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ABSTRACT

This study evaluated the use of facilitated communication to improve basic communication skills with five nonverbal severely and profoundly mentally handicapped students (11 and 12 years old) with cerebral palsy. Subjects were trained in the use of facilitated communication and in activities that encouraged students to point to "yes" or "no" on a communication board. Mastery was measured by the number of correct yes/no responses shown during biweekly activities. Four of the five students mastered both communication objectives (pointing and choice making) and three students were using communication boards routinely at home. One student was using a communication board for more general communication purposes and appeared to have academic skills at about the fourth grade level. Facilitated communication is seen as a tool to unlock the capabilities of individuals assumed to be incapable of real communication. Appendices include a sample of dialog made possible through facilitated communication. (Contains 18 references.) (BD)

USING FACILITATED COMMUNICATION TO IMPROVE YES/NO RESPONSES IN ELEMENTARY AGE NON-VERBAL SEVERELY AND PROFOUNDLY MENTALLY HANDICAPPED CEREBRAL PALSIED STUDENTS

by

Margaret K. Barabash

A Practicum Report

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Abstract

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Communication skill deficit has been a major problem area to those who work with the non-verbal student. Few severely/profoundly mentally handicapped students have been able to indicate a simple choice or make reliable yes/no responses. This practicum report describes a project to improve communication skills implemented in the author's classroom at an Exceptional Student Center. A target group of five non-verbal severely and profoundly mentally handicapped cerebral palsied 11 and 12 year old students were trained in the use of the technique of Facilitated Communication. This method involves supporting the arm or hand to facilitate effective pointing. Activities encouraged students to point to yes/no on a communication board. Mastery of the objective was measured by the number of correct yes/no responses shown during bi-weekly activities. Observations by others were also made to document generalization of the skill by the students. Four of the five students in the target group mastered both communication objectives. Additionally, three of the five students are now using communication boards routinely at home. One student showed remarkable progress and is using a communication board to answer questions and participate in conversation by pointing to letters on the communication board.

Authorship Statement/Document release

Authorship Statement

I hereby testify that this paper and the work it reports are entirely my own. Where it has been necessary to draw from the work of others, published or unpublished, I have acknowledged such work in accordance with accepted scholarly and editorial practice. I give this testimony freely, out of respect for the scholarship of other workers in the field and in the hope that my work, presented here, will earn similar respect.

Margaret K. Barabash
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CHAPTER I

Purpose

The setting for this project was an Exceptional Student Center on the campus of a large public elementary school. The school was located in a rural area, 10 miles outside of a major southeastern city. It was classified as a neighborhood school and all but 47 students at the elementary school lived within a five mile radius of the school. The elementary school included grades kindergarten through six and was administered by a principal and an assistant principal. The total elementary school population was 1,060. There were an additional 92 students, aged three to 21, assigned to the Exceptional Student Center which had students classed in pre-school through high school grades. The Center was administered by an assistant principal subordinate to the elementary school principal.

The Center was physically separated from the elementary school by a large field and consisted of 13 portable classrooms and a small main building. The main building had three classrooms, a computer area, a

therapy room, and a small multi-purpose room in addition to administrative spaces. All but four of the students at the Center were bussed daily and came from an area encompassing the eastern two-thirds of a large county. This area was approximately 320 square miles. Students spent from 10 to 90 minutes or more on the bus each way to and from school. The average one-way bus ride was approximately 40 minutes. The Exceptional Student Center did not share the same "neighborhood" classification as the main school.

All students enrolled at this Center were defined as Severely and Profoundly Mentally Handicapped (S/PMH). The following definition from the Bureau of Education for the Handicapped (BEH) of the Federal Office of Education (USOE, 1974, Section 121.2) as cited by Power and Handleman (1984:2) applies:

> Severely handicapped children are those who, because of the intensity of their physical, mental, or emotional problems or a combination of such problems, need education, social, psychological, and medical services beyond those which are traditionally offered by regular and special education programs, in order to maximize their full potential for useful and meaningful participation in society and for self-fulfillment. Such children include those classified as seriously emotionally disturbed (schizophrenic and autistic), profoundly and severely mentally retarded, and those with

> two or more serious handicapping conditions such as the mentally retarded-blind and the cerebral palsied-deaf.
>
> Such severely handicapped children possess severe language and/or perceptual cognitive deprivations and evidence a number of abnormal behaviors including: self-mutilation, self-stimulation, manifestation of durable and intense temper tantrums, and the absence of even the most rudimentary of forms of verbal control, and may also have an extremely fragile psychological condition (Pub. L. No. 95-602, Section 121.2).

The population at the Center included 28 students in high school through age 21; 19 junior high students; 36 elementary students and nine pre-schoolers. Students came from a variety of home situations including 19 students who lived in various group homes with five to six other handicapped children. Additionally, 21 were living in an extended family environment, 12 came from single parent homes and two were with foster parents. The remaining 38 students lived in traditional nuclear families. Approximately 68 students received free breakfast and lunch. Racially, 22 of the students were Black, 10 were of Hispanic origin and the remaining 60 students were White.

The S/PMH students were assigned to classes at the Center according to age and functional level. All 15

classes were self-contained with five or six students in each class led by a teacher and two aides. The students were also divided into two groups, ambulatory and non-ambulatory, based on assessment and curriculum needs. There were seven classes of ambulatory students and eight classes of non-ambulatory children.

As a teacher of five non-ambulatory S/PMH students, this writer was also chairperson of the Curriculum Committee for the Profoundly Handicapped (CPH). This committee consisted of eight teachers who taught the non-ambulatory students and various therapists who were involved with this population. The CPH committee was involved in the assessment of individual students and assisted every teacher in developing appropriate objectives for each Individual Educational Plan (IEP). It also developed activities, materials and teaching methods to meet the needs of the curriculum.

This committee was actively involved in reviewing recent research in attempts to find new and innovative techniques to improve student learning. The CPH curriculum was considered functional and involved five particular areas: Daily Living Skills, Communication,

Motor, Social/Leisure and Environmental Awareness. The daily program in each classroom included objectives in these five areas.

The CPH committee's major focus had been in the area of Communication. The eight teachers who worked with this population believed that developing communication skills was most crucial. It was the primary means by which learning in all other basic skill areas was acquired. The CPH committee had been pursuing methods of alternative communication, such as communication boards, eye-gaze techniques and computers. Committee members also attended numerous in-service training sessions presented by acknowledged experts in the communication field. The goal of these efforts was simply to improve communication skills and thus enhance student potential to learn the other basic skills.

