

USING AN AUGMENTATIVE AND ALTERNATIVE COMMUNICATION DEVICE TO TEACH A PRESCHOOLER WITH DEVELOPMENTAL DELAYS TO REQUEST ASSISTANCE AND SEEK ATTENTION

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ABSTRACT

The purpose of this study was to evaluate the effectiveness of Augmentative Communication (AAC), specifically a Flip 'n' Talk device, with a preschool student with developmental delays. Also, during data collection he was also being evaluated to determine if he had autism (ASD). The ability to functionally requesting assistance and to functionally request the attention of individuals such as teachers, instructional assistants, and later peers was the focus of this study. A multiple baseline design was employed to evaluate the use of AAC across asking assistance or seeking attention. The results of this study suggested that AAC was an effective way to teach functional communication to the participant.

Keywords: AAC, Multiple Baseline Design, Functional Communication, Developmental Delay, Preschooler, Flip N' Talk, ASD.

INTRODUCTION

Many opportunities to learn in childhood are mediated by symbolic activities such as pretend play, which involves verbal communication; therefore, the more developed a student's communication ability and symbolic play, the more opportunities that child will have to benefit (Prizant, Wetherby, Rubin, Laurent & Rydell, 2006). Even if a child can produce utterances, these utterances may not be in a communicative form that can be understood by others.

A core characteristic of children with Autism Spectrum Disorder (ASD) is their atypical development of social skills, language, and communication (Cook, Klein, & Tessier 2008; B. Williams & R. Williams, 2011). If a child with ASD can be taught to communicate, more opportunities for learning can take place. One way of teaching communication has been through the use of Augmentative and Alternative Communication (AAC). This has typically included Picture Exchange Systems (PECs) where a student gives the instructor an icon when a task has been completed. PECs can be used to structure the school day by posting a student's schedule using PECs.

With the increasing use of iPads in the schools, one can develop AAC using the iPad and the various apps that are available (Dundon, McLaughlin, Neyman, & Clark, in press). However, the cost of an iPad is quite high and beyond most classroom budgets. A Flip 'n' Talk (DynaVox Mayer-Johnson) is a less expensive manual augmentative communication system consisting of a main "core vocabulary board" of high frequency words and/or phrases, and an affixed spiral bound flip chart of semantic categories. Vocabulary symbols are placed on both sides of the strips, giving the teacher or child access to 30 categories of symbol strips (DynaVox Mayer-Johnson). Obtaining skills in augmentative communication systems are often an educational priority. Also, ACC can be taught to replace or supplement insufficient communication skills (Ganz & Simpson 2004). Research employing ACC has been receiving increased attention in the peer-reviewed literature. The use of ACC has been suggested as a primary teaching tool for young children with autism. Use of picture exchange communication systems, that can increase choice-making opportunities, has been reported to facilitate

speech acquisition as well as increase the frequency of the number of attempts at communicating within daily routines (Frea, Arnold, & Vittimberga 2001).

The purpose of this study was to evaluate the effectiveness of an augmentative communication device, the Flip 'n Talk, for teaching communication skills to a preschool student with developmental delays. Our overall goals were to increase the participant's ability to functionally request assistance within a daily routine, and to functionally request the attention from individuals; specifically teachers, instructional assistants, and eventually peers.

Method

Participant and Setting

The participant was a five-year-old preschooler. The participant's family recently immigrated to the United States from the Marshall Islands. Also, little English was spoken in the home. The student was being evaluated by a licensed psychologist for Autism Spectrum Disorders (ASD) at the beginning of data collection. In the preschool he was being served under an eligibility category of Developmentally Delayed. The participant was cooperative, but often times lacked attentiveness when multi-stepped prompts were given.

The study took place in a special education ASSIST class "workroom" (Autism: School Support for Inclusion and Systematic Teaching) located in a suburban preschool in the Pacific Northwest. The ASSIST room focused on individual Discrete Trail Training (Smith, 2001) with a small group of seven students at the age of five and under, who were either diagnosed with ASD, or displayed behaviors consistent with an ASD diagnosis. The study took place from 11:15 a.m. until 12:15 p.m. every Monday through Friday at the student's workstation. The workstation included a Rifton chair and child's height table to reduce environmental distraction. There were anywhere from two to four students, and two to three adults in the classroom. This classroom has been the setting for several other action research projects (Armstrong, McLaughlin, Neyman, & Clark, 2013; Dundon, McLaughlin, Neyman, & Clark, in press; Wasson, McLaughlin, Derby, & Clark, 2013). The study was conducted by the first author who was completing the requirements for an endorsement in preschool special

education from a local private university and the Office of the Superintendent of Public Instruction for the State of Washington (McLaughlin, B. Williams, R. Williams, Peck, Derby, Bjordahl, & Weber, 1999).

