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## Implementing a total communication program for language-delayed children

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## Implementing a total communication program for language-delayed children

### Abstract

Communication begins at birth. As a child grows older needs and desires expand and new language skills are needed for expression and refined communication. As children approach school age and move into the larger community, development of communication becomes imperative. The public school system offers education to a wide variety of students. This includes those children who are delayed in language development. Language problems can be due to genetic defects at birth, such as Down Syndrome, lack of stimulation in home environment, and physical handicaps, such as cerebral palsy. Such problems hinder children from verbally expressing their needs, thoughts, and desires. The public school system has to provide an appropriate education for these language-delayed children. How can this best be accomplished? What are the most effective methods? What does research suggest? These are important questions to be answered. They will provide direction to classroom teachers and special education teachers.

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IMPLEMENTING A TOTAL COMMUNICATION  
PROGRAM FOR LANGUAGE-DELAYED  
CHILDREN

A Research Paper

Submitted to the

Department of Curriculum and Instruction

In Partial Fulfillment

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by

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## TABLE OF CONTENTS

|  |    |
|--|----|
| Introduction   | 1  |
| Definition of Total Communication Program                                | 2  |
| Gestures Versus Signs  | 3  |
| Signs of the Time  | 3  |
| Piaget's Signing Connection  | 4  |
| Benefits from a Total Communication Program                              | 6  |
| Opposing Views on Total Communication Programs                           | 9  |
| Signing and Its Relationship to Verbalization                            | 9  |
| Decision Making Process in Implementing a<br>Total Communication Program | 12 |
| Implementing a Total Communication Program                               | 14 |
| Summary  | 18 |
| Appendices   | 19 |
| Jerrod's Study   | 20 |
| Table 1  | 25 |
| Table 2  | 26 |
| Bibliography   | 27 |

## INTRODUCTION

Communication begins at birth. As a child grows older needs and desires expand and new language skills are needed for expression and refined communication. As children approach school age and move into the larger community, development of communication becomes imperative.

The public school system offers education to a wide variety of students. This includes those children who are delayed in language development. Language problems can be due to genetic defects at birth, such as Down Syndrome, lack of stimulation in home environment, and physical handicaps, such as cerebral palsy. Such problems hinder children from verbally expressing their needs, thoughts, and desires. The public school system has to provide an appropriate education for these language-delayed children. How can this best be accomplished? What are the most effective methods? What does research suggest? These are important questions to be answered. They will provide direction to classroom teachers and special education teachers.

## DEFINITION OF TOTAL COMMUNICATION PROGRAM

In a culture that places major emphasis on communication skills, language development cannot be underestimated. The process of communication begins at birth and continues throughout life. Nonverbal aspects such as gestures, facial expressions, and general body language play a major role in communication, but people rely heavily on the use of verbal communication to respond to others (Chaney, 1982). Much of the basic structure of the English language is mastered by age three (Read, 1977). Therefore, language-delayed children need some system to put their thoughts into a mode that can be understood by others.

One such method is that of total communication, also known as simultaneous communication. Total communication is a system which involves signing a word with the hands while simultaneously verbalizing (Grinnel, 1976). A second definition is the engaging of tactile, visual, oral, and auditory modalities and combining spoken language (Read, 1982).

## GESTURES VERSUS SIGNS

Gestures are used to accompany speech acts. Adults point to pictures, objects, and shake their heads or nod them to affirm or negate spoken statements. It has been suggested that gestures serve the function of a valuable training tool for the acquisition of language. Gestures refer to movement of body or limbs to express something. Signs form a distinct, formalized branch of gestural communication. Whereas gestures can be irregular or imprecise, sign language is neither. Signs eliminate ambiguity and offer distinctly different visual input for each word.