All 44 non-ambulatory students served by the CPH were non-verbal and were not likely to acquire functional speech due to low cognitive levels or lack of oral motor development. Nine of these students qualified for speech therapy services whereas 25 of the 46 ambulatory students also qualified for speech

therapy. The speech therapist worked with these students directly in the classroom and also acted as a resource for the teacher and the CPH. Criteria to qualify for speech therapy services in this county included a minimum of an 18 month level of communication and language functioning in both receptive and expressive language. The tests normally used in this qualification process included: Birth to Three (Bangs, 1986) and the Non-Speech Test (Huer, 1988).

In some cases, teacher and therapist judgement was used to qualify students. This subjective judgement was used especially for students who scored high in receptive skills but low in expressive scores because of poor motor control or oral skills.

Improving communication skills in the non-ambulatory Severely and Profoundly Mentally Handicapped (S/PMH) students was the major concern of the Committee for the Profoundly Handicapped (CPH) for the 1992-1993 school year. Acquiring successful methods and techniques in this area was particularly challenging because the majority of this population was non-ambulatory, non-manipulative and non-verbal. These students were dependent on others for daily care and

were unable to express needs and desires. The teachers realized the importance of teaching functional communication skills. Through better communication skills, the teachers believed, these students would also improve in the other areas of the curriculum, reduce helplessness, and achieve control over their own lives.

Despite the efforts of the teachers, the CPH students consistently did not master Individual Educational Plan (IEP) communication objectives within one year. More than 50 percent of these students had the same communication IEP objective for two years or more. Only one student qualified for speech therapy during the 1992-1993 school year, along with the eight others previously qualified at this Center. Expressive scores continued to be too low to meet county requirements.

A few of the students had some success using eye-pointing to identify or choose an object or picture. Less than 20 of the students were using some gestures or facial expressions to make a choice or indicate a yes/no response. Records showed that the students were inconsistent and performed successfully only 40 percent

of the time.

In this teacher's class of five students, 80 percent qualified for speech therapy. All four of these students, however, scored below the 18 month level on expressive language. Since these students were all diagnosed as having Cerebral Palsy along with low cognitive abilities, subjective judgement was used in the qualification process. Receptive skills in these students appeared high as shown by facial expression and eye-pointing skills. It was difficult to assess the communication skills because of the lack of motor control. The students were unable to use arm or hand movements effectively for gesturing or pointing due to various degrees of Cerebral Palsy. Head nodding for yes/no was also inconsistent.

At annual parent conferences and during IEP development, the parents of these five students all expressed the need for their child to learn to use some type of communication system. Communication skill improvement was the single most important area of concern for the parents. All of the parents were willing to work with the students at home and all were willing to purchase any device or piece of equipment the teacher suggested.

Three of the five students in this class had not mastered IEP communication objectives in three years. Although records showed some improvement, the lack of mastery was of great concern to this teacher and to the parents.

Specifically, the three students who had not been able to master communication objectives were encouraged to indicate yes/no appropriately and consistently. Various procedures or techniques had been used to improve yes/no responses. These included head or hand gestures, eye-pointing, and pointing to yes/no symbols. Symbol cards for yes/no had been taped to wheelchair trays, but students had been unable to point to the desired symbol. Some success was made, but, certainly not enough to master this objective or to indicate the student had acquired a functional yes/no response technique that could be used consistently to communicate with all others in the environment. This teacher saw a definite need to improve yes/no response skills in these three students so the students would master IEP objectives and be able to communicate choices to others effectively and accurately.

In the writer's class, one of five 11 and 12 year

old S/PMH students had mastered the IEP objective in the area of communication of indicating yes and no choices reliably. A minimum of clear yes/no response on four of five trials was required for the student to have mastered this skill. Ideally, at least four of five students, or 80 percent of the class, should have mastered the communication IEP objective. A discrepancy of at least three students existed. There was a need to increase the number of students mastering the communication objective of reliably indicating a yes/no response by at least three, or 60 percent, of the students so that overall at least four of the five students in the class could indicate yes/no preferences.

This researcher had observed consistent failure of the non-ambulatory Severely and Profoundly Mentally Handicapped (S/PMH) students to master Individual Educational Plan (IEP) objectives in the area of communication. Weekly records showed only minimal improvements. Three of the students in class receiving speech therapy had not mastered the same objective (indicating yes and no) in a three year period. These three students had also tested below the 18 month level

of expressive language.

Test results in expressive language on the Birth to Three (Bangs, 1986) and the Non-Speech Test (Huer, 1988) for each of the three students placed student M at the 12 month level on the Birth to Three and at the six to 12 month level on the Non-Speech Test; student R at the 16 month and 15 month levels, respectively; and student A at the 14 month and 9 month levels for these tests. The remaining students, though not tested with either the Birth to Three or the Non-Speech Test, were also included in communication activities with the same goal. Student L did not receive speech therapy but similarly could not identify yes/no. Student Z had already mastered the skill but needed practice applying the skill. The students identified above participated in a 12-week program utilizing the technique of Facilitated Communication to improve communication skills in expressive language.

Specifically, over a 12-week period, at least 80 percent of the five 11 and 12 year old Severely and Profoundly Mentally Handicapped (S/PMH) students should have shown mastery of the communication objective by demonstrating the ability to indicate yes/no responses

appropriately and accurately at a rate of 80 percent. Mastery of this objective was measured by analysis of the data of individual student responses recorded by the teacher twice weekly throughout the project.

One of the most difficult things for a Severely and Profoundly Mentally Handicapped student to accomplish is to think critically and generalize newly learned skills. A second objective for this project involved the higher order thinking skill (for a S/PMH student) of generalizing new mastery. Over a period of 12 weeks, at least 80 percent of the five S/PMH students should have been able to generalize the skill of indicating yes and no reliably so that a panel of trained observers could reliably judge the student's response. Interrater reliability of the student's response of at least 80 percent was required for this objective to be met.

CHAPTER II

Research and Solution Strategy

In the area of teaching communication skills, the number of studies conducted with non-verbal and profoundly multiply handicapped individuals was very limited. Reasons for this included the difficulty in working with this population due to the nature of the profound physical and sensory handicaps and the relatively small number of students who were severely handicapped. Some of the limited research showed an increased interest in the field of communication for non-verbal individuals.

Realon, Favell, and Lowerre (1990), conducted a study involving two severely mentally handicapped young men. Both individuals were non-verbal and were diagnosed as having Cerebral Palsy in the form of spastic quadriplegia. This study evaluated if these individuals could make a choice of leisure items, and if so, what effect choosing had on the interaction with the selected item. Observations were made to see if there was a higher rate of interaction with the selected item versus a teacher selected item. Both

young men were able to indicate "yes" by smiling or increasing gross body movements.

