of program research and development, trial and error implementation, and professional and philosophical soul searching to determine the most effective and efficient way to teach students with severe disabilities. Review of the most current literature suggests that teaching students with severe disabilities functional curriculum in natural settings is best practice. Before a community -based education program can be seriously considered, certain challenges must be recognized and addressed at the district level. Among these challenges are the possibility of additional funding costs; staffing for small group outings; liability issues while off-campus; physical and attitudinal community access; safety to all persons involved; transportation arrangements; and support from parents, teachers, and administration. Horner et al. (1986) have reported that, so far, no problem has proven insurmountable. Different districts have effected their own solutions. The most important first step in setting up such a program is the support and backing of the school board and administration.

Most individuals with severe disabilities require a communication component as a

portion of their overall educational program. Appropriate communication programming results from thorough assessment and continuous data collection. It is generally agreed upon, by proponents of teaching functional curriculum in natural environments, that the assessment process should be multidisciplinary and wide ranging in terms of setting (e.g. the home, school playground, bus, classroom, and community). Results of the assessment process ultimately lead to decision making about programs and assistive communication devices.

CHAPTER 3

Procedures of the Study

Study Population

Students with severe handicaps can truly be a diverse group. Mentally, based on standardized measures, they will fall within the current funding categories of moderately retarded, severely retarded and profoundly retarded. Additionally, it is possible and quite probable these same students may have accompanying physical disabilities including, but not limited to, visual and/or hearing impairments, deaf/blindness and behavior impairments. The collective group of students in Omak Washington, for which a community-based model of instruction is intended, exemplify the general range of conditions described above. The specific handicapping characteristics for each student will not be listed. Each student is unique and individual in terms of strengths and weaknesses and coping strategies. The objective of this study is to implement a community training program for a wide range of students judged by school personnel and parents to benefit from such an educational approach. Students with disabilities entering and exiting Omak will be ever changing. The intent is to have in place a functional educational program that will accommodate a changing clientele.

Methodology

This community-based manual for communication instruction culminates as a result of the synthesis of information gathered from research and data written by many professionals in the areas of community-based training, and communication

curriculum and instructional methodology for the education of students with severe handicaps. Experience, by the writer, in working with students in self-contained and mainstreamed settings, and to a limited degree in the community, provides a foundation for the application of community-based instruction to settings in and around the Omak School District. The following components are included in the community-based instructional manual for the instruction of language and communication skills to students with severe handicaps:

A. Preface

B. Rationale

C. Statement Of Philosophy

D. Recommendations for Implementing A Community-Based Instructional Model

E. Functional Communication Programming

F. Program And Student Evaluation

Limitation of the Study

The community-based communication guide was developed for use with students with severe disabilities in the Omak School District. Its adaptation to students with severe disabilities in other rural settings has not been tried or proven. No claims of curricular appropriateness to other settings is intended if so implied within the guide. The comprehensiveness of the guide is limited to information gathered from visitations, materials, and readings available to the writer at this time.

CHAPTER 4

COMMUNITY-BASED INSTRUCTIONAL GUIDE FOR TEACHING LANGUAGE AND COMMUNICATION TO STUDENTS WITH SEVERE HANDICAPS

A. Preface

This community-based instruction manual is intended for use in Omak as a single component to an otherwise functional curriculum for students with moderate and severe disabilities. While communication is the primary instructional focus of this project, the writer's objective is to develop a process which is to be used to identify each student's needs across many educational areas and environmental settings.

The ecological inventory and student repertoire forms provide the process which allows for the adaptability throughout a range of skill areas and environmental settings. Most essential to this community-based instructional process is a philosophical belief and understanding that instruction and training of all skills for students with severe handicaps must be integrated into each student's repertoire of previously mastered skills, and that training must extend to other natural settings where the skills will be expected of the student. Finally, the training and instruction must incorporate the use of natural cues in the environment and employ natural consequences, as reinforcers.

B. Rationale

Most students with severe disabilities do not advance through the grades at the same rate as their non-handicapped peers. Because their age is often advanced relative to grade level, the potential for repetitious curriculum exists. Electing to implement functional communication goals in natural settings helps to insure that goals address immediate and future needs directed toward each student's individual independence. The argument for community-based education is well stated by Brown, L., Nisbet, J., Ford, A., Sweet, M., Shiraga, B., York, J., & Loomis, R. (1983):

> . . . envision someone who can learn, but who cannot learn as much as 99% of his or her age peers; who needs more time and trials to learn and to relearn than almost all other persons; who remembers some things but forgets more than almost all other persons; who has difficulty transferring that learned in one environment to another; and who rarely synthesizes skills acquired from several different experiences so as to function effectively in a novel situation. Then, ask the question: How much instruction time should be spent in the physical space of a school, and how much should be spent providing direct, individualized, longitudinal, comprehensive, and systematic instruction in the actual nonschool environments in which that someone currently functions and those in which s/he is likely to function upon graduation (p. 74)?

C. Statement Of Philosophy

Justification for teaching students with severe handicaps has largely been mandated by federal law. P.L. 94-142. This law served to force the issue of "appropriate education for all children" when society at large was unwilling or unable to make such a commitment. It is important now to understand that education for students with severe disabilities cannot continue through a model of strict Piagetian learning. Instructing students with severe disabilities at their developmental level will ultimately leave them unprepared for life after public school. Sailor and Haring's description of individuals with severe handicaps is appropriate to this project (1977).

> Severely handicapped children are severely handicapped because they cannot perform skills that other children can perform--not because they are severely retarded, quadriplegic, brain-damaged or fixated in some primitive stage of someone's theory of development. This is a difficult concept, or implication for teaching, to fully grasp initially; but when you understand its full significance, it can act as a powerful catalyst. *Teaching the severely/multiply handicapped person is he process of arranging a relationship between the student and his environment which results in positive experiences for the student and small positive changes in skill acquisition.* This definition of teaching requires that the teacher:
>
> 1. Delineate precisely the responses the child must make to acquire the specified skill;
> 2. Delineate and precisely specify the teacher's activities to insure those

responses; and

3. Verify the existence of changes in the level of responses indicating skill acquisition (p. 73).

Including a list of six assumptions, that served to guide Neel and Billingsley (1989) throughout the development of their Impact curriculum handbook, will help to further establish the intent and motivation for seeking the most appropriate means of teaching students with severe handicaps in Omak:

1. Increasing control over the environment is the major goal of instruction.
2. Communication/social skills are the most important skills a child can learn.
3. Motivation is achieved by ensuring that instruction produces desired results for the student.
4. Functional skills are best taught in their natural context.
5. Instructional priorities come from the individual and his or her environments.
6. Parent participation is the crucial component of the instructional process.

D. Recommendations For Implementing A Community-Based Instructional Model

Each school district may have a specific process for making adaptations to existing approaches of instruction or curricula. The process for curriculum development in the Omak School District is described in Appendix A. Anyone considering a community-based instructional model should consult their own district as to specific procedures for altering current instructional practice.

In a district where community-based or off campus instruction is being considered , operational issues beyond those normally implemented for on campus instruction must be addressed. Hamre-Nietupski, et al. (1982), Neel, & Billingsley (1989), and Falvey (1986) agreed that certain critical issues including: 1) Administrative, Teacher, and Parental Support; 2) Funding; 3) Staffing Needs; 4) Liability; 5) Community Access; 6) Safety and; 7) Transportation, be included among the topics discussed for making decisions about implementing community-based instruction. Additional information about each of these seven critical issues is provided by Falvey (1986) and is included in this guide to give direction and offer suggestions for dealing with some possible obstacles which might be present when attempting to implement a community-based model of instruction.

Administrative, Teacher, and Parental Support

1. Assume the responsibility to inform administrators, teachers, and parents about the program. Do not assume they understand the purpose or program components.
2. Reinforce and show genuine enthusiasm when these individuals become involved in the program, even if only minimally.
3. Make arrangements for them to visit the program, particularly when conducting actual community training.
4. Make arrangements for them to visit other programs that provide exemplary community training and to discuss with other administrators, teachers, and parents their attitudes toward the program.

5. Make presentations, both formal and informal, to teacher groups, administrator groups, parent groups, and at professional meetings regarding the community training program.
6. Keep everyone informed of when and where community training will occur. Send notices home, post announcements on classroom doors, include the community training schedule in the school and/or district newsletter, and inform office staff and others of specific training schedules.
7. Be sure the students' IEP goals and objectives include the community independence and mobility skills that need to be taught (p. 69).

Funding

1. Develop procedures with the business/accounting departments within the school districts to redirect monies traditionally used for instructional supply, equipment, petty cash, and other funds to be used instead for community training. Methods for securing monies before the training occurs or for reimbursing personnel for any "out-of-pocket" expenditures for training must be developed and systematized.
2. Recruit contributions from student bodies, parents, parent organizations, service organizations (e.g., Kiwanis Club, Lions Club) for community training.
3. Organize parents, school personnel, and/or community members or clubs to hold fundraising activities to raise money for community training.

