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The Effects of Partner Training on Request Behaviors with an AAC User

Amy J. Fiala

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The Effects of Partner Training on Request Behaviors with an AAC User

BY

Amy J. Fiala

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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CHARLESTON, ILLINOIS

1993

YEAR

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING THIS PART OF THE GRADUATE DEGREE CITED ABOVE

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DATE

5-11-93

DATE
THESIS COMMITTEE MEMBERS

Charlotte A. Wasson, M.S.
Assistant Professor
Communication Disorders & Sciences
Eastern Illinois University

Rebecca Trammel, M.S.
Assistant Professor
Communication Disorders & Sciences
Eastern Illinois University

Richard Jacques, Ph.D.
Professor
Communication Disorders & Sciences
Eastern Illinois University

5/11/93
Date

5/10/93
Date

5/10/93
Date
ABSTRACT

This study was conducted to examine the effects of partner training on request behaviors with an AAC user. A review of literature indicated that AAC users are often placed in respondent roles rather than initiator roles. Additionally, speaking individuals tend to dominate conversations over individuals who are nonspeaking. Such domination puts AAC users at risk for a loss of independence in communication of the basic communication interactions. Thus, inadequate social interaction skills are a common problem among AAC users. Utilizing communication partner training as an intervention target may serve to increase active participation in all areas of communication. The purpose of the study was to determine the effects of request training vs request training plus partner training on voice output request behaviors with a six year old male subject with cerebral palsy.

A single-subject research design using multiple baselines with alternating treatment (ABAC) was used to train a six year old boy with cerebral palsy to increase request behaviors utilizing a viable communication partner. This communicative intent was
trained using specific treatment plans and highly motivating "drink" and "snack". Data was collected, plotted, and compared to determine the effects of Treatment 1 and Treatment 2.

Interjudge reliability was assessed to be 95% and 100%, respectively. Results of the study indicate that training partners to elicit request functions impacts on the number of requests used by an individual who is functionally nonspeaking.

Implications toward future research are discussed. These include the utilization of various partners to give the AAC user an opportunity to communicate in diverse situations to broaden the range of functions achieved. Future related studies should improve validity by eliminating the extraneous variables identified in this study.
DEDICATION

This study is dedicated to all of the people who have aided in my personal and professional growth throughout my education and life.

First, I dedicate this study to my subject, Scott, for his cooperation, willingness, and enthusiastic personality which has touched my heart deeply and made this study possible.

To Richard Mancuso, for his expertise in computers which has served to make me "computer literate". He has never failed to support and encourage everything I do and is a constant source of inspiration. The positive attitude he has displayed toward my abilities to succeed in this field has carried me through all of the difficult times of graduate school and my thesis.

To my family, I dedicate this study for providing me with the encouragement, support, and opportunity to begin and extend my education. Without them, their hard work, and financial support, it would not have been possible for my education or this study to be completed.
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I would like to extend my sincere appreciation to the many individuals who have provided assistance, support, and encouragement in the completion of this study.

I am sincerely grateful to Mrs. Wasson, my thesis advisor, for her cooperation, ideas, and immeasurable knowledge base in the area of augmentative and alternative communication. She stimulated my original interest and desire to understand and provide services to functionally nonspeaking individuals through the use of augmentative and alternative communication devices.

I wish to thank my thesis committee members Dr. Richard Jacques and Mrs. Rebecca Trammel for their constant source of support. Thanks to their time and input, I have gained valuable insights into the procedures and results of this study. I would like to extend my gratitude to Mrs. Trammel for her constant encouragement and positive attitude when I, at times, became overwhelmed.

Additionally, I would like to acknowledge the parents of my subject and Funkhouser Preschool staff for allowing him to participate in this study. Without
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Finally, I would like to recognize the faculty members of the Department of Communication Disorders and Sciences at Eastern Illinois University for all of their support toward students' projects and willingness to "go the extra mile" in order to provide positive learning experiences.
TABLE OF CONTENTS

PAGE

ABSTRACT ............................................. i
DEDICATION ........................................... iii
ACKNOWLEDGEMENTS ................................. iv
TABLE OF CONTENTS ................................. vi
LIST OF APPENDICES ................................. viii

CHAPTER 1. INTRODUCTION

Historical overview of augmentative and alternative communication technology ............................................. 1
Research question ....................................... 7

CHAPTER 2. REVIEW OF LITERATURE

Augmentative and alternative communication technology ................................................................. 8
Review of IntroTalker ..................................... 9
Review of Light/Touch Talker ............................ 10
Review of Liberator ...................................... 12
AAC Strategies .......................................... 13
AAC Partner Training .................................... 19
Conclusions .............................................. 20

CHAPTER 3. METHODS

Subject description ...................................... 23
Equipment .................................................. 25
Setting ...................................................... 26
Design ...................................................... 27
Treatment
Treatment 1 ................................................ 30
Treatment 2 ................................................ 31
Data Collection, Reliability Checks and Data Analysis ................................................................. 33

CHAPTER 4. RESULTS

Purpose ..................................................... 34
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1</td>
<td>35</td>
</tr>
<tr>
<td>Treatment 2</td>
<td>37</td>
</tr>
<tr>
<td>CHAPTER 5. DISCUSSION</td>
<td></td>
</tr>
<tr>
<td>Overview</td>
<td>42</td>
</tr>
<tr>
<td>Treatment 1</td>
<td>43</td>
</tr>
<tr>
<td>Treatment 2</td>
<td>44</td>
</tr>
<tr>
<td>Overall Summary</td>
<td>45</td>
</tr>
<tr>
<td>Implications of research</td>
<td>46</td>
</tr>
<tr>
<td>Limitations of research</td>
<td>48</td>
</tr>
<tr>
<td>Implications for future research</td>
<td>51</td>
</tr>
<tr>
<td>Summary and conclusions</td>
<td>53</td>
</tr>
<tr>
<td>LIST OF REFERENCES</td>
<td>52</td>
</tr>
<tr>
<td>FIGURE 1</td>
<td>58</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>59</td>
</tr>
<tr>
<td>A Parental permission</td>
<td>60</td>
</tr>
<tr>
<td>B Speech-Language Pathologist permission</td>
<td>61</td>
</tr>
<tr>
<td>C Partner permission</td>
<td>62</td>
</tr>
<tr>
<td>D Administrator permission</td>
<td>63</td>
</tr>
<tr>
<td>E Letter to Human Resource Board</td>
<td>64</td>
</tr>
<tr>
<td>F Memorandum</td>
<td>66</td>
</tr>
<tr>
<td>G SD's overlay</td>
<td>67</td>
</tr>
<tr>
<td>H Treatment 1</td>
<td>68</td>
</tr>
<tr>
<td>I Treatment 2</td>
<td>69</td>
</tr>
<tr>
<td>J Data collection tally</td>
<td>70</td>
</tr>
<tr>
<td>K Schedule for Treatment 1 &amp; 2</td>
<td>71</td>
</tr>
<tr>
<td>L Types of requests</td>
<td>72</td>
</tr>
</tbody>
</table>
## LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Parental permission</td>
<td>60</td>
</tr>
<tr>
<td>B</td>
<td>Speech-Language Pathologist permission</td>
<td>61</td>
</tr>
<tr>
<td>C</td>
<td>Partner permission</td>
<td>62</td>
</tr>
<tr>
<td>D</td>
<td>Administrator permission</td>
<td>63</td>
</tr>
<tr>
<td>E</td>
<td>Letter to Human Resource Board</td>
<td>64</td>
</tr>
<tr>
<td>F</td>
<td>Memorandum</td>
<td>66</td>
</tr>
<tr>
<td>G</td>
<td>SD's overlay</td>
<td>67</td>
</tr>
<tr>
<td>H</td>
<td>Treatment 1.</td>
<td>68</td>
</tr>
<tr>
<td>I</td>
<td>Treatment 2.</td>
<td>69</td>
</tr>
<tr>
<td>J</td>
<td>Data collection tally</td>
<td>70</td>
</tr>
<tr>
<td>K</td>
<td>Schedule for Treatment 1 &amp; 2</td>
<td>71</td>
</tr>
<tr>
<td>L</td>
<td>Types of Requests</td>
<td>72</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