The results showed that the young men did interact with the chosen toy at a higher rate than with a toy selected by others. The authors emphasized the importance of choice-making in improving the quality of life for severely handicapped individuals. As choice-making skills improved, students participated more fully in activities.

A more recent study, conducted by Tirapelle and Cipani (1992), related the implementation of a training program for two mentally handicapped students who had previously displayed no purposeful speech. One student was a six year old boy with Down Syndrome classified in the severe mentally retarded range. The other was a moderately retarded female with Cerebral Palsy. The objective of the study was to train the students to request items during snack time either by vocalization or through the use of manual sign. The trainers used a missing-item format in which one item of three was removed from the snack routine to create the opportunity for the child to request this item. At the beginning of the daily sessions, the students asked for

the missing item only 20 percent of the time. During training, the students were immediately given the requested item and reinforced with a snack. At the end of 10 weeks of training, each child routinely requested a missing item 80 percent of the time.

The requesting skills were also generalized to other items. The authors stressed that the development of functional requesting skills should be a major part of the curriculum for children with severe handicaps. The importance of being able to generalize a requesting skill across different tasks, people and items was also emphasized in this study.

During implementation of this project, this teacher was encouraged to find that more professionals were now recognizing that a most important component of the quality of life was the individual's opportunity for choice and control. This teacher continued to review literature which supported this point of view.

One particular recent study by Brown and Lehr (1993) described a 10 year old female with multiple disabilities and profound mental retardation who was resistant to being physically manipulated during routine activities. Those assisting this child felt

that her resistance was the result of her having no control over the events in her daily life and no choices about what happened to her body.

A strategy was attempted to provide more opportunities for this child to choose whether or not she wanted to participate in an activity. A picture of an activity was presented. The child was encouraged to raise her left hand if she chose not to participate in the activity, and she was discouraged from crying or pouting to show refusal. The significance of this procedure was that it increased the student's control and it showed her a method of communicating her message appropriately and succinctly. The student was being reinforced for communicating her choice and eventually decreased her refusals and increased her participation in daily activities.

During implementation of this project, the five multi-handicapped children were consistently encouraged to communicate choices appropriately. This teacher questioned this study's use of only a response to show refusal. Thus, this teacher introduced and encouraged the use of both yes and no responses by the students. The ultimate goal was to increase the student's meaningful

participation in activities with greater control over the environment.

Houghton, Bronicki, and Guess (1987) studied the nature of communication as it related to students with severe multiple disabilities. The authors observed 30 students in 12 classrooms and coded the frequency of communication opportunities related to choice-making or preferences.

The data determined that classroom staff responded at a very low rate to student-initiated expressions of choice during the school day. These results showed that staff were unaware of student attempts to communicate and thus many opportunities for interaction were ignored.

The authors identified the need to provide communication "facilitators" knowledgeable of methods to enhance opportunities for communication. The authors stressed the need for more education on strategies and methods available to persons with severe communication deficits in order to improve communication skills.

In a study of eight mentally retarded non-verbal students ages 10 to 14, Peck (1985) attempted to increase the quality and number of opportunities for

these students to exercise control over aspects of instructional interactions. Peck concluded that typical classrooms for these students are too controlling and limit opportunities for interaction. The author suggested that low levels of language production may be associated with the absence of interaction opportunities. Teachers and aides in this study were taught to increase the rate of providing choices and to wait for the students to respond.

Videotape was used for evaluation to assess changes in teacher and child behavior. Teachers viewing the video noted the positive results in increased student responses when the students were given more choice-making opportunities and permitted time to respond.

Recently, a method to enable non-verbal individuals to communicate has come to the attention of parents and educators of individuals with severe communication deficits. This technique was first described in the United States by Biklen (1990) after visiting Australia and observing the work of Crossley, founder of the Dignity through Education and Language Center (DEAL) in Melbourne, Australia. Biklen observed

and recorded the communication of many individuals using Crossley's method, known as Facilitated Communication or FC. Biklen's first publication on Crossley's method introduced FC to America and has been credited with starting a movement that continues to create much excitement among disability professionals.

Biklen (1990) detailed a study of 22 students with severe communication deficits who were labelled as "cognitively disabled", and, after intervention showed remarkable literacy. All 22 demonstrated the ability to type single words and the majority were able to produce sentences. Biklen concluded that the students' inability to communicate was not a result of low cognitive abilities, but rather an inability to translate processes into action.

Crossley (1980) first described facilitated communication by detailing work with a 16 year old afflicted with athetoid Cerebral Palsy and exhibiting no intelligible speech. The child had been labelled profoundly intellectually impaired and was, as was the norm, institutionalized. After working with Crossley for two years, this student was released from the institution and has since graduated from college. Now,

as an adult, she still uses physical support or facilitation to point accurately to letters on a keyboard to communicate.

Facilitated Communication (FC) is described as a very simple training method for individuals who are unable to access a communication aid independently. The individual needs physical support to point to words, pictures or letters. The amount of support a person needs depends solely on individual ability. The person giving the support is called a facilitator. This facilitator helps the individual isolate the index finger and stabilize the hand and as the hand is supported by the facilitator, the individual then can point to choices on a communication board. The facilitator does not point for the user or move the user's hand toward the selection. Over time, the support may be reduced or even eliminated as the communicator becomes more experienced with the technique.

Crossley (1992) also discussed success with numerous individuals with severe communication impairments, diagnosed with Cerebral Palsy or Autism. In a test, 452 individuals were unable to type or make

independent accurate selections on a communication board. With the use of facilitation however, 70 percent of these same 452 individuals were able to type or create comprehensible sentences.

Another study (Biklen and Schubert, 1991) of 21 Autistic students with severe communication disorders showed surprising results. Data collection included observations of these students without the use of Facilitated Communication and observations of the same students while using facilitation. A team of 11 researchers participated in the observations. The youngest student was three years nine months old while the other 20 were all of elementary school age. Only one student did not demonstrate knowledge of words, but was able to point to correct pictures and colors. Two students typed words and 18 of the students were able to produce complete sentences.

Some of the students are quoted in this article and display unexpected social awareness. Prior to being introduced to Facilitated Communication it was assumed that none of these students could comprehend language.

Biklen (1992) further documented his work with

students using Facilitated Communication. He detailed the success of three Autistic students, ages seven, 14 and 25 years old, each with severe communication deficits. Without facilitation, these three individuals demonstrated no effective means of communication. With facilitation, both school aged students are currently able to participate in academic instruction with same-age peers and are performing at or above grade level in all subjects. The 25 year old, previously considered severely retarded, is typing single, two or three word responses to questions.