## SIGNS OF THE TIME

Mary Ann Read (1977) states that one reason manual signing is ideal for language-delayed children is that one of the signing languages, Signing Exact English (SEE), parallels written and spoken English. SEE provides an alternate form of the native, basic English so that the child is not learning a foreign language. In SEE, there are individual signs for each letter of the alphabet. These are used for finger spelling. In this system there are also manual signs for all common



English words. For language-delayed children, one would draw on these signs to begin a total communication program. Included in SEE are prefix and suffix signs, those which change the tense, pronoun signs, and article signs (a,an, the) so that every word has its own sign. Using SEE the sentence "Two boys are running" is signed exactly that way using complete grammatical inflections.

The second signing language is Signed English. It uses signs and correct word order, but does not use inflections such as tense changes or plurals. An example of Signed English would be "Two boys run" for "Two boys are running." The absence of basic inflections is a major disadvantage of this sign system.

These two signing languages appear to be the most commonly used systems. When implementing a total communication program, one needs to decide which would be most beneficial and useable to the program.

#### PIAGET'S SIGNING CONNECTION

Piaget, a leading developmental theorist, believes there are stages of cognitive development. These stages, which are dependent

upon maturation and experience, are sequential and orderly. A child goes from understanding and perceiving on a concrete level to an abstract level. Signing provides abstraction plus concrete muscle movement. To introduce the sign, "ball", the teacher places the concrete object (ball) in the child's hands and lets the child feel the roundness of it. The ball is then removed and the teacher demonstrates the sign for ball and encourages the child to imitate the sign. This sign, which resembles two cupped hands facing each other and twisting at the wrist in opposite directions, is symbolic of the ball. The child goes from preoperational to concrete to abstract in his/her level of thinking.

Another of Piaget's processes of cognitive development is that of symbolic function, which is the ability of a person to visualize a concrete object from its symbol. 'Signing uses hand movements that are similar to the actual object which allows a child to develop this process of symbolic function.

## BENEFITS FROM A TOTAL COMMUNICATION PROGRAM

Children with handicaps are often dependent on the environment for assistance. Handicapped children need a communication system that will provide this assistance and allow them to gain some sense of control and mastery of their environment. Total communication programs have been found to meet this need.

In her Virginia classroom, Chaney (1982) found the addition of sign language to the language program led to increased language skills. In addition, teachers found better demonstrations of appropriate behaviors, communication with others, and a monitoring of classroom activities.

In this writer's classroom study, henceforth known as Jerrod's Study (see Appendix A), Jerrod is able to tell another child that it is time for juice or that he needs to go see a staff member. Jerrod helps the staff to set the table for lunch. If a utensil is needed, such as a cup, Jerrod can come and tell another staff member "more cups, please." In addition to developing communication skills, this fosters, in Jerrod, a feeling of

belonging, ownership, responsibility, and independence.

In Weller's research (1983), it was found that the early acquisition of a total communication system could have a positive impact on other elements of social, emotional, and cognitive development. This supported Grinnell's (1976) work in Seattle. If a workable communication system is found, all facets of a child's life can be affected.

JoAnn Simons Derr (1983) shares that her son needed a way to communicate and to influence his environment. A total communication system eased her son's frustrations and enabled him to be an active agent in his environment.

Willem (1982) cites, from previous research, that various nonlanguage benefits are derived from a total communication program. They are the following: greater attention and motivation, increased vocalization and intelligibility, increased manual dexterity, increased social interaction, and decreased behavior problems.

Another supportive example of the benefits of sign language can be found in a study done by

Donald F. Moores. He studied the development of deaf children who had both deaf parents and hearing parents. He did not use a total communication program but relied completely on sign. It was found that the children of deaf parents tended to be academically superior to the others throughout their learning years, according to all six studies. They had better social skills and showed more maturity and responsibility. The significance of this is that deaf parents communicated fully in the infant's early years, using whatever gestures were understood. The hearing parents, who knew only the medium of verbal communication, did not communicate with their infants during those critical early years. This study appears to support the idea that signing by itself can aid and accelerate the development of language in the early child. Therefore, coupling sign with verbal communication, as in a total communication program, offers the child a broader opportunity for learning.