Communication is a process that is often taken for granted, and is believed to be achieved only through vocalizations. Actually, communication can be a single word with multiple meanings, encompassing a variety of modes which are used to both send and receive messages. This process of communication is not only achieved through vocalizations, but also through writing, gesturing, and bodily expression (Blackstone, 1986). A number of years ago, behaviors such as eye gaze, smiles and differential vocalizations were the only modes by which individuals with severe communication disorders were able to express their needs and/or wants when speech was nonfunctional. Historically, individuals with severe communication deficits were either placed in remedial programs designed to elicit speech as a primary mode, or were dismissed or denied remediation when functional speech acquisition was not possible (Silverman, 1989). Gradually, various low technology modes of communication were developed; these included items such as communication books and boards. The field of augmentative and alternative communication
(AAC) had thus emerged. Even with access to these low technologies, it was still extremely difficult for individuals with severe disorders to communicate effectively in our primarily speaking world. It was not until the early 70's that these low technology techniques became supplemented by the development of voice output communication aids (VOCA's). These VOCA's have changed the lives of individuals with severe communication impairments and brought them closer to the speaking world as we know it.

Vanderheiden & Yoder (1986) define augmentative communication as "the use of aids or techniques that supplement existing vocal or verbal communication skills," and alternative communication as "the communication method used by a person without any vocal ability" (Vanderheiden & Yoder, 1986, p. 1). Aids, devices, and techniques (i.e., AAC) are by no means meant to replace speech, but rather "augment" an individual's ability to be functionally communicative. Nonverbal behaviors are encouraged to be used concurrently with the voice output high technology devices. While no communication device can serve the needs of all people with severe communication
disorders, VOCA's have and will continue to be beneficial for thousands who are communicatively impaired. There are a variety of VOCA's currently available, developed by many companies (Cama, 1992). A well known, advanced device (the Liberator, Prentke Romich Co., 1992) was used in the execution of this research project.

Acquisition of a high technology voice output communication aid (VOCA) does not solve severe communication problems. Multimodal intervention is essential (Reichle & Sigafoos, 1991). Intervention must "utilize the individual's full communication capabilities, including any residual speech or vocalizations, gestures, signs, and aided communication" (ASHA, 1991, p. 10). According to Vanderheiden and Lloyd (1986) "...the communication system for a disabled individual... should not consist of a single technique or aid, but rather a collection of techniques, aids, symbols and strategies that the individual can use interchangeably" (Vanderheiden & Lloyd, 1986, p. 2). These four components: symbol, aid, strategy, and technique must be understood and fully exploited because they are the necessary elements
that comprise all AAC interventions (Beukelman & Mirenda, 1992). Effective intervention may help those with severe communication disorders to meet their multiple communication needs. Strategies and techniques may teach skills that will allow request and statement functions to emerge. This will allow successful interactions with family members, peers and people in the community (Reichle et al., 1991).

Through various intervention strategies a number of functions of communication can and should be shaped. These functions may include communicating needs/wants, transferring information, developing social closeness, and/or establishing social etiquette (Light, 1988). Although these functions are necessary, the most basic goal of intervention, according to Blackstone (1986), is to simply improve daily functional communication and interaction. One of the most fundamental functions is that of requesting. Through requests an individual can "regulate the behavior of the listener toward an action-oriented response" (Beukelman & Mirenda, 1992, p. 7). Requesting allows an individual to indicate an object or activity preference and is an avenue through which this object or activity may be obtained. In
short, requests permit an individual to exercise control over the environment (Reichle et. al., 1991). Cipani (1989) believes that a child who is unable to make a request independently is unable to sustain interaction with others. Because of the critical nature requests play in total communicative competence, AAC intervention often attempts to build request behavior skills. A way to further facilitate request behavior intervention is through communication partner training. Partner training prepares individuals to interact with individuals who use AAC aids and techniques.

Partners, whether they be caregivers, peers, teachers, or facilitators, have an influence on all communicators. However, according to Blackstone (1986), partners have a more pervasive and stronger influence on individuals who are AAC users. Since AAC users have an imbalance between communicating through device use and through natural speech, interaction success may be achieved through both the partner and the AAC user. Training a partner to interact with an AAC user serves to "increase a user's opportunities for interaction and active participation in social,
educational, recreational, and vocational activities" (Blackstone, 1992, p. 1). Partner training has emerged as a key component of most current AAC intervention (Yorkston, 1992).

**Design**

A viable way to study intervention effectiveness is through use of a single subject research design using multiple baselines with alternating treatments. Single subject research has increasingly gained respect in the research arena. Researchers employing this approach are able to answer questions while providing clinical services at the same time (Hegde, 1987). Single subject designs compare a single individual under different conditions (e.g., treatment vs no treatment) and help examine a cause-effect relationship. A single subject design assists clinical researchers in being ethically responsible since treatment is not denied to a control group that needs such treatment (Hegde, 1987). Moreover, by using multiple baselines with alternating treatment, the researcher is able to compare the effects of two or more treatments on one behavior (Barlow & Hayes, 1979). The strength of this design can assess the independent
and relative effects of two treatments (Hegde, 1987).

The development of the field of AAC has lead to the evolution of various voice output devices to allow speech opportunities to individuals who are functionally nonspeaking. Without intervention, these individuals may fail to utilize critical communication functions as mentioned previously. Of all functions, that of requesting may be viewed as that which allows most control over one's environment. Request behavior training is, thus, a valid intervention target. It is hypothesized that training communication partners to elicit these request functions would further impact on the number of requests used by an individual who is functionally nonspeaking. A single subject research design is an appropriate research design to study the request behavior phenomenon. Therefore, the present study was designed to examine the effects of request training vs request training plus partner training on voice output request behaviors of a six-year-old male subject with cerebral palsy.
CHAPTER 2
LITERATURE REVIEW

Based on a total population of 247.1 million people, .08% of the United States' population is functionally nonspeaking (Hoffman, 1990). The development of augmentative and alternative communication (AAC) has opened doors for the approximately 2 million Americans who are unable to speak adequately to meet their communication needs (ASHA, 1991). AAC's emergence as a specific field within speech-language pathology has centered on the development of techniques, aids, symbols and strategies to meet the multiple communicative needs of this nonspeaking population. This literature review will begin with an overview of the development of technology in AAC (i.e., aids, techniques, and symbols) and will proceed into pertinent strategy procedures, including those related to this study on the teaching of request behaviors and partner training.