The introduction of Facilitated Communication to 20 developmentally disabled non-verbal adults at the Saratoga County (NY) Association for Retarded Citizens was discussed by Fox (1992). She described this client group as being initially exposed to letters, names and matching words with pictures. Gradually, the 20 individuals were subjected to sentences. Half of these clients are now typing full sentences and the other 10 are still typing only "Y" and "N" for yes and no. The staff at this center believe this to be a most significant breakthrough as the clients had no means of expressing either pleasure or displeasure prior to

using Facilitated Communication.

Woods (1992) discussed Biklen's work along with the work of other special education professionals. Specifically, she cited the work of Wolff, Program Director of the Children's Annex in Kingston, N.Y., a facility serving 130 Autistic and multiply handicapped students. Wolff worked with 55 students who lacked oral language or functional communication. Half of the students were classified as "Autistic", and the remainder classified as "multiply handicapped". After one year, all 55 of the students were able to communicate effectively through the use of Facilitated Communication. Ranges of success varied, however. Whereas some of the students showed literacy at or above age level, others still functioned at a cognitively impaired level even with FC. One boy, previously classified as severely mentally retarded, is now preparing to enter the seventh grade class and no longer needs a facilitator's touch to type.

Other authors (Spake, 1992; Mararuska, 1991; and Harrison, 1992) describe remarkable results that have occurred since Facilitated Communication was first introduced to the United States. Each of the authors

clearly documented the need for further studies. Continuing research is currently being conducted throughout the United States and most notably at Syracuse University where informational and training workshops are being conducted for both parents and educators to spread awareness of this technique.

In January 1993, this teacher attended one such workshop presented by the Facilitated Communication Project, Syracuse University. The keynote speaker at this workshop, McSheehan (1993), discussed the latest developments in the use of facilitated communication. He described the procedure in detail and documented many successes with non-verbal individuals.

A significant aspect of McSheehan's lecture dealt with the issue of validation. McSheehan stressed that the validation of facilitated communication was absolutely crucial. Several qualities validated the students' communication and showed that it was actually their own words and not those of the facilitator. First, students typically made typographical errors that were unique to them. Secondly, many students produced phonetic spellings that were also unique to

them and did not appear to be the work of the facilitator. Thirdly, students typed phrases and/or sentences that were peculiar to them including the occasional use of profanity. Finally, students often typed a response that was unknown to the facilitator.

The first five studies discussed above involved improving the ability of non-verbal individuals to make choices. Realon, Favell, and Lowerre (1990), Tirapelle and Cipani (1992), Brown and Lehr (1993), Houghton, Bronicki, and Guess (1987) and Peck (1985) considered choice-making as a crucial element of the particular study. Further, these authors concluded that with training, choice-making skills could be developed. It was also important to develop this skill so that it would be generalized and used in all settings and with various people. Functional use of a simple yes/no response to make a choice greatly influenced the individual's ability to become more independent and to interact in a more meaningful fashion with the environment. This teacher agrees with the importance of developing choice-making skills in the non-verbal student. Previous instruction and training in this teacher's classroom had met with only minimal success.

The recent literature detailing Crossley's method of Facilitated Communication was most encouraging. Prior to and during implementation, this teacher attended lectures and training workshops to learn more about this technique. The success of others' work using Facilitated Communication related in the recent literature had demonstrated to this educator that this method could be a viable tool in improving the communication skills in the Severely and Profoundly Mentally Handicapped student at the target Center.

Since Biklen introduced Facilitated Communication in the United States in 1990, the emphasis had been primarily placed on its use with people with Autism. In considering the use of facilitation with students having physical disabilities, this teacher realized that Crossley first developed this method when working with a child afflicted with Cerebral Palsy.

Inspired by Crossley's work, this teacher implemented a program to train five S/PMH students, with Cerebral Palsy, to use Facilitated Communication. Through the use of Facilitated Communication, these five students were encouraged to indicate yes/no responses on a communication board.

CHAPTER III

Method

This project was implemented in this teacher's classroom located at an Exceptional Student Center (ESC). The project ran for a period of 12 weeks and included a target group of five Severely and Profoundly Mentally Handicapped (S/PMH) elementary aged students assigned to this teacher's class. Each student was non-verbal, non-ambulatory and afflicted with some degree of Cerebral Palsy. Parental consent was obtained prior to implementation of the project (Appendix A:59). School permission to conduct this project was also obtained from the assistant principal administering the Exceptional Student Center prior to commencement of the project.

Prior to implementation, this teacher, in conjunction with several other professionals at the ESC, attended training sessions on the use of Facilitated Communication. Instruction concentrated on methods of facilitation, the physical technique of using Facilitated Communication and suggestions of how to implement a program unique to the specific target group. The teacher

aides assigned to this class were also trained in Facilitated Communication techniques. These two aides participated in the group activities and served as facilitators during these activities.

All five students in the target group have limited motor control due to Cerebral Palsy and all received occupational, physical and speech therapy at the ESC. Two students received vision therapy in addition. The therapists provided consultive services to this teacher throughout the 12-week implementation period and assisted with any modifications when necessary. The speech pathologist also served as an observer and assisted with informal evaluation of student progress throughout the project. The therapists also assisted during the activities and occasionally acted as facilitators.

The first week of implementation involved set up and introduction of the activities that then continued weekly. The students were introduced to the actual concept of Facilitated Communication and shown how to use pointing skills. This activity concentrated on building self confidence to ensure full cooperation and participation throughout the project.

Collaboration with the therapists relating to the

physical needs of each child also took place during this week. Proper positioning and degree of physical support required were formulated. The degree and type of physical support needed to facilitate effective pointing was selected for each student.

Additionally, exercises to improve motor control and pointing skills developed by this teacher, and the occupational and physical therapists, were introduced to the students during this first week of project implementation. The two students with low muscle tone followed a program to strengthen and balance arm and finger muscles. The three students with high muscle tone or spasticity focused on relaxation techniques. These individualized exercises were an integral part of the bi-weekly group activities but were modified as necessary as motor control changed. The students were also encouraged to use pointing skills throughout the school day during all other activities not directly associated with this project.

Actual activities began in the second week and continued twice weekly thereafter. During week two, the students were encouraged to point to familiar objects, such as cup, spoon and ball. Exercises and

pointing skills were practiced to familiarize the students with the technique of being supported by the facilitator and pointing accuracy.

Activities during weeks three and four began with exercises and included pointing to familiar pictures. When given a choice of two, students were asked to point to a named picture. At the end of week four, student progress was evaluated. Students showing improvement advanced to the use of communication boards.