## OPPOSING VIEWS ON TOTAL COMMUNICATION PROGRAMS

Although research indicates that a total communication program works to accelerate language development in language-delayed children, there are still those who question it. Many professionals in the field of language and communication development feel that the only route to communication is through oral speech and that the key to developing vocal speech is to remove other communication alternatives from the child (Read, 1980). Others suggest caution in using total communication programs because of a possible synchronization problems (Read, 1980). JoAnn Simons Derr (1983) relates that there is conflicting advice from professionals in regard to signing with a child who is not deaf.

## SIGNING AND ITS RELATIONSHIP TO VERBALIZATION

Various studies show that one of the benefits from a total communication program is the increase of verbalization. One such supportive study was done with children between 3 and 12 years of age in Seattle, Washington (Grinnell, 1976). During the first year, some students who were initially nonverbal learned to use signs as a limited means

of communication and began to pair vowel-like sounds with signs. Children who entered the program using some speech sounds increased the number of sounds produced, while other children progressed to saying complete words. Those children whose initial vocabulary was limited improved in intelligibility and began talking in phrases and sentences. In working with a nonverbal child, the initial sound or any sound in the child's repertoire is reinforced when paired with appropriate signs.

It was thought that once a student became successful with a signing system, the child would be less motivated to express himself/herself verbally. The Seattle study and Jerrod's Study show this to be incorrect. Read (1980) speculates from a study that the sign serves as a catalyst for speech development.

A mother of a language-delayed hearing child, JoAnn Simons Derr (1983), writes that as her son learned signs, he began showing interest in oral speech. As his program continued, his sign and expressive vocabulary increased consistently.

Wallick's (1980) experience strongly suggests that sign not only stimulates skill in communication, but often energizes expressive speech as well. It was also noted that signs dropped out as the spoken language was mastered. Jerrod's Study lends support to this suggestion also.

How or why verbalization occurs with signing is answered by three persons in Wallick (1980). Creedon observes that... "children feel, see, and hear the language----" when total communication is employed. Schaffer agrees that the therapist's voice or signs, or their combination, may serve as a cue for the child's responses. They propose the child's fading of signs as evidence of the internalization of their meaning. With the total communication program, one is simultaneously presenting the stimuli. Miller suggests that by pairing sign with spoken word, the meaning inherent in the sign transfers to the oral word. This facilitates the understanding of receptive verbal language and for some, stimulating the development of expressive verbal languages as well.



In a Virginia preschool for handicapped children, (Chaney, 1982), it was observed that children use signs to help supplement their auditory system by identifying and establishing meaning to the stream of language they hear. As children become more familiar with signs and begin to see the positive control their actions can have in getting their needs met, they are more willing to attempt verbal communication.

#### DECISION MAKING PROCESS IN IMPLEMENTING A TOTAL COMMUNICATION PROGRAM

The decision to teach sign language to a child does not depend on any single factor (Kriegsmann, 1982). The decision needs to be supported by data unique to that child's needs. The assessment process must consider the child's developmental status, the response from the different people involved, and the skill level of the training staff. The more criteria applicable to the child, the greater the probability that signing is an appropriate choice as an alternative communication system. Table 1 (page 25) indicates criteria to be considered when making a communication system decision.

Another issue in decision making concerns long-term objectives. Team members need to clearly state what they hope to achieve through this communication system, and a plan for achieving these objectives.

Long-term total communication objectives used in Jerrod's Study include the following:

1. The child will imitate signs.
2. The child will attempt vocalization for signs on request.
3. The child will use single or combined signs/words to express basic needs.
4. The child will respond to signed cues to facilitate word recall.
5. The child will develop grammatical rules through signs.

A final issue in this decision making concerns the people involved. It is important for the child to use a consistent communication system in all activities and environments. All persons in the life of the child such as teacher, aide, therapists, parents, and other family members must be committed to learning and using the same communication system. If there is no team interaction to train, support, and teach signs to the child and to each other, the program is in jeopardy.