Augmentative and Alternative Communication Technology

Initial AAC efforts related to application of "no technology" devices. Such devices included alphabet boards, picture boards, communication books,
communication necklaces, as well as other communication displays (Beukelman & Mirenda, 1992; Silverman, 1989; Vanderheiden & Lloyd, 1986). However, these "no technology" devices offered only visual message output, thus, putting the user at an apparent disadvantage in a speaking world. In about 1979, AAC witnessed the development of early voice output systems. A number of companies interested in meeting the speaking needs of individuals with no functional speech began marketing voice output devices which were more similar than dissimilar. Since this study employs a device developed and marketed by the Prentke Romich Company (PRC, 1992), progression of development of voice output technology will be demonstrated by a review of PRC products.

The IntroTalker, PRC's entry level voice output device uses digitized Speech Synthesis Technology (i.e., it records real human voice). It is a battery operated device that employs Minspeak (i.e., a symbol system which allows icons and icon sequences to represent multiple ideas). The technique by which stored messages can be retrieved is either through direct touch to the icon location or by use of a switch
to control a row-column scan. However, this particular device set-up provides minimal assistance to the user because of its limited vocabulary and its limited memory. It is considered to be an entry level device for device introduction, or for use by individuals with limited message needs. The keyboard can be divided into an 8 square, 16 square, or 32 square location display placed under a keyguard containing icons which are usually picture-based. Icon sequences are limited to a maximum of three icons per sequence. For example, access of the "sun" icon alone might result in a voice output of "I’m hot." Combining "sun" and "apple" as a two-icon sequence could result in "I like hot food," and "sun" plus "apple" plus "car" might result in voice output of "You can order hot food to go." A memory of one to two minutes of speech is available, but a memory expansion chip can be purchased which will expand memory to six minutes. The device, thus, would certainly not meet all the communication needs of most individuals who are nonspeaking. Therefore, PRC also developed the Light/Touch Talker.

The battery operated Light/Touch Talker, developed in 1984, with Minspeak or Express, offers many
sophisticated features not available on the IntroTalker. A 128-position overlay can be directly accessed on the Touch Talker; the Light Talker can also be directly accessed via a light beam optical headpointer, or can work off of a number of scanning techniques. Various software packages have been developed which meet the age and cognitive level needs of nearly any individual. These packages were designed to reduce the amount of time needed to program messages. It should also be noted that custom messages can be stored even when software packages are in use. One icon may represent an entire message for a user who is low-functioning or more elaborate pictures and sequences for a user who is higher-functioning. Voice output messages can be relayed by Echo speech, SmootherTalker speech, and/or DECTalk speech. Echo speech was the first synthetic speech used with Light/Touch Talkers and, though it did offer various speech output, the output was robotic-sounding. SmootherTalker speech offered a "noticeable improvement in speech quality as compared to Echo" (Prentke Romich Co., 1992, p. 7). Recently, DECTalk speech for Light/Touch Talker represented a further speech up-
grade.

The Light/Touch Talker devices are an improvement over the IntroTalker because individuals have access to higher technology. For example, various device adaptations allow individuals to generate both speech and text (i.e., through interface with a standard computer). Execution by direct selection, row-column scanning, directed scanning, and Morse Code make education, vocational training and employment possible (Prentke Romich Co., 1992). These two devices fast became an augmentative and alternative communication (AAC) device standards for the 80's, but they will most likely decrease in use in the 90's, and perhaps even be replaced by the newest and highest technological device, the Liberator.

The Liberator is PRC's device which became available in 1991. It includes Minspeak, a memory system of 512K, DECTalk speech (i.e., ten gender and age voice choices) and added hardware and software programs to better suit the needs of individuals who are communication impaired. Liberator features, not included on either the IntroTalker or Light/Touch Talker, include notebooks, scratch pad, calculator
functions, and editing features. The device is unique to the Light/Touch Talker in its installation of icon prediction. Icon prediction is a memory aid that allows only those icons that follow the first icon of a selected sequence to light up (Prentke Romich Co., 1992). Icon prediction increases accuracy, enhances output rate, and decreases the amount of icon selection errors.

The Liberator follows the same format as the Light/Touch Talker, using the 128 location display, scanning, or direct selection. Successful use of the Liberator may permit acquisition of the ability to produce communication for social, educational, and vocational purposes at a faster and more efficient rate. In addition, Liberator use may allow individuals with severe communication impairments to become initiators instead of respondents, as much of the research indicates (Calculator & Dollaghan, 1982; Harris, 1982; Light, Collier & Parnes, 1985a; 1985b; 1985c).

**Augmentative and Alternative Communication Strategies**

**AAC Use Characteristics**

AAC strategies have to do with how aids, symbols
and techniques are utilized to result in communication (Vanderheiden & Lloyd, 1986). Much research indicates that unique styles exist when one participant of a dyad is speaking and the other is nonspeaking. A number of recent studies have analyzed these interactions. For example, speaking individuals are noted to dominate conversations over individuals who are nonspeaking (Calculator & Dollaghan, 1982; Harris, 1982; Kaczmarek, 1990; Light et al., 1985a, 1985b, 1985c). Such domination puts AAC users at risk for loss of independence in communication of the basic communication interactions (i.e., expression of wants and needs, information transfer, social closeness, and social etiquette) (Light, 1988).

Results of a study conducted by Harris (1982) involving three young children with cerebral palsy resulting in severe communication impairments showed that teachers dominate communicative interactions with students who are nonspeaking. Teachers were further observed to be the more frequent initiators of a conversation and children were thus resigned to primarily respond to the initiations. Interactions occurred when teachers were looking for specific
information from the AAC users. AAC users rarely interacted with others on a social basis. Furthermore, appropriate time was not given to the subjects to allow them to formulate and execute messages through voice output. Children’s turns were thus preempted by teachers "speaking" for them. To compensate for inadequate response time, the AAC users employed conventional gestures (i.e., head nods/shakes or pointing) to communicate rather than using their AAC devices.

A classic three-part study conducted by Light, Collier, and Parnes (1985a; 1985b; 1985c) analyzed the communicative interactions of primary caregivers and eight young males who were physically disabled. These male subjects, ages four to six years, used Blissymbol communication boards; caregivers were familiar with this AAC symbol system. Interaction occurred during 20 minute unstructured free play situations in a clinic room. Caregivers were instructed to play, converse, and interact with the subjects as they would at home. Results indicated that the caregivers controlled interactions by producing more than twice as many turns as the subjects. Request behaviors were the least
frequently occurring function used by the subjects. Still further, subjects fulfilled only half of their communicative turn opportunities by responding only when obliged to do so. Caregivers, on the other hand, used a high percentage of requests, an act which limited response options available to the subjects (Light et al., 1985b). Furthermore, caregivers filled in conversational gaps. Their domination diminished subject's opportunities for proper education on initiation through use of the AAC device.

In a related study, Calculator and Dollaghan (1982) researched interaction patterns between seven individuals who were nonspeaking, physically handicapped and cognitively impaired, and their teachers. These seven also used Blissymbol communication boards. Interactions occurred during the start of each subject's regular school day, an appropriate time to observe conversational strategies. Subjects had initiation and response opportunities on a wide range of topics (e.g., greetings, a review of personal events, and the weather). Findings, consistent with those of previously cited studies, were that subjects were placed in respondent roles three
times more frequently than initiator roles. Communication board use was infrequent, despite subject ability to do so. Subject responses to partners' "right questions" greatly outnumbered subject initiations of requests. Teachers were noted to respond to subjects' responses more often than to their initiations, an interactional approach which again did not allow for spontaneous social interaction skills. The investigators speculated that individuals who are nonspeaking seldom initiate conversations due to lack of success in previous initiation attempt experiences.