Student L showed little or no progress and continued with picture pointing. Modifications were made to include exercises and activities to reduce this student's tactile defensiveness. Suggestions from the occupational and vision therapists were implemented to improve pointing skills and compliance with the activities. These activities continued with student L for the remainder of the project. Also during week four, the vision therapist volunteered to work with student A on pointing skills during regularly scheduled bi-weekly vision therapy sessions. These extra lessons continued throughout the remainder of the project.

Communication boards were introduced to the other four students during week five. Students A and D used

a communication board having only the words "yes", "no", "stop", and "don't know" printed on four squares (Appendix B:61). Students M and Z, who showed higher language skills, used a communication board with letters similar to those on a standard computer keyboard (Appendix C:63) and adapted to include the words "yes", "no", "don't know", and "stop". These boards were used throughout the remaining activities. The activities in week five involved pointing to yes/no on the boards when shown familiar objects correctly or incorrectly named.

Weeks six, seven and eight continued with exercises. The students pointed to yes/no when presented with familiar pictures. For example, when shown a picture of a cat, the student was asked "Is this a dog?" Student L was hospitalized in week six and remained absent through week eight. During week seven, student D was hospitalized and did not return to school until week 11 where he continued pointing to yes/no to identify pictures for the remainder of the project.

Weeks nine and 10 continued with exercises and pointing to yes/no when shown assorted pictures that indicated an action or required a simple judgement.

Students were asked questions such as "Is the boy running?. . . happy?. . . sad?" Modifications were made during week nine for students A and M who were moving through their activities quickly and were accurately pointing. Both students began enrichment activities that were incorporated within the bi-weekly sessions.

Student A began enrichment activities involving pointing to small cards containing familiar names, color words or other simple words. Ten cards were presented and the student was asked to point to the correct one in response to a particular question. Student A continued bi-weekly sessions concurrently with the vision therapist.

Student M, who showed the most advanced progress, began daily 30 minute enrichment activities. These activities involved pointing to letters of the alphabet, spelling words, answering questions and performing some basic arithmetic calculations. Teacher aides served as facilitators during these activities.

During weeks 11 and 12, the students continued with exercises and were introduced to simple word questions such as "Is your hair red?" or "Are you a

girl?" Some picture identification was also reviewed. Students were observed by trained facilitators during the final three sessions of this project. The students were encouraged to point to yes/no responses to demonstrate to the observers that they were reliably and effectively using their newly acquired technique. Students A and M also continued with enrichment activities. Student A was encouraged to spell names, colors and other familiar words to answer simple questions.

Student M was demonstrating remarkable literacy skills in her daily enrichment activities. This student worked on answering questions using sentences and simple conversation. This student also read stories and newspaper articles and answered comprehension type questions. Addition, subtraction and multiplication was also included in these activities. Informal educational assessment was also begun at this time.

During the final three weeks of the project, the parents of students A, M and Z observed the classroom activities. These parents were individually instructed on the use of the facilitation technique by both this

teacher and the speech therapist. Communication boards were provided and the parents were given activities to conduct and encouraged to use facilitation at home. Parents were asked to report successes.

Additionally, throughout the 12 weeks of implementation, other activities developed by this teacher were incorporated during art, music and leisure time to reinforce pointing and choice making. These activities included finger pointing to a variety of textures, pictures in books, body parts and choices of food or drink. Other activities to improve pointing skills involved poking holes in clay, using one finger with keyboard or push-button type toys and pushing holes in dirt to plant seeds.

Timeline

Week 1	Positioning and equipment set up according to students' physical disabilities. Exercises introduced and Facilitated Communication explained to the students.

Week 2	Exercises.
(Two sessions)	Students point to familiar objects. "Point to the . . . "
Weeks 3-4	Exercises.
(Four sessions)	Students point to named picture when presented with a choice of two pictures. During regular vision therapy sessions, vision therapist worked with Student A to further develop pointing skills.
Week 5	Exercises.
(Two sessions)	Introduction of individual communication boards with yes/no words. Students A, M, D and Z point to yes/no words when shown familiar objects. "Is this a . . . ?" Student L pointed to pictures. Vision therapist continued to work with Student A.

Weeks 6-8	Exercises.
(Six sessions)	Pointing to yes/no when shown pictures of familiar objects. "Is this a . . . ?"
	Student L absent as of week six.
	Student D absent as of week seven.
	Vision therapist continued work with Student A.
Weeks 9-10	Exercises.
(Four sessions)	Pointing to yes/no when presented with assorted "action" or "simple judgement" pictures. "Is the boy running? . . . happy?"
	Student A participated in enrichment activities and continued work with the vision therapist.
	Student M began daily enrichment activities.
	Student L returned and continued to point to pictures.
	Student D remained absent.

Weeks 11-12	Exercises.
(Four sessions)	Students point to yes/no when asked word questions. "Is your name . . . ?"
	Students A and M continued with enrichment activities.
	Student A also continued work with the vision therapist.
	Student L pointed to pictures.
	Student D returned and continued with yes/no responses to identify pictures.
	During final three sessions, students reviewed picture identification and answered word questions during activities observed by trained observers to document generalization of pointing skills.
	Additionally, parents of students A, M and Z observed and were introduced to facilitation techniques. These parents were given communication boards for use at home.

Post-Implementation	Evaluation of objectives. Final Review and analysis of weekly student data logs.

Student response data were collected during each session and recorded on individual data collection forms (Appendix D:65) for each student. Brief comments concerning each student's participation or behavior was also recorded on these forms. Progress was monitored by ongoing teacher observation at each activity. To further assist with observation and monitoring, a weekly log was also kept on each student. Any changes or modifications deemed needed were incorporated weekly based on analysis of observations. Remediation for students showing no or poor progress and/or enrichment activities for students needing further challenge were also incorporated as necessary. Weekly activities were also occasionally videotaped to further assist with ongoing observation and to aid this teacher and the facilitators in determining potential modifications for improvement of the facilitation technique. Other teachers were also encouraged to observe the activities conducted throughout the project. Interested

colleagues observed and commented on the technique specifics and the progress of the students participating in the project. Three of these teachers began similar activities with other students at this Exceptional Student Center during project implementation. Teachers met frequently to discuss the technique of Facilitated Communication, develop activities and share experiences and ideas. Final evaluation tasks were conducted following the 12-week implementation period to determine if the project objectives had been met.

CHAPTER IV

Results

Evaluation of student progress was conducted throughout the project by teacher observation and review and analysis of individual student weekly data logs. Additionally, data taken of correct student responses during each session were evaluated at the end of the 12-week implementation. The total number of correct responses recorded during the last 10 sessions was tabulated to determine mastery of the objective. Correct and accurate yes/no responses in a minimum of four of five trials or 80 percent of the questions asked in each of these sessions indicated that the student mastered the communication objective. Consistency of correct responses was also measured to assure that the percentage of correct answers was sustained during the last 10 sessions.