Materials

A variety of materials were employed. Within the classroom workstation there were specific objects including, two plastic jars of different sizes, fruit snacks (a preferred food item), data collection sheets, a pencil and one Flip 'n Talk with icons specific to the participant. These icons included: "help; no, yes, please, I want; bathroom; wait." There were sections in a notebook that the participant could choose during choose time (e. g. sand table, book, paint...). The other sections in the notebook were "circle; snack; lunch/breakfast; play room; gym; and emotions." All icons were obtained through the computer program Boardmaker®. (Mayer/Johnson)

Dependent Variables and Measurement Procedures

The dependent variable for this study was the number of attempts made to appropriately request attention to inform the classroom staff that task was finished, that he needed help or would like to use the bathroom using the Flip 'n Talk. A correct request was counted for appropriate Flip 'n Talk recording by pointing to and/or saying the specific icons in correct order, for example; "I want fruit snack" or "I want help, open (give closed item to the helper)" or "pizza all done." A correct response for requesting assistance also included taping on an individual's shoulder, raising a hand and/or showing the Flip 'n Talk and the icon to an adult in the classroom.

Experimental Design

A single case multiple baseline design (Kazdin, 2011) was used to evaluate the efficacy of the flip n' talk across two skills. The AAC was implemented at a later point in time for requesting attention. This allows one to make a causal statement between the implementation of the intervention and changes in the participant's behaviors (Kazdin, 2011; McLaughlin, 1983). In addition during baseline a functional relationship between the use of AAC for requesting assistance, was asserted if an increase in that skill is observed, while the skill seeking attention remains low because that skill remains in baseline. When the

intervention is later employed with seeking attention and only at that time performance improves, you are able to make a very strong case for a functional relationship between the intervention and changes in child behavior (Barlow, Nock, & Hersen, 2008). A description of each experimental condition follows.

Baseline

During baseline, the participant was observed at lunch. During the first baseline session, the participant's requests for particular items or actions were provided non-contingently. For example, if the participant wanted juice the teacher provided it without any communicative prompt. In baseline any and all requests were provided non-contingently to the participant. In baseline for seeking attention, any child behavior that was judged as seeking attention was rewarded with adult compliance to the participant's demands. The baseline condition for requests was in effect for six sessions and the second baseline for seeking attention was in effect for 16 sessions.

AAC to Request Assistance

An AAC device, the Flip 'n Talk, was presented to the participant. During the participant's work session, the child was taught how to request "help" to open a jar containing a fruit snack (preferred food item). He was taught to do this by using the Flip 'n Talk. The following sequence was followed. First, the child was shown the jar. The verbal prompt, "Here is the fruit snack, open the jar." If you need help, ask for it using your Flip 'n Talk." Least to most prompts (i.e., verbal, gestural, and then physical prompts) were used. This training took place from 6 to 10 times each school day.

AAC to Request Attention

The student was later introduced and taught how to obtain the instructor's attention using the Flip 'n Talk. After training, the following: 1) tapping the instructor's shoulder paired with the instructor's name, 2) raising his hand, and 3) or taking the Flip 'n Talk to a nearby teacher. If the participant obtained the teacher's attention by either saying her name or tapping her or requesting help using the Flip 'n Talk this was scored as attention seeking. Each of these three ways of obtaining attention was individually practiced 6 to 10 times each school day using a model, lead, and test

procedure (Shouse, Weber, & McLaughlin, 2012). This condition was in effect for 13 sessions.

Reliability

Reliability of measurement for the dependent variables was gathered by enlisting either the classroom teacher or an educational assistant. Inter-observer reliability was conducted once during baseline and twice during intervention. The percent of interobserver agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements and then multiplying by one hundred. An agreement was scored if each observer scored the child's behavior in the same manner. Any deviation in scoring was defined as a disagreement. The percent of interobserver agreement was 100%.

Results

During baseline, the participant made 0.0 attempts at verbally requesting any sort of help, item, activity, assistance, or attention (Figure 1). As shown in the top panel, the participant began to verbally request assistance when the intervention was implemented. The mean number of verbal request for assistance was 5.0 (range: 0-12). As shown in the bottom panel, the participant began that request attention, when the intervention was implemented. The mean number of verbal requests for attention was also 5 (range: 0-7).