4. Organize school personnel and/or nonhandicapped students to assist in fundraising activities in which the students with severe handicaps are actively involved and learning vocational skills (e.g., bake sales, car washes, selling breakfast or lunch to school personnel and/or the student body).
5. Request that the student and his or her family develop shopping lists based upon items needed at home, with the family supplying the money for the purchases.
6. Recruit school personnel, members of the community who are confined to their homes, and others who are willing to have the student make needed purchases with monies provided by them.
7. Use money, if available, for individual student lunches or lunch programs to purchase necessary groceries to prepare lunches.
8. Use reduced fares or "no-charge bus passes" for public transit (p. 65).

Staffing Needs

1. Use a cooperative or team-teaching approach with other teachers. Work with the teachers in the team arrangement to program for all the students, utilizing all the available resources across all the classrooms. In addition, if teacher certification is necessary for supervising students, sharing the supervision across teachers can allow for more flexibility. For example, one teacher can be in the community with two appropriate-sized groups of students and a volunteer, while the rest of the students remain in the school with the aide under the supervision of the teacher in

the team arrangement.

2. Use support personnel (e.g., speech therapists, occupational and/or physical therapists, psychologists, administrators, nurses, social workers, physical education teachers) to participate in the community training program. These support personnel can be directed to implement the goals and objectives established by them in their specialty areas. For example, a speech therapist might work with a group of students in the community to teach communication skills, instead of working with them in the classroom or clinical therapy room. Teaching communication skills as well as other skills within the context of where they would naturally occur would decrease the difficulties students are likely to have in generalizing communication skill from artificial to natural environments.
3. Use volunteers to assist in the implementation of a community-based program. Volunteers might be recruited from some of the following sources: parents, nonhandicapped students, service organization, university and college programs, and/or senior citizens (e.g., Foster Grandparent Program). These volunteers must be systematically trained to provide the necessary teaching procedures as well as to implement such a program.
4. If teacher certification is necessary for direct supervision, aides and volunteers can assume the responsibility for directly teaching a small group of students far enough away from the teacher so as to not create a

large group, but close enough by so that if an emergency arises the teacher can intervene. For example, a teacher teaching four students to shop at a grocery store might have an aide in the same store teaching three other students to shop for different items; yet the teacher would interact only with the students in his specific group. The teacher is there in case of an emergency, but he is interacting only with the students in his group.

5. Use environments that can serve multiple purposes. For example, a grocery store can be used to teach a group to purchase a loaf of bread, while another group is working on the vocational skills of returning the grocery carts from the parking lot to the store, and still another group is learning to order lunch from the fast food counter in the grocery store.
6. Create classes of students with heterogeneous needs so as not to overburden any one class. This is particularly important for students in wheelchairs or for students with severe behavior problems. Establishing heterogeneous groupings of students will allow for more flexibility in staffing arrangements and assignments and will provide the opportunity for students to learn from each other (p. 66).

Liability

1. Contract other school districts providing community training, particularly those of a similar size and extent of services to determine the coverage provided for community training.

2. Involve parents in every aspect of developing and implementing a community training program. Secure written parental permission for all community training experiences. Be sure parents are informed about the purpose and need for community training.
3. Develop individualized education program (IEP) goals and objectives that reflect skills necessary to function in a variety of community environments. Since the IEP should dictate the services provided for a given student, those goals and objectives can serve as a guarantee for community training (p. 67).

Community Access

1. Environments that are frequented by the student and by his or her family.
2. Environments that would be frequented by the student and by his or her family if the student acquired the skills necessary to participate in those environments.
3. Environments that are frequented by nonhandicapped peers.
4. Environments perferred by the student and by his or her family.
5. Environments that involve skills that would be required in the largest number of other community environments.
6. Environments that would be accessible to the student during nonschool hours (p. 68).

Safety

1. Designate who will have which responsibilities.
2. Designate who should be telephoned at school in case of an emergency.

3. Carry first aid materials on all community trainings and have all staff experienced in and knowledgeable of first aid.
4. Have the students carry identification cards containing their names, name and telephone number of the school, and the names and telephone numbers of their parents.
5. Have the teachers carry copies of the students' doctors' names and telephone numbers, current medication, and telephone numbers of local paramedics and police.
6. Have the students and staff carry enough change in case a need arises to make an emergency phone call (p. 70).

Transportation

Transportation training possibilities for independent living.

1. Walking and/or using wheelchairs.
2. Bicycling
3. Public bus lines
4. "Dial-a-Ride"
5. Taxis
6. Car pooling (p. 70).

Transportation options for off-campus training.

1. District vehicles (e.g., career education bused, driver education vehicles, school maintenance trucks, school buses or vans).
2. Cars or vans purchased through fundraising and/or through donations for community training purposes.

3. Arrangements with school transportation to drop off and pick up the students at community training locations instead of school.
4. Private vehicles, owned by teachers, parents, or volunteers. Be sure to use these vehicles in accord with district policy and carry the appropriate amount and type of insurance.
5. Solicit other agencies to assist in identifying transportation resources (e.g., local Association for Retarded Citizens [ARC], Department of Rehabilitation (p71).

E. Communication Programming

Parent Input

When planning a communication program for a specific child, consultation with the child's parent or guardian is essential. Questionnaires and informal inventories completed by the parents of a student with severe handicaps can provide valuable information concerning the child's preferred communication style, the conditions and environments that most often stimulate communication, as well as other motivations that lead to expressive communication. Figures 1, and 2 are sample questionnaires which, when filled out by a parent or guardian, will provide additional information that can be used in the collaborative development of a communication program.

Figure 1 Sample Parent Survey Questionnaire to Determine Student's Communication Repertoire and Skills.

1. Describe the way your son/daughter communicates. _____
2. Which do you see as being your son/daughter's preference? _____

3. Does your son/daughter exhibit the following behaviors when communicating (circle appropriate behavior/s): smiling, frowning, eye blinking, looking at objects, laughing, crying/whining, screaming, making sounds, words, other?

4. Describe conditions, including times, events, people, places, and materials present when your son/daughter communicates.

5. Does your son/daughter answer questions? If yes, give examples.

6. Does your son/daughter respond to commands? If yes, give examples.

7. Does your son/daughter functionally use objects? If yes, give examples.

8. List the objects, persons, places, activities, and emotions that you wish your son/daughter to be able to communicate.

9. What objects, food, toys materials, music, expressions, persons, and so forth, are positively reinforcing to your son/daughter?

10. What body parts does your son/daughter use voluntarily when participating in activities and /or manipulating objects?

11. List adaptive equipment and/ or physical assistance needed by your son/daughter. Describe his or her preferred position(s).

12. Does your son/daughter have visual or auditory difficulties? If yes, describe.

13. What language(s) are spoken at home?

Source: Falvey, 1986, p.172.

Figure 2 Student Preference and Choice Questionnaire

Student:_____ Date:_____

Completed by:_____

1. How does your son/daughter communicate with family members?

___Sign Language ___Speech ___Gesture (pointing, eye gaze)

___Communication device ___Gestures and sounds

2. When your son/daughter likes something, which of the following will s/he do?

___Say something
___Laugh or smile
___Imitate you
___Change facial expression
___Look at someone
___Look at something
___Move body
___Point or reach out
___Make sounds
___Other (please fill in)_____

3. When your son/daughter dislikes something, which of the following will s/he do?

___Say something
___Cry
___Change facial expression
___Scream
___Throw tantrum
___Look away
___Pull away
___Push object or person away
___Make sounds
___Gesture
___Other (please fill in)_____

4. What are your child's favorite:

	Foods	Activities
	_____	_____
	_____	_____
	_____	_____

5. How often does your son or daughter choose:

	Frequently	Occasionally	Seldom
When to eat	___	___	_
What to eat	___	___	_
What to wear	___	___	_
When to get up (weekends, etc)	___	___	_
When to go to bed	___	___	_
What chores to do	___	___	_
What to buy with own money	___	___	_
How to spend free time	___	___	_
Whom to do things with	___	___	_
Other (please fill in)_____	___	___	_

6. Please list some examples of how your son or daughter spends free time at home or in the community:

Activities	With whom?	Times per week
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

7. Your child's friends: Who are they?

Name	Explain relationship (e.g. neighbor)
_____	_____
_____	_____
_____	_____

8. Anything else we should know about your child's interests, likes and dislikes?

_____
_____.

Source: Ford, Schnorr, Meyer, Davern, Black, & Dempsey, 1989, p.317.

The IEP Conference

Deciding upon an appropriate communication program for an individual student demands collaboration from parents, school professionals, and related specialists. The most appropriate occasion for discussing a child's communication program is the IEP conference. The form in Figure 3 can be given to parents as a way for them to help organize the IEP conference.

Figure 3 Parent input to IEP meeting arrangements

The IEP Conference: Participants and Meeting Arrangements

A. Who would you like to have attend the conference?
Consider those people whom you feel can be helpful in planning an education program for your son or daughter. You may bring anyone you feel may be helpful (e.g., student, family members, family or student's friend, advocate).

Name	Role
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Please indicate any additional school personnel you would like to attend the meeting: _____
_____
_____

B. Where would you like the conference to be held?
_____ School _____ Your home _____Other _____

C. When is it most convenient for you to attend?
Mon. ___ Tues. ___ Wed. ___ Thurs. ___ Fri. ___
8 A.M. ___ 9 A.M. ___ 10 A.M. ___ 11 A.M. ___ 12 P.M. ___
1 P.M. ___ 2 P.M. ___ 3 P.M. ___ 4 P.M. ___ 5 P.M. ___
Other time _____

D. Please note here if you need help making arrangements to attend a conference.
___ I need help arranging for transportation.
___ I need assistance with child care in order to attend.
___ Other _____
_____

Please return this form to school as soon as possible. We will use this information to choose arrangements that will be most convenient for you. Thank you for your assistance.