Glennen and Calculator (1985) used an A-B design to train two children who were nonspeaking and physically handicapped to increase the frequency of requests for ten toy objects while using E-Tran communication boards. E-Tran boards allow users to use eye gazes to encode messages to a "listener". Both subjects, ages five and twelve, resembled the subjects in the previous studies (Calculator & Dollaghan, 1982; Harris, 1982; Light et al., 1985). They rarely initiated communication, seldomly used communication boards, and relied primarily upon responses to the "right questions" by others to communicate their needs
and/or wants. Requests for the ten specific items increased following training, but there was no generalization to other communicative initiation skills.

All of these studies found a common problem among individuals who are nonspeaking. AAC users are often placed in respondent roles even when they have demonstrated abilities to use communication devices and abilities to initiate conversations. Inadequate social interaction skills are a common problem among AAC users. Thus, communicative interaction between children who are nonspeaking and their partners needs improvement (Glennen & Calculator, 1985).

A study conducted by Byren and Joyce (1985) concluded that a major cause of AAC intervention failure is that it is not executed in the natural environment. Accurate system operation training is simply not enough to enable the AAC user to develop social communication and interaction abilities. At least a part of intervention should take place in natural environments and with trained communicative partners since communication is a two-way process which involves a speaker and a listener (Calculator &
Dollaghan, 1985; Calculator & Luchko, 1983; Farrier, Yorkston, Marriner & Beukelman, 1985; Light et al., 1985a; 1985b; 1985c).

**AAC Partner Training**

Training communication partners is essential to the success or failure of communication of AAC users (Light, 1988). However, the importance of the use of partners in the interaction process has been poorly recognized. Light (1988) believes that there has been very little research attention to the effectiveness of partner training as a way to facilitate AAC interactions. Most intervention studies deal only with training the AAC user in the clinical setting to perform communicative acts (Light, 1988). Tasks such as naming objects and making requests from a limited number of selections are common therapy targets (Glennen & Calculator, 1985; Mirenda & Santogrossi, 1985). However, results of a study conducted by Calculator and Luchko (1983) indicated that after even a half-hour staff inservice training on communication partner roles, a subject had increased opportunities to communicate using a communication board. Training partners to provide interactional strategies can, thus,
be highly effective.

An abundance of research indicates that AAC users are more likely to use conventional modes of communication (e.g., gestures) rather than AAC devices which might hold more communicative power (Calculator & Dollaghan, 1982; Harris, 1982; Light et al., 1985c). A partner with viable communication strategy training can facilitate the AAC user to use the more sophisticated mode, increase communication opportunities, and gain independence in communication skills necessary for "social, educational, vocational and recreational activities" (Blackstone, 1991, p. 1).

Conclusion

There are a number of AAC voice output devices on the market (e.g., Intro Talker, Light/Touch Talker, Liberator) that may benefit the millions of individuals with severe communication impairments to independently communicate in this predominately speaking world. These AAC systems, when applied/used properly, will enable individuals to request objects, express needs, but more importantly, to help them to develop appropriate and socially acceptable communication skills (e.g., initiating conversations, making requests
and answering questions). One way for AAC users to develop these skills is through interactions with trained speaking individuals.

Most AAC interaction research has found that individuals who are nonspeaking are placed in respondent roles. Such placement does not allow for the two-way process of communication (i.e., speaker and listener) to be employed. Thus, request behavior training and partner training, with viable speaking partners, needs to be utilized as intervention targets. Such training may enable an individual who is nonspeaking to be placed in "speaker" roles rather than only in "listener" roles. Utilizing partner training may serve to increase this opportunity and allow for active participation in all areas of communication. This study, therefore, will measure the voice output request behaviors of a six-year-old male subject with cerebral palsy. These request behaviors will provide the subject with opportunities to improve daily functional communication and interaction skills (Blackstone, 1986). Request training vs request training plus partner training with a viable speaking partner will permit the subject to gain control over
the environment (Reichle et al., 1991) and sustain a two-way communication process while interacting with other communicative partners (Cipani, 1989).
CHAPTER 3

METHOD

Subject Description

SD, a six-year-old-male attending a noncategorical public preschool, participated in this study (Appendix A). Signed permission for participation was obtained from the following: SD's parents, speech-language pathologist, partner, and administrator and Eastern Illinois University Human Resource Board (Appendix A-F). To be eligible for enrollment in the preschool program, children must meet the criteria set by the Multidisiplinary Conference (MDC). All children must be between the ages of three and six, display at least one handicapping condition, and have scored at least one standard deviation below the mean on a psychological profile. SD met this criteria with his physical impairment diagnosis of cerebral palsy and speech dysarthria.

SD is diagnosed with mixed spastic and athetoid cerebral palsy, more specifically described as spastic quadriplegia with speech dysarthria. He demonstrates increased bilateral upper extremity extensor tone. SD can independently extend his arms above his head, but
cannot bring his hands to midline or to his mouth. Since arm movements are quite limited, SD requires assistance in all areas of activities of daily living (ADL). When SD is at school, feeding is performed by staff. His chewing skills are immature, therefore, soft foods are cut into bite sized pieces and chewy foods are mashed or blended. SD drinks from a small glass held to his mouth by staff. He is able to assume various head/neck positions but demonstrates difficulty executing smooth, coordinated movements and maintaining an erect midline position for greater than 1-2 minutes. His head tends to posture laterally to the left.

Through lateral head movement to the right and left, SD demonstrates good ability for activating a wobble switch to control his VOCA (i.e., the Liberator). Prior to this study, SD used a Prentke Romich LightTalker with Minspeak Software, 128 location display with DECTalk Speech, and a wobble switch mounted to the right side of his wheelchair. SD was able to use this AAC device via the wobble switch to achieve row-column scanning. Device use was targeted during isolated speech therapy sessions. Before acquisition of the LightTalker, SD communicated via a
combination of vocalizations, gestures, and facial expressions.

SD is social and initiates conversations with others around him. His vocalizations, however, are limited mostly to single-syllable words such as "no", "yeah", "bye", and "mom". Without use of VOCA, SD is unable to fully express himself and achieve maximum level of independence. He relies on others to ask the "right question" in order for him to be able to indicate his needs and or wants (McGregor, Young, Gerak, Thomas & Vogelsberg, 1992).

SD is able to gain the attention of his listener, introduce himself, and relay messages to teachers, peers, and family members. Daily decision making skills are emerging.

Equipment

In December 1991, SD received Prentke Romich Company's newest voice output AAC device, the Liberator, which promotes total communication (i.e., speech, writing, editing, and environmental control). The device uses 512K of memory, DECTalk Speech, Minspeak, and most importantly, icon predication. Icon predication is a memory aid which allows only those
icons that logically interface with a selected icon to light up and be accessible. Icon prediction increases message output accuracy and rate. SD uses "quarter scan," meaning that one fourth of the potential 128 locations are actually active. SD’s display contains numbers, pictures of communication partners, and icons representing frequently used messages. In the present quarter scan, SD uses two icon sequences.