During the final three sessions, the second objective of demonstrating generalization of the newly acquired skill was evaluated. Three trained observers rated the students' correct responses during these sessions. This objective was considered mastered

if, in the judgement of the three observers, four of the five students clearly and consistently indicated a correct yes/no response.

Results of the data collection showed that four of the five students mastered the first objective of correctly and accurately indicating yes/no responses. Specifically, two of the students showed consistent mastery of this skill at 100 percent during the last four sessions of this project. A third displayed 100 percent consistent mastery during the final six sessions. One of the five students was hospitalized for hip surgery and did not complete all of the activities. This student did, however, master the objective and was consistently and accurately pointing to yes/no when presented with pictures during the last 10 sessions of actual attendance.

The correct responses made during the last 10 sessions attended by each of the five students is summarized in Table 1:42. The number of questions asked of each student during a particular session varied from a minimum of five to usually no more than 10, depending on time available for each student and/or the amount of fatigue exhibited. For students A, M and Z data are

tabulated for weeks eight through 12 inclusive. The data tabulated for student D reflect the sessions attended in weeks four through six and weeks 11 and 12. Likewise, for student L, data are tabulated for week five and weeks nine through 12. Columnar figures represent the number of correct yes/no responses per the total number of questions asked in a session.

Table 1

Correct Yes/No Responses

Session Number	Student A	D	M	L	Z
1	5/5	4/4	8/10	1/5	4/5
2	5/7	4/5	9/10	2/5	4/5
3	4/5	4/5	9/10	4/5	5/5
4	4/5	5/5	9/10	1/5	4/5
5	4/5	5/6	10/10	2/5	4/5
6	4/5	5/5	10/10	2/5	4/5
7	6/6	4/5	10/10	5/8	5/5
8	5/5	4/5	10/10	3/5	5/5
9	5/5	4/5	10/10	3/5	6/6
10	6/6	5/5	10/10	3/5	6/6
Raw Score (Percent)	48/54 (88.9)	44/50 (88.0)	95/100 (95.0)	26/53 (49.0)	47/52 (90.4)

Student L did not master either of the objectives. This student underwent neurosurgery during the sixth week

of project implementation, missed three weeks and did not appear to be fully "back to normal" upon return to school in week nine. This student's progress was also hindered by increasing seizure activity. Overall, however, some progress was made towards correctly pointing to pictures. Exercises and activities developed to reduce tactile defensiveness were showing some positive results towards the latter weeks of the project. During the last two weeks of implementation, this student was more willing to participate in the activities and accept the touch of the facilitator.

The second objective of demonstrating generalization of the newly acquired skill was met and validated by three trained observers during the final three sessions. These observers consisted of a special education teacher, a speech pathologist and an occupational therapist. All had been previously trained in the use of Facilitated Communication and had attended numerous workshops, seminars and in-service training sessions on this subject. During the last three sessions, the observers were instructed to watch and record data independently as each student was tasked to point to yes/no when presented with a picture or asked a question. Credit for a correct

yes/no response was given only if the student answered correctly and accurately pointed to the chosen response. An incorrect answer and/or inaccurate pointing received no credit. Data in Table 1:42 for these three sessions reflect the compilation of data recorded independently by these three trained observers. All four of the students (A, D, M and Z) showed the observers consistent and clear yes/no responses when presented with pictures. In addition, students A, M and Z clearly and consistently answered yes/no when asked questions.

To further substantiate generalization of the skill, parental input of students A, M and Z was also evaluated. All three sets of parents expressed positive results in utilizing the new skill. The three students immediately started indicating yes/no choices with the communication boards at home and in other community settings.

Student A chose snack items and her parents reported that she chose a specific new clothing outfit while at a shopping mall. The mother also reported that she learned that this child does not like to wear the color pink. The mother had previously been dressing the child mostly in pink and had no way of knowing the child's dislike for this color prior to Facilitated Communication!

Student Z was also making choices at home and at restaurants. This child routinely made choices of food and drink items. Additionally, the parents reported that the child had begun choosing specific television programs for family viewing.

Similar results were reported from the mother of student M. This student's mother received additional training and was facilitating at home daily with the use of the Letter Board (Appendix C:63). The mother reported constantly about how happy she was to finally get to know her daughter and to actually have the means to have two-way communications with this child.

Results of the enrichment activities conducted beginning in week nine with students A and M were most encouraging and somewhat unexpected. Both students displayed literacy skills that this teacher had never anticipated of children classified as Severely/Mentally Handicapped with standardized intelligence test scores showing an I.Q. below 10.

Student A consistently and correctly identified color words, names and other common words by pointing to word cards. During the last two weeks of implementation this student was pointing to letters on the Letter Board

to spell names and words when presented with pictures. This student continued to work slowly as the physical act of pointing was very difficult. The determination this student displayed to complete the task and the obvious progress made thus far is very encouraging.

Results of the daily enrichment activities conducted with student M were more than amazing. This student exhibited extremely high literacy skills and it was quite difficult to develop activities that challenged this student's potential. When given the primary level book, In the Wild, to read, this student responded on the Letter Board and spelled out "TOO EASY". During the last two weeks of implementation this student was reading stories from the fifth grade reader, Bold Dreams, and correctly answering comprehension questions. Both of these books from the Macmillan series were used in this school district's first and fifth grade curriculums respectively.

This student was also correctly completing mathematical computations at a fourth grade level. Attempts were made to establish student M's academic level but available tests were difficult to adapt to this student's communication technique. Time passed too

quickly. Student M reacted negatively during testing and in any activities perceived as purely academic. It became clear to this teacher that this child realized that she was finally able to express herself and communicate many of the thoughts that had been trapped for 11 years. As student M so aptly stated: "I JUST WANT TO CHAT". This statement indicated to this teacher that this student had established definite priorities for the use of these communication skills. This child's primary goal was to communicate her thoughts and feelings to others. Academics were not a top priority. Most amazing was the child's ability to express herself as any other 11 year old. The student correctly spelled the names of everyone met, asked and answered simple questions and effected meaningful conversation with anyone who would talk to her.

Several techniques were employed to further insure that the words spelled were, in fact, those of the student and not the facilitators. On three occasions the facilitator was blindfolded while the student spelled answers to questions. During several other occasions, the facilitator wore radio earphones and listened to music to prevent hearing the questions asked of the

student. Additionally, student M was taken out of the classroom and away from the facilitator to participate in activities unknown to the facilitator. Student M was then asked to relay information about the activity upon returning to the classroom. In every instance, responses were correct and pointing was accurate. This student readily accepted the hand of several facilitators and achieved similar results with all, further substantiating this student's skill. Dialogue samples have been included in this report for the reader's information (Attachment 1:69).