Source: Ford, Schnorr, Meyer, Davern, Black, & Dempsey, 1989, p. 316.

Writing Goals as Functional Routines

Goals and objectives for teaching students with severe handicaps are often written as isolated skills for which there is no critical effect. For example, massed practice in signing words such as water, hungry, mad, or play without demonstrating the action in a variety of settings becomes a very limiting educational experience for the student. Ideally, communication goals should be written as "embedded goals" and consequently practiced during naturally occurring moments. For instance, the word *play* would be taught and practiced just prior to, and during recess time. Thus, communication instruction for *play* becomes embedded during an actual recreation time. In every instance of communication instruction, independent communication stimulated by natural cues is the ultimate goal.

The degree to which the teacher must prompt the student (to get him/her to demonstrate a skill) will vary from student to student. A hierarchy of prompts are given in Figure 4. As presented in Figure 4, the radio in the home environment represents the natural cue or stimuli. It has been established that "listening to the radio" is a favorite activity for the student. Looking at the numerical range of prompts, level 1 requires the greatest degree of adult involvement as well as possible considerations for added motivation beyond the natural consequence of listening to the music. Levels 2 through 8, respectfully, require less and less adult involvement and reinforcers. A student operating at level 8 would be considered as having mastered the skill, provided that "listening to the radio" were done at appropriate times during the day and for reasonable amounts of time.

Figure 4: Format for Consideration of a Prompting Hierarchy

Environment: Home (recreational/leisure)
Subenvironment: Living room
Activity: Listening to the radio

Stimuli	Level of prompt	Behavior	Consequence
Radio is available in the home for student use; music has been determined to be a favorite activity for the student; student has free time	8-Natural	Without prompting, and given leisure time and the presence of the radio.	Student listens to music.
	7-Gestural	Adult points toward radio; student turns on radio.	Student listens to music; adult may nod approval.
	6-Indirect verbal	Adult says, "Why don't you listen to music?" Student turns on radio.	Student listens to music; adult says, "Good idea!"
	5-Direct verbal	Adult says, "Turn on the radio"; student complies.	Student listens to music; adult may verbally reinforce for turning on radio.
	4-Model	Adult models turning on radio for student, then gives student a turn to do so.	Student is reinforced for attending to model, and gets to listen to music when he turns radio on .
	3-Minimal physical	Adult points student in direction of radio and pushes student's hand toward radio if necessary; student turns on radio.	Student listens to music; adult may need to provide additional verbal praise.

2-Partial physical	Adult positions student's hand on radio knob, but releases hand so student can turn it.	Music may be enough, but student may require additional verbal or object reinforcement.
1-Full physical	Adult motors student through the turning on of the radio.	Again, music may may be sufficient, but additional reinforcement may be needed.

Source: Falvey, 1986, p. 48.

During the process of identifying goals and objectives for students with severe disabilities, efforts must be made to insure that what is taught relates to skills the student presently needs and skills s/he will need in the future. The following list of questions by Falvey (1986) may help to develop goals and objectives that are functional.

I. What skills need to be taught?
   A. Are the skills FUNCTIONAL for the student?
      1. Are the skills being considered CHRONOLOGICALLY AGE APPROPRIATE?
      2. Are these skills required across a variety of environments?
      3. Can these skills be used often?
      4. Does someone have to do it (perform the skill) for the student?
      5. How do handicapped peers use the skill?
      6. What skills would the student desire?
      7. What is the student's present level of performance of these skills?
      8. What family needs have been considered when determining skills?

   B. Will the skills result in NORMALIZATION for the student?
      1. What skills does the society value (particularly nonhandicapped peers)
      2. What are nonhandicapped peers being taught?
      3. What are nonhandicapped peers doing?

4. What skills would reduce normal/handicapped discrepancy (i.e., social significance of the skill)?
5. What skills would result in increased opportunities for interaction with nonhandicapped peers?
6. What skills would lead to less restrictive alternatives?
7. What skills would promote independence?

C. What are the SKILL/TASK characteristics?
1. What are the skills involved in this task/activity?
2. What are the skills needed for and enhanced by this task/activity?
3. What skills can be integrated across tasks?
4. What skills can be recombined into other more complex skills/processes?
5. What skills will meet the largest variety of the student's needs?
6. What skills will make maximal use of the student's learning strength and style?
7. What skills will provide opportunities for practice?
8. What families' needs have been considered when determining skills?

II. How will the skills be taught?
A. What are the student's learning styles and strengths?
B. What is the student's learning rate?
C. How well is this student able to tolerate change, confusion, chaos, etc.?
D. How well is this student able to generalize?
E. How well is this student able to respond to natural and instructional cues and consequences?
F. Where does the student have difficulty in a given sequence or activity?
G. What patterns emerge across environments, materials, cues, persons, etc., when the student has difficulty?
H. Is the student's communication understood across persons and settings?

III. Where should the skills be taught?
A. Are the environments chronologically age appropriate?
B. Are the environments accessible for teaching during school hours?
C. Are the environments preferred by the student?
D. Are the environments frequently used by the student, nonhandicapped peers, and the student's family?
E. Are there opportunities to teach many skills in these environments?
F. Is there a high probability that the student will acquire the skills necessary to function in these environments?
G. Are the environments appropriate for the student now (current) and in the future (subsequent)?
H. Are the environments safe for the student, and/or will the student likely acquire the safety skills necessary to participate in the activities within the environment (p.16)?

Home-School Communication

Frequent communication between home and school can have a positive effect upon all the people involved in a student's education. Establishing a routine for communicating with parents can insure that dialogue between home and school becomes a continuous and ongoing process. The form in Figure 5 allows parents to decide upon a type of dialogue they would most prefer.

Opportunities for Communication

Community-based education seems an ideal way to take advantage of communication opportunities. Community settings such as restaurants, bowling lanes, and variety stores provide naturally occurring stimulus and critical effect (consequences) which teachers ultimately hope will be the motivation that prompts communication among students with severe disabilities. Hopefully, the apple in the grocery store will prompt Jill to, in some appropriate way, request the apple. Eating the apple is the natural consequence received by Jill. If Jill has enjoyed the experience, it would be reasonable to assume that she would continue to communicate given similar circumstances. If the student is highly motivated to communicate, the teacher is in a position to require greater independence and fluency of communication from the student.

Not every community or neighborhood environment offers quality communication opportunities simply by virtue of being available as a training site. Being aware of some barriers to communication can help in choosing environments that tend to promote communication.

Figure 5 Home-school communication enhancement form

Parent Preferences for Home-School Communication

To ensure that your child is receiving the best possible education program. It is important that there be ongoing communication between your family and school personnel. It is our experience that families have different preferences for what kinds of information should be shared. In addition, families have different preferences regarding how and how often such information will be shared.

Listed below are a number of different types of information that can be shared. There are also a number of different methods that can be used to communicate this information. Please check your priorities.

_____ _____

Person completing the form Student's name

Date: _____

A. Information that you would like to have shared this between home and school: (check priorities)	How often would you like information shared: Daily	Weekly	Monthly
___ Eating habits	____	____	____
___ Bathroom habits	____	____	____
___ Sleeping/napping habits	____	____	____
___ Social interactions	____	____	____
___ Difficult behaviors	____	____	____
___ Other _____	____	____	____

As they may occur:

___ Special accomplishments

___ Special activities (restaurants, assemblies, etc.)

___ Other (please specify): _____

_____ .

B. How would you like to have this information shared on a day-to-day basis?

___ Notes or a notebook Brief phone calls to school staff ___ day __ evening

___ Brief phone calls from school staff ___ day ___evening

___ Other _____

C. What other ways of sharing information would you be interested in?

	Monthly	4x/year	Twice/year
___ Informal school visits	___	___	___
___ Home visits	___	___	___
___ Individual conferences	___	___	___
___ Parent group meetings	___	___	___
___ Newsletters	___	___	___
___ Telephone calls	___	___	___
___ Other(s): _____	___	___	___
_____	___	___	___

Source: Ford, Schnorr, Meyer, Davern, Black, & Dempsey, 1989, P. 315.

Figure 6 Factors in Selecting Between Manual Systems and Communication Aids

Factors	Manual Systems	Communication Aids
Motor skill requirements	Extensive	Minimal to extremely minimal
Portability	No problem	Problem for ambulatory students
Training required by audience	Fairly extensive if standardized signs used	Minimal
Constant visual display	For some signs	Yes
Allows student to initiate and respond to communicative attempts	Yes	Yes

Source: Hamre-Nietupski et al., 1986, p. 131.

If for some reason a decision cannot be made from an examination of the student's characteristics, the teacher can use student performance data. A process for collecting data is found in Figure 8. In this process, two or more communication systems are used in training with the student. A systematic approach is implemented beginning with the gathering of baseline data, for each of the systems under consideration, as the student interacts with each system. The training continues from 10-15 days with the student's performance being charted. The charted results should make apparent the best system for the student, but if the results are equal, the choice could be made by significant others outside the school environment (Hamre-Nietupski et al, 1986).