## IMPLEMENTING A TOTAL COMMUNICATION PROGRAM

Kriegsmann (1982), Wallick (1980), Grinnell (1976), Read (1977), and Gumm (1985) cite examples of how a total communication program was established in various programs. This writer will draw upon personal experience and previously cited literature to demonstrate how a total communication program operates.

After the team has decided to implement a total communication system in the classroom, additional questions need to be answered to ensure a successful program. Following are those questions and responses.

Who will teach the team the signs? One can take sign classes at a university, on tv, attend training programs or read a sign book. In this writer's situation, the itinerant teacher for the hearing impaired of the local Area Education Agency conducted weekly SEE classes for the classroom teacher, classroom aides, speech clinician, occupational therapist aide, and other school personnel. Parents and family members were offered evening sign classes. This led to a consistent sign vocabulary system. The book, Joy

of Signing (1978), served as a reference. Copies were available both in the classroom and in the home.

How is the sign vocabulary determined? It was found that the first words used were those familiar to the child--ones that would be likely to ensure immediate success and provide motivation. In Jerrod's Study, signs representing family members were taught first. Next, nouns were added, names of toys, food, clothing, transportation vehicles, and body parts. As Jerrod encountered a need for a new sign, it was taught to him.

How does one get the child to sign? The adult utilizes demonstration, modeling, guiding of the fingers, and the visual tool, a mirror. The adult presents the manual sign, always paired with the vocal word of the object or action involved. The child is told to "sign \_\_\_\_". If he/she does not independently attempt to sign, it is the adult's responsibility to manipulate the child's hand into the shape of the sign. A mirror is an essential tool as the child can observe what is happening. Initially, reinforcement is given for

gross approximations. As the child begins to use signs more frequently, closer approximation of the sign is required.

When does one sign? It has been this writer's experience that you sign all the time. This, however, requires discipline on the part of the team. This discipline develops over time and experience. Table 2 (page 26) is a general outline of programming for total communication (Kriegsmann, 1982).

What part does a child's motor skills play in signing? One major consideration in vocabulary selection is the motor complexity of the sign or sequence signs. For each sign, the following motor components need to be considered:

- (a) placement in relationship to body (e.g., "see/watch/look," hand placed near eye; "happy/afraid/love," hand placed near chest);
- (b) relation of hands to each other; (e.g., two hands together, "with/shoe"; one hand on other hand, "wash/in");
- (c), type of movement (e.g., circular (wash), arc (us), flicking (bubbles), wiggle (fire), twisting (apple));
- (d), direction (e.g., out from body (go), towards body (want), alternate

directions (people); (e) hand configurations (e.g., different fingers (play), finger/thumb opposition (pick), open hand (mother), closed hand (yes). (Kriegsmann, 1982). Jerrod is now able to sign/vocalize "six" (thumb and little finger touch) whereas a year ago he would not have been able to do this. As mentioned earlier, improved manual dexterity is a benefit of a total communication program.

How does one encourage vocalization?

Verbalization increases with signing.

Reinforcement is given for verbal approximations.

A key phrase used in this writer's classroom is "sign it and say it."

What is the parent's involvement in a total communication program? All authorities stress the necessity of having the family involved in this total communication program. The child must use the same communication system in all his/her places and activities - home, school, and play. There must be a positive working relationship between home and school so that the child receives a consistent program. Daily notebooks between the

home and school, phone calls, home visits, and conferences enable a program to be successful for the child.

#### SUMMARY

When a language-delayed child enters the school, one must examine research on communication systems. It will be found that the total communication system has been researched and utilized effectively. Positive results have been found. By using this system, the child is able to interact in the environment in a way that will allow active participation and development to full potential.