Discussion

The use of a Flip 'n Talk effectively increased the

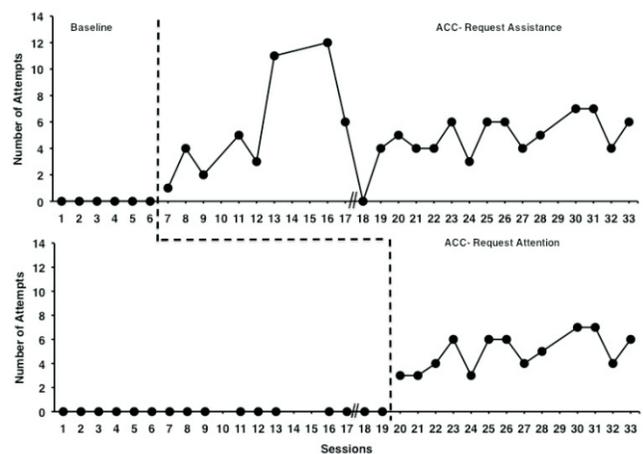


Figure 1. The Number of Attempts to Request Assistance and Attention in Baseline and During the use of the "Flip 'n Talk" Intervention for our Participant.

participant's communication skills, specifically in areas of requesting help and attention. The participant showed increases in the number of attempts to request assistance as well as requesting the attention of teachers and peers. These changes were immediate for both of the skills taught using the Flip 'n Talk. Also, changes in the child's behavior only took place when the intervention was in effect. Thereby, adding to the confidence that the change in student responding was a function of implementing AAC.

The Flip 'n Talk intervention was socially significant (Wolf, 1978) for the participant. This is the case since he was able to obtain increased attention, assistance, and desired items from his classroom environment. The most significant improvement was the increased social interactions with his teachers and peers. Before the implementation of the intervention, the participant used very little verbal language with his peers and the classroom staff. A typical school day consisted of him simply sitting among his peers with little or no exchanges of words. He would look to a teacher for help, but would never ask for attention or assistance. This resulted in a very minimal amount of his desired requests being met. Once intervention began, the participant was verbally asking for help. A typical example would be "I want help open (food item)". When he was taught to request attention, the participant was also calling on teachers in order to obtain assistance by either raising his hand and /or tapping his teacher's shoulder. Toward the end of data collection, he often used the teachers' name.

The use of the multiple baseline design (Barlow et al., 2008; Kazdin, 2011) allowed for a functional relationship between AAC and the increased skills was demonstrated. Another advantage of employing a multiple baseline design is that the teacher does not have to withdraw the intervention or return to baseline conditions to show a cause and effect relationship. Finally, for both measures an immediate change in student behavior was associated with the introduction of AAC.

The procedure was practical to implement and was functional in this classroom. The majority of teaching how to use the Flip 'n Talk took place during an already designated work time in the classroom. This allowed the first author to assess how the participant was using the Flip 'n Talk each

day. Also, the data collection procedure was very manageable because it was completed during the participant's lunch. This lunch period ranged from 10 to 15 minutes everyday and was a time in which the first author always worked one-on-one with the participant.

The procedure was somewhat expensive. The price of the Flip 'n Talk was \$55.00; however, one's school district often funds to pay for low-tech augmentative and alternative communication. The price of the Boardmaker software was \$125.00. This software can be used to make all the icons within the Flip 'n Talk. It is not uncommon that many school districts may already have and use this sort of software.

One limitation of the investigation should be noted. There was a period of time (shown in Figure 1 with two hash marks) where the student was absent for approximately three weeks. This was due to the district's spring break as well as a medical issue. However, the participant did not decrease his use of verbal requests.

Anecdotally, the fourth author and the educational assistant reported that the treatment was very important. First, they reported noticeable and rapid change in the participant's verbal communication, specifically in area of requesting assistance. The master teacher felt that the objectives of the intervention were met and the study was successful. She also felt the participant gained skills, which were still emerging, in the very important areas of verbal communication. In addition, she felt the participant's overall use of language had begun to increase. Lastly, the teacher reported that the relationship that developed between the first author and the participant had been one of the most joyful and educational experiences she had seen in her educational career. This also provides some evidence for the social importance of the outcomes (Wolf, 1978).

A visit to the classroom by the first author two months after data collection was over, found the participant talking in short sentences. He had learned to appropriately use the word "No!" Also, his diagnosis had been changed to ASD. At this writing, his sister is also enrolled in the classroom and was successfully working with another university student (Armstrong et al., 2012). The present outcomes replicate the work of various researchers (Frea et al., 2001; Ganz &

Simpson, 2004; Mirenda, 2009; Prizant & Wetherby, 2005; Prizant et al., 2005, 2006; 2010; Prizant, Wetherby, Rubin, & Laurent, 2003; Prizant, Wetherby, Rubin, Laurent, & Rydell, 2002; Rubin, Laurent, Prizant & Wetherby, 2009) that have examined the efficacy of AAC across a wide range of behaviors. In the present case report, AAC was successfully implemented in a preschool classroom with available staff and school personnel.

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