The Liberator is mounted on SD’s wheelchair; a wobble switch is mounted to the right side of his head for head activation in order for him to access a voice output message. Icons that were used in execution of this study were located at positions F2, E6, and E5 (Appendix G).

Setting

The first phase of this investigation (i.e., request for "drink") was executed during SD’s regular pull-out speech-language therapy sessions with LC, his school speech-language pathologist. Sessions were conducted on a three times per week schedule with each session lasting for 15 minutes. The setting was chosen to be consistent with SD’s school routine and to minimize distractions.
The second phase, requesting for "eat" plus partner training, was executed in SD's regular classroom with JM, his designated partner. Sessions were conducted on a three times per week schedule with each session lasting for 15 minutes. This setting was chosen to be consistent with SD's snack routine, and to provide for functional intervention in a natural setting.

**Design**

A multiple baseline design with alternating treatments was used to evaluate the effectiveness of Treatment 1 (i.e., requesting) and Treatment 2 (i.e., request training plus partner training) on SD's request behaviors through use of the Liberator. An alternating treatment method provided the researcher with a strategy to measure if one treatment technique was more effective than the other. The design demonstrated the independent and relative effects of two treatments (i.e., requesting vs requesting plus partner training) in short amounts of time (Hegde, 1987). As Barlow & Hayes (1979) have suggested, the major advantage of using this treatment design is that there is not a requirement to withdraw treatment which might result in
a reversal of potential therapeutic gains.

The phases of this study included the following: a) baseline; b) Treatment 1, training voice output request behaviors for obtaining a drink; c) baseline; and d) Treatment 2, training a communication partner to elicit voice output request behaviors for obtaining something to eat. Figure 1 displays the research design, utilizing actual data.

---

Insert Figure 1 here

---

**Treatment**

Treatment 1 and Treatment 2 generalizations were controlled; each treatment's procedures were provided in the same environmental setting, at the same time, every time treatment was offered as that of "no treatment" procedures (i.e., baseline) (Hegde, 1987). Therefore, generalizations across environments were not in question. To control for extraneous treatment variables, the researcher designed a structured treatment which LC, the speech-language pathologist, implemented during Treatment 1 and JM, SD's communication partner, implemented during Treatment 2.
The goal of the treatment plans was to obtain generalized request behaviors for drink and eat from SD with the least amount of prompting. A generalized, as opposed to specific, voice output request was sought in order for SD to have access to an entire range of preferred items (Reichle et. al., 1991). Generalized requests have also been noted to be more resistant to vanishing and quicker to reach acquisition because they are more likely to be reinforced (Ferster & Skinner, 1957; White & Haring, 1980). The planned hierarchy of prompts from least-to-most allowed for ease of movement from one prompt level to next, and provided for natural error opportunities (Reichle et. al., 1991). The hierarchical prompt plans are displayed in Appendix H and I, with a sample data collection sheet displayed in Appendix J.

Baseline

Data documenting SD's level of voice output request behaviors were obtained prior to the initiation of treatment and at other baseline times as evidenced in Figure 1. The Liberator was readily accessible to SD, however, during baseline he was not provided with any instructions or cues about device use. SD was not
provided with voice output request behavior treatment previously. SD's frequency and type of request responses, specific to treatment phases, were documented on data collection sheets (Appendix J) for later analyses. A sufficient number of data points were collected to establish stability in current voice output request behaviors. It was anticipated that minimal independent drink requests would occur.

**Treatment 1**

The goal of Treatment 1 goal was to elicit a general voice output request responses for "drink". The structured treatment plan, designed by the researcher, was implemented by LC, SD's speech-language pathologist, through least-to-most hierarchical prompting. A typical response elicitation consisted of the following: A glass of milk was placed in visual field and a response time of 20 seconds was allotted for SD to respond. When the response time exceeded 20 seconds, LC participated in the following hierarchy of events: 1) modeled the desired request behavior on the Liberator, 2) took a drink herself and commented on the goodness of the drink's taste, 3) provided response time once again, and moved on through the hierarchical
prompting. Prompting continued until SD succeeded in a voice output request for drink. After the request response occurred, SD was reinforced with a sip of the drink. The process was repeated throughout the treatment session. SD's frequency and type of request response (by prompt type) was documented on data collection sheets (Appendix J) for later analysis. Treatment 1 continued until SD produced four requests for "drink" per session, with either time delay or verbal prompt for three consecutive sessions.

**Treatment 2**

Treatment 2 was initiated when SD reached Treatment 1 criteria. The researcher trained a communication partner, JM, to elicit a general voice output request for "eat". Procedures of least-to-most prompting followed those used in Treatment 1. The communication partner, JM, was trained by the researcher. The partner observed two treatment sessions and on the third and fourth sessions, she was asked to chart the prompt levels and compare it with the researcher to check reliability. After the fourth session, the partner and the researcher role played a treatment session to make sure that Treatment 2 was
being directly followed. For example, the snack was placed in clear visual field and a 20 second response time was allotted. If SD did not provide a voice output request response within 20 seconds, JM modeled an eat request on the Liberator. She then took a bite and positively commented on the food's taste, provided response time, and systematically moved on to further least-to-most hierarchical prompting. A response was elicited. After the "eat" request occurred, SD was reinforced with a small portion of the snack and the steps were repeated until the 15 minutes of treatment time were up. To avoid cue binding (i.e., causing SD to be reliant on an external cue), SD was always allowed an independent response time before any cue was employed. SD’s frequency and type of request responses for food were documented on data collection sheets (Appendix J) for later analyses. Treatment 2 continued until SD’s communication partner successful elicited four requests for eat per session with no more than a verbal prompt or time delay cues. Criterion level was met for three consecutive sessions before Treatment 2, and the study, were terminated.
Data Collection and Reliability Checks

LC implemented Treatment 1 and collected data during baseline and Treatment 1. Interjudge reliability was assessed by two adults, the researcher and LC, during Treatment 1 and the researcher and JM during Treatment 2. Both observers were present on dates of interjudge reliability checks. Appendix K displays dates of interjudge reliability data collection.

Data Analysis

Data from both baselines and each treatment condition were plotted. Data were examined to determine the effects of Treatment 1 and of Treatment 2. Comparisons were made.
CHAPTER 4

RESULTS

The present study was designed to examine the effects of request training vs request training plus partner training on voice output request behaviors of a six-year-old male subject with cerebral palsy. The subject, SD, diagnosed with spastic and athetoid cerebral palsy, participated in this study. He uses Prentke Romich Company's newest voice output AAC device, the Liberator. The device is mounted on SD's wheelchair with a wobble switch mounted to the right side of his head for activation of a voice output message.

SD received two treatments using his AAC device. Treatment 1 was implemented during his regular pull-out speech-language therapy sessions with LC, the Speech-Language Pathologist in the school district. Treatment 2 was implemented in the classroom with JM, the designated communication partner. Sessions were conducted three times a week for 15 minutes. A tally sheet was provided to LC and JM by the researcher for use in data collection during each treatment session conducted (Appendix J). Treatment 1 and Treatment 2
generalization across environments was controlled for in that treatment procedures were provided in the same environmental setting, at the same time of day, every time treatment was offered as that done during "no treatment" procedures.