Ford et al., (1989) created a list of questions to help identify communication barriers within the school environment -- these same questions can be generalized to settings outside the school.

1. *Are there scheduling problems that restrict access to communication partners?* If a student is, for instance, scheduled to ride a different school bus, eat in the classroom as opposed to the school lunchroom, or spend most of his or her time in an instructional group comprising three or four classmates, opportunities to communicate will be unduly limited.

2. *Are the student's physical disabilities leading to modifications that limit involvement with peers?* For example, consider a student, dependent on someone for mobility, who is pushed to the rear of the school lunchroom, is positioned with his back to the crowd, and is assisted with feeding. These practices may limit the student's access to peers and make him completely dependent on others for appropriate interaction opportunities.

3. *Are there unduly restrictive rules in certain places?* For example, the rules in a particular classroom might require that children be "quiet" at all times and that they raise their hands to get an adult's attention. If these rules are not flexible enough to allow a student who needs to rely on vocalizing or other modes (e.g., battery-generated buzzer) for the same purpose, unnecessary barriers to communication will lead to communication breakdowns.

4. *Are ongoing decisions being made for the student, rather than encouraging his or her involvement?* It is often the case that choices that could be made

by the student are made *for* the student; such choices might include what clothing to wear to school, what to have for breakfast, whom to sit next to on the school bus, whom to play with during recess, and when to terminate an activity, to name a few. If such opportunities are not provided throughout the day, many students learn to assume a passive role or engage in "inappropriate" behaviors in an attempt to become more active participants.

5. *Is insufficient information provided to the student's communication partner?* For example, a student may be using a hand-waving motion to indicate "it is time to stop" an activity, but the communication partner may be unaware of the meaning of such a gesture. If the student becomes angry and frustrated and resorts to knocking the table over when repeating the request, using this technique was not effective. In addition, partners might not know how to manage other aspects of the exchange. For example, a partner may need to learn to pause at key points in an exchange, so that the student knows that a turn is expected and has sufficient time to take a turn. Failure to teach partners such techniques often result in limited student participation (p. 190).

F. Evaluation Systems

Election Criteria for Augmentative Communication Systems

If it seems likely that a student's ability to improve communication through the use of an atypical communication system, election criteria of an objective nature would be an appropriate place to begin assessing options. Three decision rules systems are presented in Table 2 (Reichle & Karlan, 1985).

Table 2
Rules Systems for Deciding an Individual's Candidacy for Augmentative Communication Systems Use

Scheuerman et al., 1976; Nietupski & Hamre-Nietupski, 1979

An individual is a candidate, if

1. there is not adequate language production ability: and
2. he or she is past the age (5-8 years) at which language production should have developed: and
3. speech production training programs have failed.

Chapman & Miller, 1980

An individual is a candidate only if

1. there are no intelligible single-word utterances: and
2. cognitive development is at least at Piagetian Sensorimotor Stage 6: and
3. the individual is producing performative behavior (demonstrating communicative intention): and
4. (a) the individual has a deviant speech production mechanism, or
   (b) there is cognitive development at the early preoperational stage of cognitive development, or cognitive development (greater than or equal to) comprehension (greater than) production (less than or equal to) communication function.

Shane, 1980; Shane & Brashir, 1980

Path 1

1. (a) cognitive development is at least at Sensorimotor Stage 5 intelligence, or
   (b) a mental age of 18 months has been attained or there is a demonstrated ability to recognize photographs, and
2. there are persistent oral-reflex problems, and
3. the family is willing to implement nonspeech systems of communication.

Path 2

1. (a) cognitive development is at least at Sensorimotor Stage 5 intelligence, or
   (b) a mental age of 18 months has been attained or there is a demonstrated ability to recognize photographs, and
2. the individual has had trial therapy, and
3. the trial therapy was appropriate, and
4. the progress of the previous trial therapy was too slow to enable effective communication, and
5. the family is willing to implement nonspeech systems of communication.

Path 3

1. (a) cognitive development is at least at Sensorimotor Stage 5 intelligence, or
   (b) a mental age of 18 months has been attained or there is a demonstrated ability to recognize photographs, and
2. (a) the individual's speech is unintelligible except to family and friends
   (b) the individual's predominant mode of communication is through pointing, gesture, or facial-body affect, or
   (c) there is a predominance of single-word utterances, or

(d) the individual exhibits frustration with the inability to speak, and
3. the individual has had no trial therapy, and
4. (a) the individual cannot accurately imitate speech sounds or words, or
(b) the individual cannot accurately imitate gross motor or oral motor movements, and
5. the family is willing to implement nonspeech systems of communication (p. 22).

The matrix form of Shane and Bashir's augmentative communication decision making system appears in Appendix B. An explaination of decision outcomes utilizing the augmentative communication matrix is explained below (Shane & Bashir, 1980).

> The decisions generated from the matrix are specified as to whether the final decision is to elect, delay, or reject an augmentative communication system. A decision to elect designates that such a system be used to facilitate oral language production to augment communication, to enhance oral speech intelligibility, or some combination of the above. A decision to delay indicates that an augmentative communication system is inappropriate at the time, possibly because of lack of cognitive readiness or the need to study the effects of a different form of therapy. A decision to reject indicates that expression through speech rather than through a nonspeech system is considered more appropriate (p. 410).

Some additional decision rules, found in Figures 6 and 7, are included for use as guidelines when examining student characteristics that may contribute to success or failure using a particular augmentative communication system. Some advantages and disadvantages of manual systems of communication (sign language) versus communication aids (communication boards, electronic devices, etc.) is presented in Figure 6. After weighing the factors in Figure 6, the set of five questions found in Figure 7 are intended to help in the selection of either a manual system or a communication aid.

Figure 7: Decision Rules for Selecting Between Manual Systems and Communication Aids

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Consider the use of a manual system if a student:

1. Is ambulatory or nonambulatory and can control the movements of his or her hands, arms, and fingers or has no physical impairments that preclude such control;
2. Exhibits attending skills as evidenced by attending to the actions of others, motor imitation, and/or the performance of actions when provided with gestural prompts; and
3. Has access to an audience that uses or is willing to learn a manual system.

Consider the use of a communication aid if a student:

1. Has physical impairments that preclude the control of his or her hand and finger movements;
2. Tends not to attend to the actions of others, but prefers to interact with objects;
3. Does not have access to an audience that is willing to learn a manual system.

Source: Hamre-Nietupski et al., 1986, p. 131.

Figure 8: Procedural Steps in Conducting an Alternating Treatments Design Program

---

Step 1:

Conduct baseline trials under both manual and communication aid conditions.

Step 2:

Institute daily training on both manual and communication aid skills (10-15 days), graphing daily performance under each condition.

Step 3:

Analyze data to determine student performance under both conditions.

* If performance is superior under one condition, select that nonverbal system for the student.
* If performance is relatively the same under both conditions, select the nonverbal system preferred by significant others in the student's nonschool environment (e.g., parents).

Source: Hamre-Nietupski et al., 1986, p. 132.

Ecological Inventories and Student Repertoire Systems

Ecological inventories are used in identifying current and future environments where students with severe handicaps are expected to interact. A list of possible environments can be generated by surveying the student's parents, the student, and nonhandicapped peers. Each environment is assessed according to certain criteria. The four step process by Brown, Branston-McClean, Baumgart, Vincent, Falvey, & Schroeder, (1979) is one process for evaluating prospective environments.

Step 1: Delineate the Most Relevant and Functional Least Restrictive Current and Subsequent School and Nonschool Environments

The teacher, parents/guardians, and others might first list the specific least restrictive current school and nonschool environments in which a student is currently functioning and those in which he or she might be prepared to function. Additionally, these environments might be related to and representative of domestic, recreational/leisure, general community, vocational, and educational curricular domains.

Step 2: Analyze the Environments Delineated in Step 1. (A) Divide those environments into relevant subenvironments, and (B) delineate some of the most relevant and functional activities that occur in those subenvironments

Obviously, each environment listed in Step 1 must be analyzed in more detail for instructional purposes. We suggest that each environment be analyzed with specific reference to the subenvironments within which the most relevant and functional activities occur.

Step 3: Determine the Skills Needed to Participate at Least in Part of an Activity and Describe Possible Adaptations That Allow or Enhance Participation

In order to determine the skills needed by an individual student to participate in the activities delineated in Step 2, the teacher might next observe the student engaging in the activities either in the actual environments or, if that is not initially tenable, in simulated environments. For example, the teacher could arrange to watch the student at play at school. From these observations, the teacher might determine at least some of the skills the student needs to acquire in order to engage in the same activities in a natural environment. In addition, the teacher might list the possible adaptations that could be made in the environment, in the materials, or in the kind of

assistance needed that would allow the student at least to participate to some degree in those activities. At some point in the instructional process, however, it is critical that the student is brought to the actual neighborhood park and information gathered as to actual performance in that environment in order to empirically verify that the student can actually participate at least in some of the appropriate activities.

Step 4: Design and Implement Instructional Programs to Teach a Severely Handicapped Student the Skills Necessary for Participation in Chronological Age-Appropriate Activities in Natural Environments (p. 37)

Refer to Appendix C for additional examples of Ecological Inventories.