The school district Supervisor of Mentally Handicapped Programs observed student M working with the Letter Board (Appendix C:63) during week 12. In dialogue directed to this official, student M revealed true inner feelings and an apparent frustration by emphatically pointing to this communication board and spelling the phrase: "METAL HANDICAPPED NOT ME"!

CHAPTER V

Recommendations

After completion of the project, this teacher plans to continue to use the technique of Facilitated Communication in further activities in the classroom to improve communication skills. The five students comprising the target group for this project will continue to use the communication boards to make choices throughout the school day. Future, more challenging communication activities will include pointing to words or letters to improve expressive language skills. Activities to improve pointing skills will also be incorporated in the daily curriculum. The students will also use the actual computers and weekly sessions will take place in the computer laboratory.

The parents of the students will continue to be shown ways to use the technique. This teacher will encourage the parents to use the communication boards at home to further improve the students' communication skills and provide more opportunities to use this method in naturalistic settings. This teacher will be available to assist the parents and provide suitable

activities to be used in the home environment.

Results of this project will also be shared with the members of the Curriculum Committee for the Profoundly Handicapped (CPH) and other interested teachers and professional personnel. This teacher will provide additional training to the CPH membership who will then be able to offer assistance to other teachers at the Center who may be interested in implementing a program utilizing Facilitated Communication. Interested teacher aides will also be trained in the techniques used in facilitation. These aides will then serve as facilitators for the students during classroom activities.

The videotape (Attachment II:74), developed during this project to demonstrate the technique of Facilitated Communication, will be shared with others at the Center, parents and other care-givers with parent permission. Future plans include sharing the results of this project as well as the videotape with county level education administrators and other professionals associated with educating the non-verbal student throughout the county.

This teacher and the membership of the CPH plan to

attend future workshops and training sessions to learn more about Facilitated Communication. The CPH will continue to review new literature and assist each other in implementation of new programs.

The unanticipated literacy skills exhibited by student M during this project dictates further study. This teacher plans to pursue further testing and has already recommended this student for complete re-evaluation. The diagnostic process will be lengthy and slow as this student will be using the technique of Facilitated Communication to demonstrate to others her capabilities and potential for learning. This teacher plans to do whatever it takes to ensure that this student has the opportunity to prove to others that she is indeed literate and capable of learning. It is hoped that an appropriate educational plan and suitable placement for this child will be implemented quickly.

The implications of a non-verbal, multiply handicapped student being able to communicate through Facilitated Communication has an impact far beyond the scope of this practicum project. A task force needs to be created to study the feasibility of incorporating this technique in the curriculum for the non-verbal

student. Additionally, there is a need for in-service training to be made available to teachers, therapists, administrators and others interested in the technique. There is also a need to train individuals to act as facilitators so that students can communicate and participate more fully in every aspect of their daily life. Facilitated Communication has opened a door for some of the non-verbal individuals to truly integrate with society. The door will close quickly however, if facilitators are unavailable to help these students point on a computer board.

There are still many skeptics and non-believers within the special education community. Hopefully, future projects such as this one will prove that Facilitated Communication has come of age as a viable tool to be used with the non-verbal student.

This teacher implemented this project simply to improve yes/no response ability in five non-verbal S/PMH students. However, it soon became clear that three of the students were showing unexpected literacy skills and the real challenge quickly became one of finding appropriate activities to challenge these students. This teacher recommends that anyone

interested in implementation of a similar program be flexible and keenly aware of the student's pace. Also, a program of Facilitated Communication is very time consuming as teachers and facilitators must work slowly with the student and be willing to provide excessive one-to-one attention. It is absolutely essential for the teacher to seek and obtain as much resource help as possible. These children are considered exceptional students by the education community. Accordingly, exceptional teaching methods and practices must be employed. Assistance from therapists, aides, other teachers and volunteers should all be made available to the teacher conducting a program of Facilitated Communication. Use of Facilitated Communication may require a relatively large investment of time and personnel resources, but this is an investment with very little risk and one that could yield a very high rate of return.

It is envisioned that this project is but the beginning of a real breakthrough in achieving a viable means by which many non-verbal individuals may express themselves and become active participants in society. After all, it is the students' ability or inability to

communicate that has categorized them as "Severely and Profoundly Mentally Handicapped." There may be many intellectually abled individuals labeled as mentally handicapped because educators have been unable to find the tool to unlock their capabilities. How many other non-verbal individuals may also be trying to say: "METAL HANDICAPPED NOT ME"?

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Appendices

Appendix A

Parent Consent Form

Appendix A

Parent Consent Form

Dear Parents,

This letter is to request permission for your child to participate in a research project. This project is being conducted by Margaret Barabash, classroom teacher and candidate for the Master of Science degree at Nova University. The researcher can be reached at 813-744-8008.

This project is a program to help students improve communication skills. The students will be involved in bi-weekly group activities, continuing approximately 12 weeks, to improve their individual ability to make accurate yes/no responses. Specifically, permission is being asked so that data obtained, including any videotaping, can be used, in part, to fulfill the requirements for the Master of Science program at Nova University. Student names will be kept confidential in any material that may be published.

Thank you for your support.

Sincerely,

Margaret Barabash

. . . . . .

I hereby give my permission for _____ _____ to participate in a group project to improve communication skills conducted by classroom teacher, Margaret Barabash.