A structured treatment plan involving a hierarchy of prompts from least-to-most was designed by the researcher to control for extraneous variables. LC implemented this plan during Treatment 1 and JM implemented it during Treatment 2. The goal of the treatment plans was to obtain generalized request behaviors for "drink" and "eat" from SD with the least amount of prompting (Appendix H & I). The data taken from each baseline and each treatment condition were plotted and examined to determine the effects of Treatment 1 and of Treatment 2.

Treatment 1

The first part of the research question was concerned with "the effects of request training without the use of a viable speaking partner". The goal of this treatment was to elicit a general voice output request response for "drink". Results are displayed in Figure 1.
Criterion of SD producing four requests for "drink" per session using either time delay or verbal prompt for three consecutive sessions was achieved. Evidence of this is displayed after the fifth therapy session. The data reflect the percentage of each prompt used for the baseline and the ten successive treatment sessions.

It is interesting to note that during the third and fourth sessions gestural and verbal prompting were used and by the fifth session, time delay was the significant prompt level. Throughout the sixth through tenth sessions, verbal prompting steadily decreased while time delay prompting steadily increased. This may represent a high level of cognitive functioning in the subject. Inspection of the eleventh through twelfth sessions reveals a decrease in time delay prompting with an increase in verbal and gestural prompting used. This change toward less independent responses may be attributed to three therapy sessions missed between treatment ten and eleven due to LC’s and SD’s illness.

Visual inspection of the graphed prompts reveals that the time delay had a 22% decrease from session ten
to session eleven of the treatment while verbal prompting had a 22% increase. Furthermore, there was a continual decrease in time delay prompting (i.e., 45%) from session eleven to session twelve of the treatment, with verbal prompting increasing 28% and gestural prompting increasing 17%. Since there was a delay in the treatment sessions due to LC's and SD's illness, this may represent what a second baseline (i.e., withdraw of treatment) would represent. Initially, the subject went from verbal prompting being the most substantial to time delay prompting becoming the most substantial as the treatment sessions continued.

**Data Collection and Reliability Checks: Treatment 1**

LC implemented Treatment 1 and data were collected during all phases of this treatment. Interjudge reliability was assessed by two adults, the researcher and LC (Appendix J). Both observers were present on dates of interjudge reliability. Interjudge reliability was achieved at 95%.

**Treatment 2**

The second part of the research question was concerned with "...request training plus partner training". The goal of this treatment plan was to
elicit a general voice output request response for "eat" with the least amount of prompting. The researcher trained a viable communication partner, JM, to elicit a general voice output request for "eat". The partner was trained by first observing two treatment sessions and was then asked to chart her results on the third and fourth sessions to check for interjudge reliability. The researcher and the workable communication partner then role played a treatment session. The purpose of this was to make sure that the Treatment 2 therapy plan was being explicitly followed by the communication partner. This partner is SD's one-on-one aide and is a frequent communication partner who has previously received no training in request elicitation. Results of Treatment 2 are displayed in the bottom portion of Figure 1.

The data reflect the percent of usage of each prompt used for the baseline and the ten successive therapy sessions during Treatment 2. Treatment 2 began when SD reached Treatment 1 criterion. Criterion for Treatment 2 was the same as that set for Treatment 1: four requests (for "eat") per session using either time delay or verbal prompting for three consecutive
sessions. Treatment 2 criterion was achieved following the third therapy session. This criterion acquisition is interesting to note because when the partner was introduced, it only took one complete therapy session past the baseline to reduce the prompt level to time delay or verbal prompting as compared to the two therapy sessions when the partner was not involved.

The research hypothesis was that training a communication partner to elicit request functions would further impact on the number of requests used by an individual who is functionally nonspeaking. This hypothesis was supported by Treatment 2 results. Throughout each therapy session, SD requested for "eat" an average of 13 times as compared to an average of 3.6 times for "drink" during Treatment 1. This is a 9.4 occurrence increase in Treatment 2 as compared to Treatment 1.

Visual inspection of Figure 1 further reveals that least-to-most hierarchical prompting was achieved faster during Treatment 2 than during Treatment 1. By the fourth therapy session in Treatment 2, time delay prompting had increased from 0% to 78% with a 14% decrease in verbal prompting. It is also interesting
to note that initially in Treatment 2, model prompting was the most substantial prompt level used whereas in Treatment 1, it was verbal prompting. After the third therapy session in Treatment 2, model prompting decreased from 45% to 0% and remained at this percentage throughout eighth to twelfth therapy sessions in Treatment 2. Gestural prompting during Treatment 2 also decreased after the third therapy session whereas in Treatment 1, gestural prompting decreased after the fourth therapy session.

Additionally, throughout Treatment 1 and Treatment 2, there were frequent decreases in time delay prompting which interchangeably resulted in increases in the use of verbal prompting. During Treatment 1, the overall average decrease of time delay prompting was 44.6% as compared to the overall average decrease of 18.8% in Treatment 2. This produced a 25.8% decrease in the use of time delay prompts utilized throughout Treatment 1 therapy sessions as compared to Treatment 2 therapy sessions. Furthermore, Treatment 1 had an overall average use increase of 39% with verbal prompting, whereas Treatment 2 had an overall average use increase of 14.8%. Thus, a 24.2% increase in the
use of verbal prompts during Treatment 1 as compared to Treatment 2 was established.

The results of Treatment 2 as compared to Treatment 1 indicate that when a functionally nonspeaking individual is involved with a viable speaking communication partner in a natural setting, request behaviors increase while use of least-to-most hierarchical prompting decreases at a more rapid rate than when a viable speaking partner is not utilized as a component of the treatment approach. This outcome can be further substantiated by noting that a significantly higher level of time delay prompting was employed during Treatment 2 as compared to Treatment 1, while a lower level use of verbal prompting was employed.

Data Collection and Reliability Checks

JM implemented Treatment 2 and data were collected during all phases of this treatment. Interjudge reliability was assessed by two adults, the researcher and JM, during Treatment 2 (Appendix J). Interjudge reliability of 100% was achieved.
CHAPTER 5
DISCUSSION

Many speech-language pathologists believe that unique styles exist when one participant of a dyad is speaking and the other is nonspeaking (Calculator & Dollaghan, 1982; Harris, 1982; Kaczmarek, 1990; Light et al., 1985a; 1985b; 1985c). Research has demonstrated that speaking individuals dominate conversations over individuals who are nonspeaking. Similarly, individuals who are nonspeaking are often placed in respondent roles rather than initiator roles. Such domination decreases independence for individuals who are nonspeaking and makes the two-way communicative interaction process, involving at least two people (i.e., speaker and listener), a common problem for AAC users. The two-way communication process is, thus, often not fully exploited.

Still further, individuals who are AAC communicators may exhibit significant deficits in the ability to initiate requests. Requests serve to allow an individual to exercise control over the environment (Reichle et al., 1991), and viable partners may be unskilled in their roles as request behavior
facilitators (Beukelman & Mirenda, 1992). Therefore, this study focused on the effects of request behavior training and partner driven request training with a young AAC user.

A single-subject research design utilizing multiple baselines with alternating treatments (ABAC) was used to measure the voice output request behaviors of a six year old male subject with cerebral palsy. The results of the study demonstrate that acquisition of request behaviors provided the subject with opportunities to improve daily functional communication and interactional experiences. The use of request training, and request training plus partner training with a viable speaking partner, permitted the subject to gain control over part of his environment.