Student repertoire inventories are a method of measuring a student's existing performance repertoire against the skills identified in the ecological inventory, that is, against skills performed by nonhandicapped age peers (Falvey, 1986). The steps when conducting student repertoire inventories are:

a. Delineating the skills performed by nonhandicapped age peers for a given activity;

b. Observing and recording whether the student is able to perform the skills performed by nonhandicapped age peers for a given activity;

c. Conducting a discrepancy analysis of the student's performance against his or her nonhandicapped peers' performance. Specifically, if a student is unable to perform a skill, educators should observe and analyze the characteristics of that skill (e.g., natural cues and correction procedures, materials, performance criteria). A determination is then made of the specific aspect(s) of the skill with which the student had difficulty. For example, a student my be able to perform the motor components of crossing a street, but is unable to determine when it is safe to cross the street. That student presumably is unable to respond to the natural cues provided in that environment. Specific knowledge of this inability provides educators with critical information concerning what and how the student will be taught.

d. Utilizing one of the following three options (if the student is unable to perform any of the skills):
Teach the student to perform the skill; or
Develop an adaptation that the student can use to assist in the performance of the skill; then teach the student to perform the skill utilizing the adaptation; or teach the student to perform a different but related skill (p. 21).

See Appendix C for examples of Student Repertoire Inventories

Teaching Procedures

The following list of teaching procedures is recommended by Falvey (1986) when teaching students' specific communicative behaviors:

1. Begin with teaching communicative content that creates a response from others (e.g., teaching students to request something they desire).

2. Select communicative content reflective of the student's preferences.

3. Consider teaching opposites or unrelated concepts initially (e.g., when teaching sign language, consider teaching "eat" at a different time than "drink," since the actions and signs are so topographically similar).

4. Expand the student's communicative response (e.g., when a student makes the sound "mi" and points to the milk, correct pronunciation for milk should be provided).

5. Provide role-playing opportunities for students to use their augmentative or alternative communication modes, so that they learn to interact with a variety of people.

6. Determine and specify the communicative objective and specific interventions before teaching.

7. Train others (e.g., students, family, staff) to communicate with the student.

8. Teach the student to use communicative behaviors across a variety of environments.(p. 181)

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The passage of P.L. 94-142 created the opportunity for all handicapped children to receive a free public education. Until the passage of this law in 1975, few students with severe handicaps were being served in the public schools. Because little was known about how or what to teach students with severe handicaps, teachers did their best through the familiar developmental approach to teaching -- often in segregated settings within the school. Because many students with severe disabilities were slow to learn and forgot more of what they had learned than did their nonhandicapped peers, they were subjected to years of repetative curriculum.

When given appropriate instruction and training, students with severe disabilities began to demonstrate their ability to function more independently. As a result, education directed toward students with severe handicaps began to shift from the developmental approach to using age appropriate, functional curriculum.

Students with severe handicaps generally have some degree of language delay, and nearly 25% of the objectives written for these students target communication. Expressive communication can include symbolic expression (verbal, sign language, photographs/pictures, representational objects, and graphic systems) as well as nonsymbolic expression (vocal , affect, tactual, gestural, physiological, body movement, and visual). Augmentative communication systems, such as electronic speech synthesizers, may also aid in communication for some students with severe

disabilities. Choosing effective communication systems for students with severe disabilities must include an evaluation of the student's physical limitations, the requirements of the augmentative device and the demands of the environments in which the communication is to occur.

Assessment and continuous data collection is critical in making determinations about what to teach, and how to teach. Assessment must be multidisciplinary involving school professionals, specialists and parents. Evaluation of program effectiveness is determined by the data that are collected as the student demonstrates his/her ability to perform skills to a criteria previously established. Ecological inventories and student repertoires are used by the teacher to help identify discrepancies between the minimum requirements of a task and the students ability to perform the task. The discrepancies are written into an instructional program for teaching a particular task.

Since students with severe disabilities are unable to effectively generalize learning from one setting to another, it is necessary to teach specific skills in all settings which the student currently frequents and settings in which she/he is expected to frequent in the future. Community-based instruction is one way that instruction can be delivered in a variety of settings.

Commitment to a community-based model of instruction requires that school administrators, teachers and parents support the program. It may also be necessary for a school district to re-examine and make adjustments to current policies regarding staffing, funding, liability, transportation, and safety procedures. While barriers to community-based education may arise, solutions are feasible if

problems are approached in a proactive, positive, problem-solving manner (Hamer-Nietupski, et al., 1982).

Conclusions

The prevailing philosophy of educating students with severe disabilities, as determined by reviewing the related literature, recommends that instruction target curriculum that is age appropriate and that somewhat mirrors the skills that are demonstrated by the student's nonhandicapped peers. Decisions about educating students with severe handicaps can now be approached in ways that are more objective and data based than ever before. Many types of surveys and inventory instruments including environmental and student repertoire inventories, augmentative communication decision making matrixes, and so forth, contribute to program development that relies upon systematic data collection. The success of community-based programs is dependent upon the support of school district administrators, teachers, parents and the community.

A caveat to the implementation of community-based education is included as a cautionary note to keep the goals of each student's program in sight. A concern might be that functional goals and natural settings become synonymous with vocational goals and community placements. Ford et al., (1989) reports a mother's reaction to her son's concentrated in-community programming. She says, "Surely there is more to school than learning how to make a snack, cross a street, and work at a job! It is getting more and more separate from the other kids' programs" (p. 7). "School" too, is a natural environment for students, and there are many

appropriate opportunities to teach functional skills throughout the day in non-isolated settings.

Recommendations

For anyone teaching students with severe handicaps, the writer recommends a model of instruction which includes the following guidelines:

1. A curriculum that includes functional, age appropriate goals and objectives which continuously focuses upon skills to maximize the student's independence currently as well as skills that target the student's future needs.
2. The curriculum should be delivered in a variety of settings including the school, community and in the neighborhood.
3. To the degree appropriate, instruction should be delivered in the company of nonhandicapped peers.
4. A major goal to enhance communication skills should permeate throughout all curriculum areas.
5. Include a multidisciplinary approach when evaluating the students and the potential instructional settings. Parents should be heavily involved in providing information about the student and in the subsequent education of the student.

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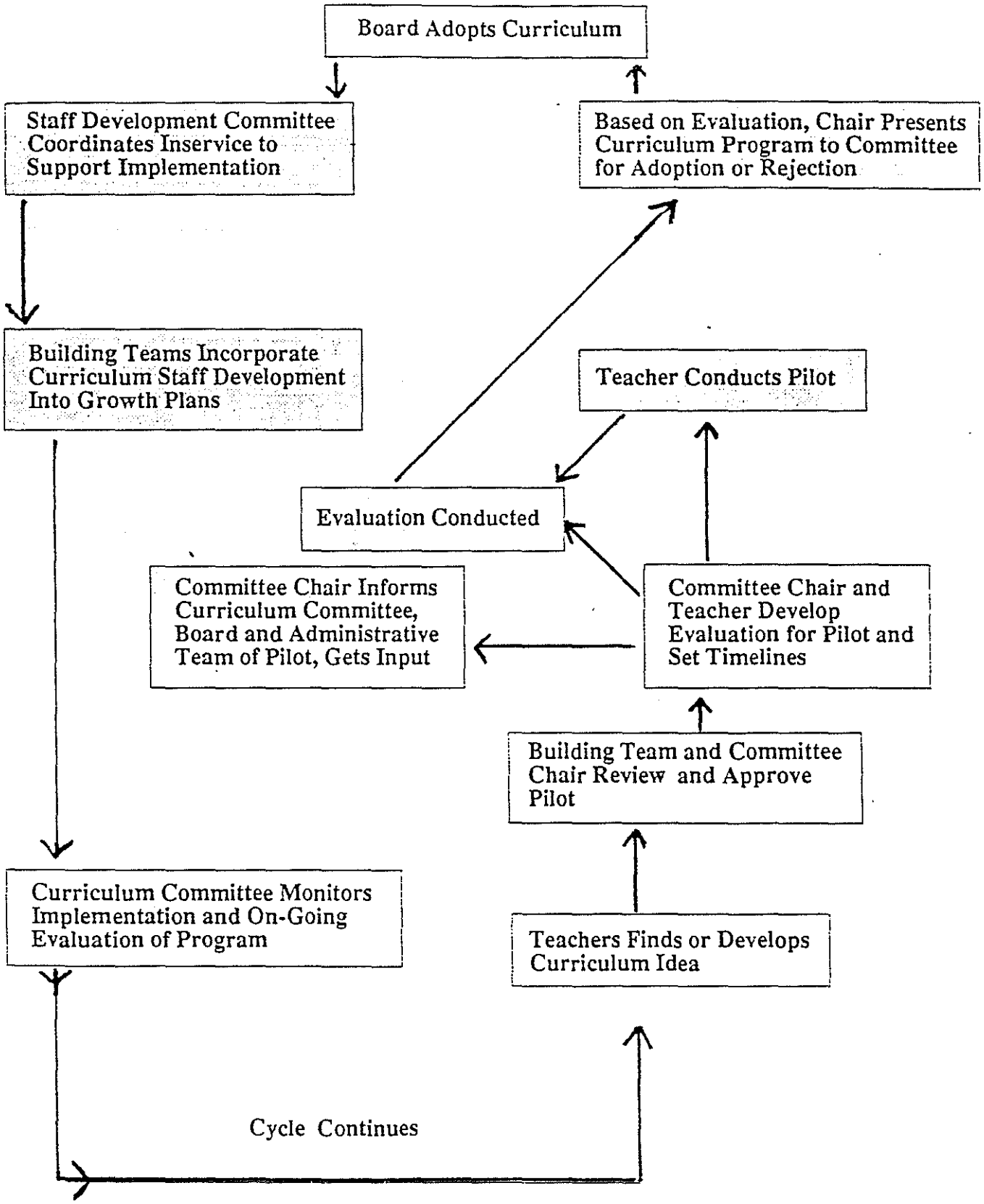
APPENDIX A

District Curriculum Development Process

Curriculum Development Flow Chart



Form Revised 9/03/91

Source: Omak School District, 1991

APPENDIX B

Election Criteria for the Adoption of an Augmentative Communication System

LEVEL I COGNITIVE FACTORS

At least Stage V sensorimotor intelligence?