## APPENDICES

|                |    |
|----------------|----|
| Jerrod's Study | 20 |
| Table 1        | 25 |
| Table 2        | 26 |



## JERROD'S STUDY

Health History

On March 25, 1980 Jerrod was born to two healthy parents age 25 and 24. At birth, Jerrod weighed 7 lbs., 12 oz. It was immediately observed that he had respiratory distress, did not cry spontaneously, seemed to struggle to breath, and often turned blue. He was transferred to the Neonatal Intensive Care Unit of Trinity Regional Hospital in Fort Dodge, Iowa. There it was found that he had a respiratory infection. When he recovered from the infection, it was realized that his cry was weak and high-pitched, "like a cat."

At the age of 3 1/2 months, Jerrod was examined by the staff of Mayo Clinic, Rochester, Minnesota. Several doctors suspected that Jerrod had the "cri-du-chat" syndrome because of the specific nature of the cry. Dr. H. Gordon, Genetic Counsultant, explained that in this syndrome there is a deletion of part of the short arm of a chromosome #5 (5p-). The abnormality of this chromosome affects the development of the larynx. Jerrod had some of the clinical manifestations of the 5p- syndrome. However, it seemed that not all

of the 5p chromation had been lost. This partial loss allowed for some prognostic optimism. The doctors at Rochester informed the parents they should give Jerrod every possible encouragement and stimulation to develop.

Jerrod is presently being followed by the Iowa Mobile and Regional Child Health Specialty Clinics. This team consists of a pediatriitian, speech and audiology consultant, and physical/occupational therapist. These persons are able to observe Jerrod, answer the questions staff and parents have regarding Jerrod's development, and make recommendations for programming at home and school.

#### Educational Program

Jerrod received Home Intervention Services from approximately 8 months of age until his entrance into a center based preschool handicapped program at the age of 3 1/2 years. Jerrod had begun his total communication program with his Home Intervention teacher. Presently, Jerrod attends a preschool handicapped program five days a week receiving occupational therapy, speech

therapy, and individual and small group work in the classroom.

### Strengths and Progress Towards Goals

Jerrod has a sign vocabulary of approximately 100 signs/words. His verbal communication is limited to single word utterances that are characterized by vowel sounds, vowel plus consonant, and consonant plus vowel syllables. Jerrod's verbal attempts can be difficult to understand if one is not aware of the context in which he is speaking or familiar with his approximations of words. Jerrod's verbal attempts are also easier to understand when the word is accompanied by a manual sign. His verbalizing more closely resembles the true word when he remembers to use an easy voice, which means that he does not talk loudly and try to force sounds. This "talk easy" does not stress or strain the larynx. Staff and parents need to be sure to encourage a relaxed production and remind Jerrod to "talk easy."

The Sequenced Inventory of Communication Development (SICD, Keahedrick, 1975) is an instrument which attempts to measure expressive

language development in children. A Receptive Communication Age (RCA) and a Expressive Communication Age (ECA) is obtained from this instrument. The following progress has been made by Jerrod over the last three years. Signed responses are recorded as verbal responses as that is part of Jerrod's communication system.

5-24-84 RCA 28-32 months

ECA 12-24 months

4-25-85 RCA 36 months

ECA 36 months

5-23-86 RCA 40 months

ECA 40-44 months

This progress supports the contention that a total communication system has increased Jerrod's development of expressive and receptive language skills.

#### Goals for the 1986 School Year

The staff members will be given an advance signing class during the school year by the itinereant teacher for the hearing impaired of the local Area Education Agency. A goal for the

staff will be to begin to use sign combinations with grammatical forms while signing to Jerrod. The team feels that if Jerrod is exposed to a more complex signing system he may begin to combine signs himself more frequently.

Plans are to have Jerrod integrated into a kindergarten room during language time. This would enable a group of age peers to become acquainted with Jerrod's communication system. Thus, when Jerrod leaves the preschool and goes to a new building, there will be children who know his system and can talk with him. This integration will give Jerrod a language model, behavior model, and an opportunity to functionally use his communication system. Jerrod's weighted enrollment has been increased so that funding will be available for future sign interpreters. Kindergarten teachers have expressed a desire to have sign-language classes for their children.