**Treatment 1**

Treatment 1 involved elicitation of "drink" request behaviors without use of a viable partner and criterion level was established after the fifth therapy session. This treatment was executed during the subject’s traditional pull-out speech treatment by his speech-language pathologist and was, thus, far removed from natural environments. Results of Treatment 1,
displayed in Figure 1, revealed that it took SD two complete therapy sessions past the baseline to reach criteria. Verbal prompting was initially the most substantial prompt level used with a decrease in time delay prompting fluctuating throughout the remainder of the therapy sessions. Additionally, there was a significantly higher overall use average for prompting with lower incidences of both request behaviors and time delay prompting when a partner from the subject’s natural environment was not employed as a part of the treatment, and when treatment was executed in an unnatural environment.

**Treatment 2**

Results of Treatment 2, also displayed in Figure 1, revealed that in order for the subject to meet the same criterion level, it took only one therapy session past the baseline. Treatment 2 supports the research hypothesis that training a communication partner to elicit request functions from an individual who is functionally nonspeaking impacts on the number of requests initiated by the AAC user. There was a higher use of request behaviors for "eat" when a viable communication partner was involved in the communicative
interaction process than for "drink" when a viable partner was not utilized. Additionally, least-to-most hierarchical prompting was established at a faster rate when a communication partner from the subject's natural environment was skilled in her role of request elicitation. Initially, model prompting was the most substantial prompt level used but this decreased after the first complete therapy session. Furthermore, in Treatment 2 fewer prompts were used and data displayed less drastic fluctuation in the decreased usage of time delay prompting.

**Overall summary**

Comparison of Treatment 1 and Treatment 2 results indicate that when an individual who is functionally nonspeaking is involved with a trained communication partner in a natural environment, initiated request behaviors to fulfill needs and/or wants increases. Additionally, least-to-most hierarchical prompting decreases at a faster rate when a communication partner is utilized. Requesting in the presence of a communication partner in a natural environment allows for the two-way process of communication (i.e., speaker and listener) to be employed by the AAC user.
Implications of Research

The most striking features of this study are two-fold: fewer prompts were necessary to elicit requests when a trained partner in a natural environment was employed; and a higher number of requests were initiated by the subject when a trained communication partner was employed. These two results suggest that the use of a viable trained communication partner aided the subject in independently initiating requests; therefore, the subject's ability to fulfill his wants and/or needs was achieved. Also, the study established that a training sequence which begins in a pull-out program followed by execution in a natural setting is effective. The portion of training which occurred in the pull-out program (Treatment 1) allowed the subject's speech-language pathologist, a trained communication interventionist, to expose the subject to the training paradigm and to continue eliciting generalized requests for "drink" until the subject had achieved a high degree of independence in such requests (Criterion). This pull-out setting also served to minimize extraneous sounds and sights and, perhaps, the subject was thus focused on the task of acquiring
request proficiency. The second portion of the training (Treatment 2) added important other variables to the total treatment paradigm. First of all, the study results strongly verify that a frequent communication partner who is not a trained communication interventionist can acquire skills in request behavior elicitation. This result has tremendous implications for assisting the subject to acquire overall communication competence. Rarely will the trained communication interventionist (i.e., speech-language pathologist) be the partner for the individual who is nonspeaking. It is good to note that more frequent partners, such as the subject's one-on-one aide, can quickly and effectively acquire skills which enhance their roles in interactions involving persons who are nonspeaking. Still further, it is reassuring that requests occurred more frequently and with less invasive prompting when the setting was the natural environment. Behaviors which are trained to a level of proficiency in natural environment have greater likelihood to be maintained (Calculator & Bedrosian, 1988).

Although the subject acquired a high level of
proficiency with request behaviors, expressing wants and/or needs is simply not enough to be functional in communicative interactions. Individuals who are nonspeaking and use AAC devices need to continually be encouraged to develop effective initiation and turntaking strategies to more fully develop in all areas of communication (i.e., social, educational, and vocational). A way to continue this growth is through the use of communication partner training. The communication partner should be encouraged to provide appropriate time and opportunity in order for the individual who is functionally nonspeaking to produce a wide range of functions in as an independent fashion as is possible.

**Limitations of Research**

One limitation of this study may be attributed to external validity. Logical generality may have been considered a threat to the external validity in this study because its results cannot be generalized to the overall population of individuals who are nonspeaking but only generalized back to the subject who participated in the study (Hegde, 1987).

The subject's current service delivery model may
also been a limitation in the study because of the use of a previously trained speech-language pathologist and a previously untrained classroom aide to serve as the communication partner. Results demonstrated that request behaviors were higher when a communication partner in a natural environment was utilized than when requests were elicited by the speech-language pathologist in a contrived setting. Perhaps this difference may be attributed to the fact that the treatment plan was followed more specifically by the communication partner since she had just been trained by the researcher. The speech-language pathologist, on the other hand, has provided services for years and, therefore, may have occasionally executed "clinical judgment" which did not coincide with the specified prompt levels. More subject request time may have been allotted by the speech-language pathologist since she may have been more familiar with the subject's need for longer processing and response time.

The study's results may have been somewhat weakened in that intrajudge reliability to document the consistency and reliability of the treatment sessions was not documented. Use of video equipment would have
given the speech-language pathologist, communication partner, and researcher the opportunity to rescore a percentage of randomly selected therapy sessions to obtain intrajudge reliability and reinforce occurrence of interjudge reliability. Interjudge reliability, however, was quite high for both treatment conditions.

Still further, results in Treatment 2 may have been positively skewed by Treatment 1 training since Treatment 2 immediately followed Treatment 1. Therefore, a counterbalancing of treatments should be considered in subsequent similar research. Since there was a three day interval between treatment sessions in the midst of execution of Treatment 1, due to subject and speech-language pathologist illness, this may have affected the latter data on the subject's "drink" request behaviors. With this delay in treatment, there was in actuality a withdrawal of treatment that may have represented a second baseline for Treatment 1.

Another limitation that was discovered during the study was use of highly motivating drink and food items. Since the subject enjoys milk and ice cream, they were used. Their intrinsic motivational reinforcement may weaken the generalizability of the
subject’s general request behaviors for other objects or events.

**Implications for Future Research**

Although the findings in this research have supported the research hypothesis, further research needs to be developed to determine the efficacy of this treatment program. Along with this, additional appropriate intervention programs for individuals who are functionally nonspeaking and their communication partners are needed. Treatment should be brought into the classroom to allow for improved collaboration with the teacher. What an individual does in therapy may not be carried out in the natural environment for functional use.

Various partners should be utilized in order to give the AAC user an opportunity to communicate effectively in diverse situations with multiple partners so that a broader range of functions can be achieved.

A next logical step, after training generalized request behaviors, would be to use a communication partner again to train explicit requests (Appendix L) (Reichle et al., 1991). Explicit requesting benefits
both individuals involved in the two-way process of communication because it reduces the need for the listener to interpret and also reduces the frequency of requests for clarification purposes (Reichle et al., 1991).

In addition to the above, once requesting behaviors are utilized at a consistent rate, training rejection behaviors should follow. This training should also involve the use of a communication partner across multiple environments. Rejection behaviors provides a means of removing and avoiding nonpreferred objects, as well as activities, and serves as a self-protection and self-regulation skill (Reichle et al., 1991).