At least 18 months mental age; or ability to recognize at least at photograph level?

YES → Go to II

NO → Delay

LEVEL II ORAL REFLEX FACTORS

Persistent (1) Rooting; (2) Gag; (3) Bite; (4) Suckle/Swallow; or (5) Jaw Extension Reflex?

YES → ELECT → Go to X

NO → Continue to III

LEVEL III LANGUAGE AND MOTOR SPEECH PRODUCTION FACTORS

A. Is there a discrepancy between receptive and expressive skills?

YES → Go to III B

NO → Go to V

B. Is the discrepancy explained predominantly on the basis of a motor speech disorder?

YES → Go to V

NO → Go to III C

UNCERTAIN → Go to IV

C. Is the discrepancy explained predominantly on the basis of an expressive language disorder?

YES → Go to VII

NO → Go to VI

UNCERTAIN → Go to V

LEVEL IV MOTOR SPEECH—SOME CONTRIBUTING FACTORS

Presence of neuromuscular involvement affecting postural tone and/or postural stability?

Presence of praxic disturbance?

Vocal production consists primarily of vowel production?

Vocal production consists primarily of undifferentiated sounds?

History of eating problems?

Excessive drooling?

YES → Evidence to support motor speech involvement (Go to V)

NO → Evidence against motor speech involvement (Go to V)

LEVEL V PRODUCTION—SOME CONTRIBUTING FACTORS

Speech unintelligible except to family and immediate friends?

Predominant mode of communication is through pointing, gesture, facial-body affect?

Predominance of single word utterances?

Frustration associated with inability to speak?

YES → (Evidence to ELECT) Go to VII

NO → (Evidence to DELAY OR REJECT) Go to VII

Source: Shane & Bashir, 1980, p.409-412

LEVEL VI EMOTIONAL FACTORS

A. History of precipitous loss of expressive speech?
   - **YES → Go to VIII**
   - **NO → Go to VI B**

B. Speaks to selected persons or refuses to speak?
   - **YES → Go to VIII**
   - **NO → Go to V**

LEVEL VII CHRONOLOGICAL AGE FACTORS

A. Chronological age less than 3 years?
   - **YES → Go to VIII A**

B. Chronological age between 3 and 5 years?
   - **YES → Go to VIII A**

C. Chronological age greater than 5 years?
   - **YES → Go to VIII A**

LEVEL VIII PREVIOUS THERAPY FACTORS

A. Has had previous therapy?
   - **YES → Go to VIII B**
   - **NO → Go to IX, weigh evidence - (DELAY with Trial Therapy or ELECT) Go to X**

B. Previous therapy appropriate?
   - **YES → Go to VIII C**
   - **NO → DELAY with Trial Therapy**

C. Therapy progress too slow to enable effective communication?
   - **YES → ELECT → Go to X**
   - **NO → DELAY → continue therapy**

D. Therapy appropriately withheld?
   - **YES → ELECT → Go to X**
   - **NO → DELAY with trial therapy**

LEVEL IX PREVIOUS THERAPY—SOME CONTRIBUTING FACTORS

Able to imitate (with accuracy) speech sounds or words; gross motor or oral motor movements?
   - **YES → (Evidence to DELAY) Go to VIII**
   - **NO → (Evidence to ELECT) Go to VIII**

LEVEL X IMPLEMENTATION FACTORS—ENVIRONMENT

Family willing to implement (use, allow to be introduced) Augmentative Communication System recommendation?
   - **YES → IMPLEMENT**
   - **NO → COUNSEL**

Figure 1. Election Decision Matrix.

The Decision Matrix

[1] S. E. Morris, Personal communication (1978).

Please note: The text of this appendix was redacted due to copyright concerns.

Source: Shane & Bashir, 1980, p.409-412

APPENDIX C

Ecological Inventory and

Student Repertoire Forms

Student: Kraig Rosenberg
Date: 8/23

Domain: Community
Environment: Torrance Hospital

Subenvironment: Coffee Shop
Teacher: Shellie Coots

Nonhandicapped person inventory	Student inventory	Discrepancy analysis	What-to-do options
Activity: Locating a seat			
Skills: Enter doorway	+		
Scan area for empty table/chair	–	No strategy for scanning	Teach scanning skills
Go to empty table/chair	–	Result of no scanning strategy	Teach scanning skills
Sit down in empty chair	+		
Activity: Looking at menu			
Skills: Scan selections	–	No strategy for scanning	Teach scanning skills
Determine desired food and beverage	–	Not able to read	Develop pictorial menu
Replace menu in menu holder	+		and teach
Activity: Ordering desired food and beverage			
Skills: State or point to choice	–	Unable to communicate	Develop and teach an alternative communicative system
Answer waitress/waiter's questions	–	Unable to communicate	Develop and teach an alternative communicative system
Wait for order	+		

Code: + = correct response; – = incorrect response.

Figure 2.4. Sample student repertoire inventory.

Source: Falvey, 1986, p.23

Repertoire chart for: **Intermediate Grades (ages 9–11)** Student: _____

Domain: Self-Management/Home Living Age: _____ Date: _____

		Performance level				Critical features			
		Check one				Check all that apply			
Goal area	Present activities	Assistance on most steps	Assistance on some steps	Independent	Has related social skills?	Initiates as needed?	Makes choices?	Uses safety measures?	Note priority goal areas
Eating and food preparation	Eat balanced meals with								
	appropriate manners								
	Choose nutritious foods:								
	snack								
	Plan and Prepare simple								
	snacks for self								
	Serve food items to others								
	Clean up preparation area								
	and table after snack								
Grooming and dressing	Brush/comb hair when								
	needed								
	Get dressed/undressed								
	(school: shoes, swim-								
	ming, outer clothes)								
	Maintain neat appearance								
	throughout school day								

(continued)

Source: Ford, Schnorr, et al., 1989, p.353-359

		Performance level				Critical features			
		Check one				Check all that apply			
Goal area	Present activities	Assistance on most steps	Assistance on some steps	Independent	Has related social skills?	Initiates as needed?	Makes choices?	Uses safety measures?	Note priority goal areas
Hygiene and toileting	Use private and public								
	toilets								
	Wash hands and face:								
	routine times and for								
	specific activities (food								
	preparation)								
	Follow acceptable hygiene								
	practices								
Safety and health	Follow safety rules								
	Exit building for								
	emergency/alarm								
	Take care with utensils,								
	appliances, and tools								
	Inform adult when sick/								
	injured								
	Take medicine with adult								
	supervision								
	Avoid/report sexual abuse								
	Report emergencies								

(continued)

		Performance level				Critical features			
		Check one				Check all that apply			
Goal area	Present activities	Assistance on most steps	Assistance on some steps	Independent	Has related social skills?	Initiates as needed?	Makes choices?	Uses safety measures?	Note priority goal areas
Safety and health (*continued*)	Use caution with strangers								
	Make emergency phone								
	calls								
	Avoid alcohol and other								
	drugs								
Assisting and taking care of others (examples)									
Budgeting and planning/scheduling	Gather belongings for								
	outings/activities								
	Take care of personal								
	belongings								
	Carry money for small pur-								
	chases: not only routine								
	Manage weekly/monthly								
	schedule								
	Make plans with friends								
	on daily basis								
	Participate in fundraising								
	activities								

Repertoire chart for: **Intermediate Grades (ages 9–11)** Student: _____

Domain: Vocational Age: _____ Date: _____

Goal areas and experiences	Performance level				Critical features				
	Check one				Check all that apply				
List the vocational experiences in the student's repertoire to the present date. Specify the environment, task, and sessions per week.	Assistance on most steps	Assistance on some steps	Independent	Has related social skills?	Broadens repertoire	Challenging	Student preference	Provides interactions with nonhandicapped co-workers	Note priority goal areas
Kindergarten and elementary school classroom/school jobs									
Middle school vocational training experiences									
High school vocational training sites									
Transition to community employment									