TABLE 1  
Possible Candidates for Signing

| Needs Assessment                        | Strong Candidate  | Questionable Candidate   |
|---|---|--|
| Cognitive Level                         | Early Preoperational (Above 2½ years)   | Late sensori-motor (s/m) Stage VI (18-24 months)<br>(Poor) Below s/m Stage VI (Below 18-month level) |
| Chronological Age                       | Generally above 2½ years<br>Decision not dependent on C.A.                      | (same)   |
| Verbal Comprehension                    | At least 1 year above production  | Less than 6-month discrepancy with expressive skills<br>(Poor) Limited meaning associated with words |
| Intentional Communication               | Varied, consistent means to express intent, needs, perceptions                  | Highly restricted gestural, vocal performatives (share/request/comment/inform/ask/protest)           |
| Manual Dexterity                        | Independent, controlled finger, hand, arm movements                             | Labored, inconsistent, imprecise movements   |
| Imitation/Retention of Signs            | Attends well to model, self-corrects, consistent production, deferred imitation | Needs numerous presentations/prompts. Cannot produce after time delay                                |
| Interest in Signing                     | Seeks out new signs/prefers sign versus other mode                              | Does not focus on signer/resistive to sign training/learning rate better in alternative system       |
| Speech Production                       | Unintelligible or highly restricted phonetic repertoire                         | Articulation patterns consistent with developmental level  |
| Speech Intervention                     | Minimal vocal/verbal changes after 6 months therapy                             | Steady increase in vocal/verbal behaviors with therapy   |
| Family Support/Training                 | Family wants sign program<br>family training available on weekly basis          | Signs restricted to classroom/no family training commitment  |
| Staff Knowledge of Language Development | Information recent in structural/content/pragmatic (functional) areas           | Limited understanding of signing as a language system  |
| Staff Support/Training                  | Staff committed to sign program/provides for regular training sessions          | Responsibility for sign program assumed by single staff person                                       |
| Staff Signing Ability                   | Fluency can meet child's signing objectives                                     | Limited knowledge of sign systems or sign production   |

TABLE 2  
Programming for Signs

| General Focus/<br>Degree of Structure                       | Classroom/Home<br>Setting(s)   | Goals  |
|---|--|--|
| Acquisition<br>Formal: Highly Structured                    | 1:1 Sign instruction<br>Snack<br>Story   | To learn how to form signs.<br>To gain confidence in forming signs.<br>To increase manual dexterity.<br>To acquire mnemonic devices, i.e., initial-<br>ization and associations. <sup>a</sup><br>To begin to form combinations of signs.<br>To learn new signs.<br>To learn to read signs, i.e., to understand<br>other's signs.<br>To establish a core of signs and to increase<br>variety.<br>To begin communicative use of signs.<br>To begin to self-correct production with and<br>without prompts. |
| Transfer & Maintenance<br>Semi-Formal: Semi-Struc-<br>tured | Snack/Meals<br>Story<br>Music<br>Child-directed play<br>Walks<br>Dressing<br>Bathing<br>Academic Instruction   | To increase communicative use of signs.<br>To gain confidence in using signs to com-<br>municate in familiar settings/situations.<br>To practice for fluency (retrieval & forma-<br>tion).<br>To self-correct production.<br>To self-correct use of signs, i.e., to use the<br>appropriate sign.<br>To increase the use of sign combinations.<br>To begin using signs as a language system.  |
| Generalization<br>Informal: Natural                         | Snack/Meals<br>Story<br>Music<br>Child-directed play<br>Riding in the car<br>Trips to the zoo, beach, grocery<br>store, shopping, movies<br>Walks<br>Gross Motor Skills/Games<br>Outdoor Play<br>Dressing<br>Bathing | To spontaneously use signs to communicate.<br>To demonstrate confidence in using signs to<br>communicate in a variety of settings/situa-<br>tions, with a variety of people.<br>To help other children/adults understand<br>and learn signs. <sup>b</sup><br>To teach children and other adult signs and<br>how to read signs.   |

<sup>a</sup> Adult goal.

<sup>b</sup> Child goal.

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