Further, methods of training more than one partner and providing in-services to educate people in the community, as well as the schools, needs to be refined. Such training refinements will give individuals who are nonspeaking the opportunity to gain control over the environment, sustain a two-way conversation, and become more socially accepted by others. In addition to this, a method to evaluate the time it takes between requesting an object or activity without a
communication partner as compared to the time it takes with the use of a communication partner should be implemented.

**Summary and Conclusions**

This study has presented a preliminary view of using a viable speaking communication partner to aid in the facilitation of request behaviors with an AAC user. Future research should attempt to further demonstrate the effects of training other communicative partners to aid in the use of request behaviors. By focusing on this research and communication partner training, it is possible that speech-language pathologists, as well as partners across a variety of natural environments, will increase the opportunity for individuals who are functionally nonspeaking to take active participation in all areas of communication (i.e., social, education, vocational, and recreational) and sustain the two-way communication process with others.
REFERENCES


Figure 1. Multiple baseline design for voice output request behaviors for drink (Behavior 1) and for partner elicited voice output request behaviors for eat (Behavior 2).
Appendices
Appendix A

PARENTAL PERMISSION

I grant permission for my child, _______________________ to participate in the research study entitled "The Effects of Partner Training on Request Behaviors with an AAC User" conducted by Amy Fiala, graduate student in the Department of Communication Disorders and Sciences, Eastern Illinois University, Charleston, Illinois.

Parent Signature _____________________________

Child's Date of Birth __________________________

Today's Date _____________________________

Address _____________________________

City, State Zip _____________________________

Phone _____________________________

Return to:

Amy Fiala, B.S.
EIU Speech-Language-Hearing Clinic
7th and Hayes Streets
Charleston, IL 61920
Appendix B

SPEECH-LANGUAGE PATHOLOGIST PERMISSION

I __________________, am willing to participate in the research study entitled "The Effects of Partner Training on Request Behaviors with an AAC User" conducted by Amy Fiala, graduate student in the Department of Communication Disorders and Sciences, Eastern Illinois University, Charleston, Illinois. I understand that identities of all participants names will remain confidential throughout this study.

Speech-Language Pathologist

______________________________
Today's Date

______________________________
Address

______________________________
City, State Zip

______________________________
Phone

Return to:

Amy Fiala, B.S.
EIU Speech-Language-Hearing Clinic
7th and Hayes Streets
Charleston, IL 61920
PARTNER PERMISSION

I ____________________, am willing to participate in the research study entitled "The Effects of Partner Training on Request Behaviors with an AAC User" conducted by Arny Fiala, graduate student in the Department of Communication Disorders and Sciences, Eastern Illinois University, Charleston, Illinois. I understand that identities of all participants names will remain confidential throughout this study.

Partner Signature

Today's Date

Address

City, State Zip

Phone

Return to:

Amy Fiala, B.S.
EIU Speech-Language-Hearing Clinic
7th and Hayes Streets
Charleston, IL 61920
Appendix D

ADMINISTRATOR PERMISSION

I, grant permission for ________’s instructional and support staff in cooperation with Amy Fiala, graduate student in the Department of Communication Disorders and Sciences, Eastern Illinois University, Charleston, Illinois, to participate in the research study, "The Effects of Partner Training on Request Behaviors with an AAC User".

Administrator’s Signature

Today’s Date

Address

City, State  Zip

Phone

Return to:

Amy Fiala, B.S.
EIU Speech-Language-Hearing Clinic
7th and Hayes Streets
Charleston, IL  61920
Appendix E

Letter to Human Resource Board

December 3, 1992

Edwin L. May, Ph.D.
Director, Grants and Research
220 Old Main
Eastern Illinois University
Charleston, IL 61920

Dear Dr. May:

This letter is to serve as a request to use human subjects for research purposes. For my Master's Thesis, I am conducting a study entitled "The Effects of Partner Training on Request Behaviors with an AAC User". This study is a single-subject design with alternating treatments using a six year male boy with cerebral palsy from Effingham. The subject uses a wobble switch to generate a voice output message on his Liberator (i.e., the augmentative and alternative communication device).

There will be minimal harm placed on the subject due to the limited physical contact that will be present. The subject will be receiving his regular speech-language treatment from the Speech-Language Pathologist in the Effingham school district three times per week for 15 minutes. The treatment, however, has been developed by the researcher to control for any extraneous variables. Permission for this young subject to participate will be granted by his parents, since he is under-aged. The subject's identity will remain confidential and he may withdraw without penalty of any sort. The Speech-Language Pathologist and designated communication partner to serve as trainer and partner in the
Appendix E, con't

Letter to Human Resource Board

experiment will sign consent to participant. The school district's administration will grant written consent for the primary investigator and faculty advisor to conduct on-site data collection and trainer consultation as needed. (See Appendix H-K).

In this study the researcher hopes to find that partner treatment significantly increases the subject's requesting behaviors. Teachers, family members, and peers could then be trained to promote further functional communications through the subject's effective use of the device.

I look forward to your approval of this research project.

Sincerely,

Amy J. Fiala, B.S.
Graduate Student Investigator

Charlotte A. Wasson, M.S.
Assistant Professor/Thesis Chair
Appendix F

MEMORANDUM

TO: Bob Augustine, Chair of CDS
Charlotte A. Wasson, Chair of Fiala’s thesis
Amy J. Fiala, CDS Graduate Student Investigator

FROM: Edwin May, Director of Grants and Research

DATE: December 16, 1992

RE: IRB approval of Fiala’s research

*******************************************************

Amy J. Fiala’s research has been referred to the Institutional Review Board and approved.

Please feel free to proceed. We hope your research is successful.
Appendix G

Example of SD's Overlay

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LIBERATING the Power of Minspeak

QWERTY

Prentke Romich Company
Appendix H

TREATMENT 1

1. Place cup with milk in clear visual field.

2. Provide response time (20 seconds).


4. SLP takes drink and comments-- "Mmm, this is good"

5. Provide response time.

6. Hierarchical prompting - (least-to-most)
   a. additional time - time delay (spont. does on own)
   b. verbal- "want something?"
   c. gestural - point to board
   d. model - hit the wabble switch for him
   e. physical - move his head

**Maximum prompting allowed per prompt type is 4 times

7. When request response occurs, reinforce by providing a drink.

8. Return to step 1.

Treatment sessions: 3 times a week at 15 min. per session

GOAL: A request response from SD with least amount of prompting.
Appendix I

TREATMENT 2

1. Place snack in clear visual field.

2. Provide response time (20 seconds).


4. SLP takes a bite and comments-- "Mmm, this is good"

5. Provide response time.

6. Hierarchical prompting - (least-to-most)
   a. additional time - time delay (spont. does on own)
   b. verbal- "want something?"
   c. gestural - point to board
   d. model - hit the wabble switch for him
   e. physical - move his head

**Maximum prompting allowed per prompt type is 4 times

7. When request response occurs, reinforce by providing a snack.

8. Return to step 1.

Treatment sessions:  3 times a week at 15 min. per session

GOAL: A request response from SD with least amount of prompting.
Appendix J

Data Collection Tally

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<th>TIME</th>
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<th>GESTURAL</th>
<th>MODEL</th>
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SESSION LENGTH:
(Enter the number of occurrences tally)
## Appendix K

### Schedule for Treatment 1 and 2

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<td>*X (C)</td>
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*Interjudge Reliability Scoring.*
Appendix L

Types of Requests

Figure 3. Levels of vocabulary generality and the type of request corresponding to each level.