Repertoire chart for: **Intermediate Grades (ages 9–11)** Student: _____

Domain: Recreation/Leisure Age: _____ Date: _____

		Performance level				Critical features			
		Check one				Check all that apply			
Goal area	Present activities	Assistance on most steps	Assistance on some steps	Independent	Has related social skills?	Obviously enjoys	Age appropriate	Interacts w/non-handicap peers	Note priority goal areas
School and extra-curricular (examples)									
Activities to do alone: at home and in the neighborhood (examples)									
Activities with family and friends: at home and in the neighborhood (examples)									
Physical fitness (examples)									
Activities to do alone: in the community (examples)									
Activities with family and friends: in the community (examples)									

Repertoire chart for: **Intermediate Grades (ages 9–11)** Student: _____

Domain: General Community Functioning Age: _____ Date: _____

		Performance level				Critical features			
		Check one				Check all that apply			
Goal area	Present activities	Assistance on most steps	Assistance on some steps	Independent	Has related social skills?	Initiates as needed?	Makes choices?	Uses safety measures?	Note priority goal areas
Travel	Walk, ride bus, ride bike								
	to and from school								
	Walk to various destina-								
	tions in school and in								
	the community (neigh-								
	borhood grocery store,								
	mailbox)								
	Cross streets safely								
Community safety									
Grocery shopping	Buy two to three items at								
	neighborhood store for								
	self (snack) or classroom								
	snack activity								
General shopping	Buy item at school store								

(continued)

Source: Ford, Schnorr, et al., 1989, p.353-359

APPENDIX D

Data Collection Systems

Measuring Performance

Performance during instructional sessions is assessed in blocks of three consecutive trials. The student performs the routine on three occasions at appropriate, naturally occurring times. Each trial constitutes one complete instructional session, and the number of sessions per day is limited only by the number of natural opportunities available for skill performance. Some routines may occur several times per day while others may occur less than once every day. The total time it takes to assess performance on three consecutive trials, therefore, will vary from routine to routine. Sessions should follow program guidelines as outlined in the Instructional Conditions and Comments form (Figure 9.4) on the back of the Instructional Data Sheet illustrated in Figure 9.3. Information to be provided on that form includes the behavioral objective, program manager(s), and appropriate times and situations ("Conditions") for training. Space is also available for any comments or special instructions you may wish to include as the program progresses.

Instruction begins with the student being given the required level of assistance for each step as determined by the assessment. Correct or error responses are recorded on the Instructional Data Sheet for each step and consequences are provided accordingly. Two types of errors should be recorded: 1) latency error (EL): the student did not begin to respond to the cue before the end of the allowable latency period, and 2) response error (E): the form of the response was incorrect. A response error (E), for example, might be recorded for the "walks to building entry" step of the Bus to Classroom routine if Gary ran (or attempted to run) across the lawn and through the bushes rather than walking to the building on the sidewalk.

A third error type could also be of concern in routines. This is a duration error (ED). Duration errors were noted infrequently for pupils with autism participating in field tests of the IMPACT curriculum. Such errors may be recorded, howese was incorrect. A response error (E), for example, might be recorded for the "walks to building entry" step of the Bus to Classroom routine if Gary ran (or attempted to run) across the lawn and through the bushes rather than walking to the building on the sidewalk.

A third error type could also be of concern in routines. This is a duration error (ED). Duration errors were noted infrequently for pupils with autism participating in field tests of the IMPACT curriculum. Such errors may be recorded, however, if duration problems were noted for a step during initial assessment sessions or in probe sessions (which are discussed on page 93 of this chapter). Duration errors may be indicated on the Instructional Data Sheet by circling the time in the duration column, in addition to noting ED.

A duration error consists of a prompted or independent correct response form that is initiated within the specified latency, but that takes longer for the pupil to complete than the maximum allowed duration. It was found during assessment, for example, that Gary began to "take off coat" independently within the 3-second latency, but exceeded the allotted time of 7 seconds to complete the response. Duration of

Source: Neel & Billingsley, 1989, p.82-93

Manager: *Helen*

Instructional Data Sheet

FIGURE 9.3

Name: *Gary*
Routine: *Bus to classroom*
Date: _____

Beginning natural cue: *Teacher approaches Gary*
Critical effect: *Participation in classroom activities*
Latency: *3 seconds* Duration of routine: *3'10"*

Duration	Step	Assistance	Date	Date	Date	Assistance	Date	Date	Date
2 sec	1. Requests help with seatbelt ©	Say "Show me 'help.'" Mold sign for "help."	C	C	C	/ Continue verbal cue, slightly lift hand.	C	E	C
15 sec	2. Walks down aisle	"Go to class."	EL	C	C		C	C	C
10 sec	3. Picks up lunch box or other materials	I	C	C	C		C	C	E
5 sec	4. Exits bus	I	C	C	EL		EL	EL	C
35 sec	5. Walks to building entry	Hold his hand while walking	C	E	C		E	E	E
2 sec	6. Requests help with door ©	Say "Show me 'help.'" Mold sign for "help."	C	C	C	/ Continue verbal cue, slightly lift hand.	E	C	C
2 sec	7. Enters building	Hold his hand while entering building	C	C	C	/ Touch on hand.	EL	C	C
60 sec	8. Walks to classroom	Hold his hand while walking	E	C	C		C	C	C
10 sec	9. Puts away lunch box and other materials	Take his hands and guide to shelf	C	C	C	/ Guide ½ way to shelf	C	C	C
7 sec	10. Takes off coat	I	ED	EL ED	ED	/ / Set timer for 7 sec. If Gary beats timer, give praise & "high five." (See note 1.)	C	ED	C
2 sec	11. Requests help finding hook ©	Say "Show me 'help.'" Mold sign for "help."	C	C	C	/ Continue verbal cue, slightly lift hand.	C	C	C
4 sec	12. Hangs up coat	Point at hook	C	C	EL		C	C	C
		Total duration:							

EL = Latency error
E = Response form error
ED = Duration error
C = Correct

© = Communication target

Program changes:
/ = Change in assistance
// = Change in consequence

Instructional Conditions and Comments

FIGURE 9.4

Objective

Gary will walk from the bus to the classroom upon arrival at school within 3'10" by (date). Assistance will not be given unless Gary signs "help" independently (see task analysis). Success judged by Ms. Lawrence. Gary will also walk from the bus to his home after school requesting "help" as needed when accompanied by a parent. Success judged from parental report.

Manager (parent, teacher, other supervisory individual)

Helen

Conditions (appropriate times and situations)

Instruction occurs when bus arrives at loading/unloading area, approximately 8:00 a.m. The program will be conducted by Ms. Lawrence or Mr. Bernard on basis of availability.

Comments, special instructions

Note 1, (date). Gary seems to have all the moves down, but gets distracted easily by things going on in and outside of the classroom. Decided to use a Beat the Clock game rather than giving him more assistance. If he beats the clock, give descriptive praise and "high five."

Note 2, (date). Continue to keep track of time with watch, but don't use obvious kitchen timer. Continue enthusiastic, descriptive praise.

Note 3, (date). G. signed "help" before I could ask him what he wanted. From now on, signing should be independent.

Note 4, (date). G. found coat hook on his own—no help needed! Discontinue signing for help on this step. G. should find his hook independently.

Please note: The text of this appendix was redacted due to copyright concerns.

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Instructional Data Sheet (Short Form)

FIGURE 9.5

Page # 2
Name: Gary

Routine: Bus to classroom
Latency: 3 seconds

Assistance	Date	Date	Date	Assistance	Date	Date	Date
Continue verbal cue; slightly lift hand.	C	C	C	/ Verbal cue only	E	EL	EL
/ Ask "What's next?"	C	C	C	/ I	C	EL	C
I	EL	C	C	I	C	C	C
/ Say "Go."	C	C	C	/ I	C	C	C
/ Guide Gary rather than just hold hand.	E	C	E	/ / Guide; if Gary resists or breaks away, start step over.	E	E	C
Continue verbal cue; slightly lift hand.	C	C	C	/ Verbal cue only	C	EL	C
Touch on hand.	C	C	C	/ I	EL	C	C
/ Constant touch on arm.	C	C	C	/ Touch on arm 3/4 way to classroom.	C	E	C
/ Use light touch with fingers to guide 1/2 way.	EL	C	EL	/ Use firmer touch at beginning of movement.	C	C	C
Set timer for 1 sec. If Gary beats timer, give praise & "high five."	C	C	C	/ / Drop "high five!" Continue praise & timer.	C	C	C
/ Verbal cue only.	C	EL	C		C	C	C
/ Nod head toward hook.	EL	C	C		C	C	C
Total duration:					3'30"		

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Instructional Data Sheet (Short Form)

FIGURE 9.6

Page # *3*
Name: *Gary*

Routine: *Bus to classroom*
Latency: *3 seconds*

Assistance	Date	Date	Date	Assistance	Date	Date	Date
Continue verbal cue; tap hand upward	C	C	C	*/ Verbal cue only*	C	C	EL
I	C	C	C		C	EL	C
I	C	C	C		C	C	C
Guide; if Gary resists or breaks away, start step over.	C	C	C	*/ / Guide only.*	C	C	C
Verbal cue only.	C	C	C	*/ Ask "What do you want?"*	C	C	EL
I	E	C	E	*/ Lighter touch on hand.*	C	C	C
Touch on arm 3/4 way to classroom.	C	C	C	*/ Touch on arm 1/2 way to classroom.*	C	C	C
/ Light touch to guide 1/2 way.	C	EL	C		C	C	C
/ / Praise only (note 2)	ED	C	C		C	C	C
/ Ask "What do you want?"	EL	C	C		C	C	C
/ I	C	C	C		C	C	C
Total duration:							

Cut along dotted line.