Signed:_____

Relationship to Child:_____

Appendix B

Yes/No Board

Appendix B

Yes/No Board

NO	STOP
YES	DON'T KNOW

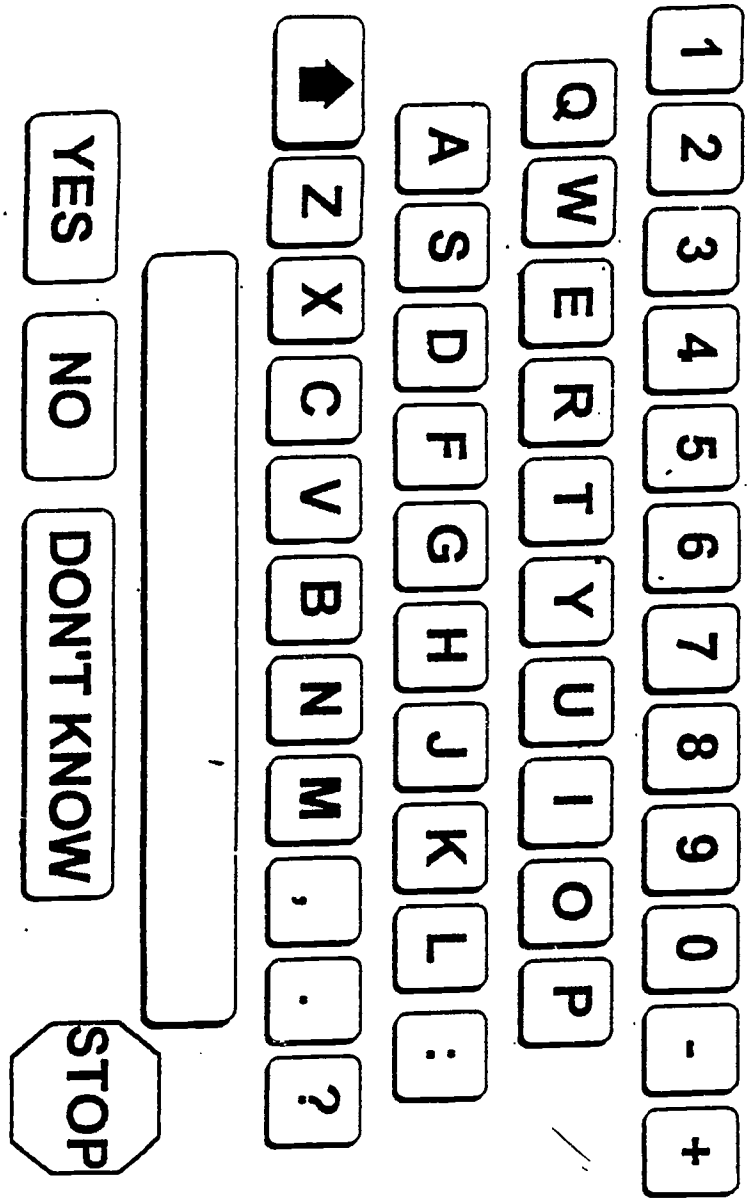
Adapted from Rosemary Crossley, DEAL Communication Center

Appendix C

Letter Board

Appendix C

Letter Board



Adapted from Rosemary Crossley, DEAL Communication Center

Appendix D

Yes/No Response Data Form

Appendix D

Yes/No Response Data Collection Form

Student:

Positioning:

Session Number	Activity	Response Data "+" = Correct	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Appendix D (continued)

Student:

Session Number	Activity	Response Data "+" = Correct	Comments
17			
18			
19			
20			
21			
22			

Summary/Additional Observations/Notes:

Attachments

Attachment I

A Sampling of Dialogue

Attachment I

A Sampling of Dialogue

The following represents some of the short dialogues with student M during enrichment activities and/or during other daily school events. The reader is reminded that this student, an S/PMH Cerebral Palsied non-verbal 11 year old with a documented I.Q. of below 10, conversed only by pointing to letters on a communication board through the use of Facilitated Communication.

When asked to tell others about herself:
HI THERE MY NAME IS MICHELLE
I AM NOT HAPPY BECAUSE I CANT TALK

Why are you crying?
I FEEL DEPRESSED
Why?
I DONT LIKE THE BOYFRIEND
Why not?
HE BEATS MY MOM HE GETS DRUNK
What else does he do?
HE CALLS ME NAMES

When acting fussy during a school program:

What's wrong?
I CANT SEE

When fussing after being placed in her wheelchair:

What's wrong?
THE BELT IS TOO TIGHT

A subtle sense of humor:
On meeting an overweight person:
WHEN IS YOUR BABY COMING

Seeing someone with hair different from the previous day:
WHO IS YOUR HAIRDRESSER

When asked who would she like to be:
WINNIE THE POOH

How did you learn to read and spell?
BY TV

When asked what she did this past weekend:
WE WENT TO VERO BEACH
WATCHED BAD NEWS BEARS
WENT TO MIAMI BEACH
WENT TO DATONA BEACH
MOP THE FLOOR
WENT TO VFW
Your mom says you didn't go anywhere or do anything.
Do you know the difference between a lie and the truth?
YES
Then why do you lie?
I LIKE TO TALK

What did you have for dinner? (asked on various days)
GRITS
GRITS BACON
CHICKEM
BROILED VENISYN Who cooked? THE BOYFRIEND
BEANS What kind? REFRIED

Why were you absent?
I HAD THE FLU
THE BABY HAD THE FLU
WE WENT TO THE DOCTOR
What is the doctor's name?
WANG (Huang)

Did he give you medicine?
YES

When asked to ask the teacher a question:
WHERE DO YOU LIVE
CAN I COME TO YOUR HOUSE

Yes you can, but what will we do?
VISIT

What else can we do?
EAT GRITS

I don't like grits, can I make something else?
YES RED VELVET CAKE

Can your baby sister come with you to my house?
NO SHE IS TO YUKY

Why do you always laugh at me?
BECAUSE YOU ARE A FUNNY TEACHER

On a day when she seemed unhappy:

Why are you acting so sad?
I FEEL REBJECTED
What's the matter?
I HATE BEING HANDICAPPED
What do you want to be able to do?
I WANT TO BE VERBAL
What would you do if you were verbal?
TEACH HANDICAPPED KIDS HOW TO TALK
How would you do that?
BY THE COMPUTER BOARD
Would you teach Amanda?
YES
Would you teach Lori?
NO
Why not?
SHE IS TO STUPID

Other samples of listening, analyzing and remembering what others say (i.e. eavesdropping):

Where is Verna from?	MICHIGAN
Sandra?	PLANT CITY
Your teacher?	NEWPORT
The Coach?	NEW YORK
The music teacher?	LAKE WALES
Arlene?	HONG KONG

What is Verna's husband's name?	JIM
Sandra's?	ED
Mine?	JAY

What is the speech teacher's son's name? BRANDON

Who is the Governor? CHILES
Where is the state capital? TALLAHASEE
Who is President? BILL CLINTON

All of the above responses were correct and most were spelled correctly too. All responses were as a result of her ability to read or listen and remember. Additionally, this student demonstrated the ability to read and answer "who, what where, when and why" questions from newspaper and magazine articles and from a fifth grade reader. She was able to create and tell a simple story when shown a picture.

This student, though never previously formally instructed in the rudiments of arithmetic, displayed the ability to perform simple addition, subtraction and multiplication with a deck of 50 flash cards at a 100 percent accuracy level. She added sets of five numbers; knew multiplication facts through the 10 times tables; correctly identified coins and made proper change from a dollar by pointing; and correctly answered simple word problems.

Attachment II

Videotape

(A VHS videotape, approximately 40 minutes in duration, entitled "Demonstrating Facilitated Communication with Cerebral Palsied Students", has been included with this report to visibly demonstrate to the reader the technique of Facilitated Communication.)