Instructional Data Sheet (Short Form)

FIGURE 9.7

Page # *4*
Name: *Gary*

Routine: *Bus to classroom*
Latency: *3 seconds*

Assistance	Date	Date	Date	Assistance	Date	Date	Date
Verbal cue only.	C	C	C	*/ Ask "What do you want?"*	C	*/ I (see note 3.)* C	C
I	C	C	C		EL	C	C
I	C	EL	C		C	C	C
I	C	C	C		C	C	C
/ Hold hand, but don't guide!	C	C	C	*/ Hold hand 1/2 way to building*	C	E	C
Ask "What do you want?"	C	C	C	*/ I*	C	C	C
/ I	C	C	C		C	C	C
/ Touch on arm 1/4 way to classroom.	E	E	E	*/ Touch on arm first 1/4 way to classroom plus lighter touch past Mr. Raymond's room.*	C	C	C
/ I	EL	E	EL	*/ Tap on hand.*	C	EL	EL
/ / Reduce praise to "Good."	C	C	ED		C	C	C
/ I New target: Find hook. I	Found hook. Note 4.	C	C		C	C	C
I	C	C	C		C	C	C
Total duration:		3'08"					

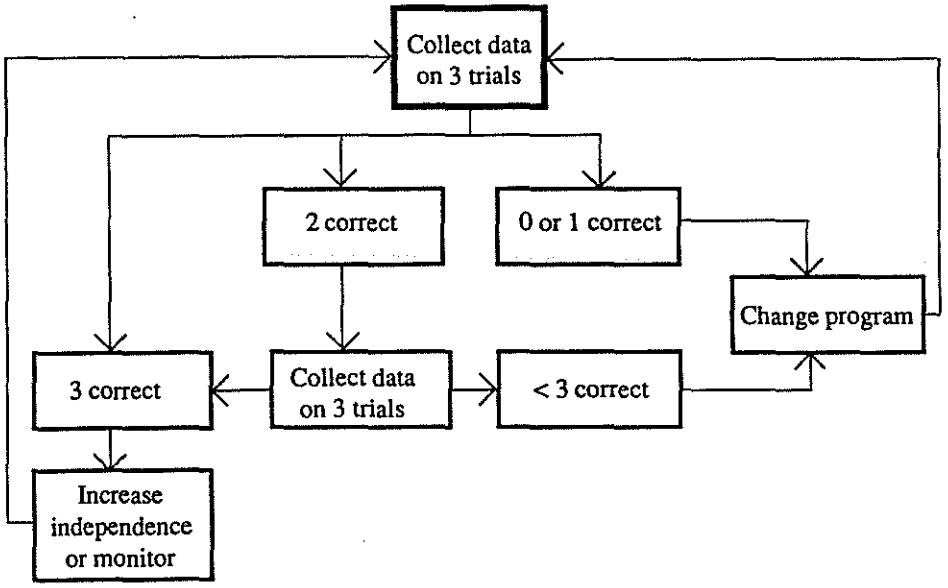

Figure 9.8. Decision rules flowchart for application of instructional change in individual steps of routines.

Source: Neel & Billingsley, 1989, p.82-93

CHARACTERISTICS OF A DATA COLLECTION SYSTEM FOR ROUTINES

Source: Neel & Billingsley, 1989, p.73-79

Manager: *Helen*

Assessment Data Sheet

FIGURE 9.1

Name: *Gary*
Date: _____
Routine: *Bus to Classroom*
Beginning natural cue: *Teacher approaches Gary*
Critical effect: *Participation in classroom activities*
Latency: *3 seconds* Duration of routine: *3 min., 10 sec.* [Note: Includes 3 seconds latency for each step.]

Types of assistance: FP = Full physical assistance
PA = Partial physical assistance
G = Gestural cue
V = Directive verbal cue
I = Natural cue or independent
© = Communication target

Steps	Duration	Date	Date	Date	Type of assistance for instruction *(describe)*
1. ©Requests help with seatbelt	*2 sec*	*FP*	*FP*	*FP*	*V/FP Say "Show me 'help.'" Mold sign for "help."*
2. Walks down aisle	*15 sec*	*V*	*V*	*V*	*V "Go to class."*
3. Picks up lunch box or other materials	*10 sec*	*I*	*V(ED)*	*I*	*I* [*Note:* No duration errors occurred with type of assistance selected for instruction.]
4. Exits bus	*5 sec*	*PA*	*I*	*I*	*I*
5. Walks to building entry	*35 sec*	*PA*	*PA*	*PA*	*PA Hold his hand while walking*
6. ©Requests help with door	*2 sec*	*FP*	*PA*	*FP*	*V/FP Say "Show me 'help.'" Mold sign for "help."*
7. Enters building	*2 sec*	*PA*	*PA*	*PA*	*PA Hold his hand while entering building*
8. Walks to classroom	*60 sec*	*PA*	*FP*	*PA*	*PA Hold his hand while walking*
9. Puts away lunch box and other materials	*10 sec*	*PA*	*G*	*FP*	*FP Take his hands and guide to shelf*
10. Takes off coat	*7 sec*	*I(ED)*	*I*	*I(ED)*	*I* [*Note:* Record duration errors during instruction.]
11. ©Requests help finding hook	*2 sec*	*FP*	*FP*	*FP*	*V/FP Say "Show me 'help.'" Mold sign for "help."*
12. Hangs up coat	*4 sec*	*G*	*PA*	*V*	*4th trial, G* | *G — Point at hook*

Source: Neel & Billingsley, 1989, p.73-79

Manager: _____

Assessment Data Sheet

Name: _____
Date: _____
Routine: _____
Beginning natural cue: _____
Critical effect: _____
Latency: _____ Duration of routine: _____

Types of assistance: FP = Full physical assistance
PA = Partial physical assistance
G = Gestural cue
V = Directive verbal cue
I = Natural cue or independent
ED = Duration error; © = Communication target

Steps	Duration	Date	Date	Date	Type of assistance for instruction *(describe)*

Source: Neel & Billingsley: 1989, p.136

Manager: _____

Instructional Data Sheet

Name: _____
Routine: _____
Date: _____

Beginning natural cue: _____
Critical effect: _____
Latency: _____ Duration of routine: _____

Duration	Step	Assistance	Date	Date	Date	Assistance	Date	Date	Date
		Total duration:							

EL = Latency error
E = Response form error
ED = Duration error
C = Correct

© = Communication target

Program changes:
/ = Change in assistance
// = Change in consequence

Source: Neel & Billingsley: 1989, p.137

Instructional Conditions and Comments

Objective

Manager (parent, teacher, other supervisory individual)

Conditions (appropriate times and situations)

Comments, special instructions

Source: Neel & Billingsley: 1989, p.138

Cut along dotted line.

Instructional Data Sheet (Short Form)

Page # _____ Routine: _____

Name: _____ Latency: _____

Assistance	Date	Date	Date	Assistance	Date	Date	Date
Total duration:							

Source: Neel & Billingsley: 1989, p.139

Scoring: 1 = Physical
2 = Modeling
3 = Direct verbal
4 = Indirect verbal
5 = Gesture
6 = Independently

Name: _____
Date: _____

Ordering

1. Locate entrance door.								
2. Read "pull" sign and open door.								
3. Locate end of line.								
4. Get in line.								
5. Move up in line.								
6. Wait for clerk to look/ask for order.								
7. Tell clerk your order.								
8. Ask for ketchup, salt, and so on.								
9. Use communication cards (if necessary).								
10. Listen for clerk to give price/total.								
11. Get wallet from pocket/purse.								
12. Take money from wallet/purse.								
13. Give money to clerk.								
14. Wait for your change.								
15. Put money left back in wallet/purse.								
16. Step to side (letting others order).								
17. Put wallet in pocket/purse.								
18. Wait for food ordered.								
19. Go to door and push open.								
20. Watch for cars coming.								
21. Walk to patio.								
22. Find an empty seat.								
23. Sit down and eat quietly.								
24. After eating, remove all trash.								
25. Pick up papers and put in trash (if wind blows them away).								

Comments:

Figure 4.2. Sample data sheet for evaluating a student's skills at McDonald's Restaurant.

Source: Falvey, 1986, p.74

NAME

GOAL

SKILL

Teacher/ Environ cue	Environment Location	Date	Trials 1	2	3	Date	Trials 1	2	3	Comments
	School	D				D				
	Community	D				D				
	Home	D				D				
	School	D				D				
	Community	D				D				
	Home	D				D				
	School	D				D				
	Community	D				D				
	Home	D				D				
	School	D				D				
	Community	D				D				
	Home	D				D				
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	Community	D				D				
	Home	D				D				
	School	D				D				
	Community	D				D				
	Home	D				D				
	School	D				D				
	Community	D				D				
	Home	D				D				
	School	D				D				
	Community	D				D				
	Home	D				D				

Key: O=introduced; Ø=in progress; ⊗=mastered
A=aided; UA=unaided

Source: Skaley, 1992