

WWJMRD 2016; 2(3): 9-12
www.wwjmr.com
e-ISSN: 2454-6615

Brittany Poff
*Department of Special
Education Gonzaga University
Spokane, WA, USA*

Gavin Villar
*Department of Special
Education Gonzaga University
Spokane, WA, USA*

Anjali Barretto
*Department of Special
Education Gonzaga University
Spokane, WA, USA*

Amanda Muniz
*Department of Special
Education Gonzaga University
Spokane, WA, USA*

T. F. McLaughlin
*Department of Special
Education Gonzaga University
Spokane, WA, USA*

Correspondence:
T. F. McLaughlin
Department of Special
Education Gonzaga University
Spokane, WA, USA

The assessment of communication modalities during functional communication training: A replication

**Brittany Poff, Gavin Villar, Anjali Barretto, Amanda Muniz,
T. F. McLaughlin**

Abstract

The purpose of this study was to evaluate the effectiveness of multiple communication modalities during functional communication training. Another purpose was to replicate (Winborn, et al). These modalities included a card and microswitch to decrease aberrant behaviors and increase manding. The participant was a six-year old female with an autism spectrum disorder (ASD) diagnosis in the Inland Northwest. A combination of a multi-element and a reversal design was used to evaluate the effects of these communication modalities. The target behaviors included hitting, biting, scratching, throwing objects, spitting, running away, dropping to the ground, yelling, screaming, inappropriate vocalizations, and hand flapping in front of the body. The study showed the importance of finding the preferred mode of communication to increase the ability to communicate appropriately. The results showed that a microswitch was the most effective mode of communication, and showed the greatest decrease in aberrant behavior.

Keywords: Autism Spectrum Disorder ASD, functional communication, aberrant behavior, replication

Introduction

In everyday life, all individuals need to communicate with others in order to have basic living needs met, ask for assistance, or simply to socialize. Children with autism spectrum disorder (ASD) range in communication ability from no communication at all to high abilities in language development, but no interest in engaging with others (1). A typical diagnosis of ASD occurs at or before the age of three. It can be difficult for all individuals to make choices; this can be especially true for individuals with ASD. This study allowed for the participant to choose between communication modalities using either a card or microswitch as previously done (2). Functional communication training (FCT) (3) is a treatment commonly used to treat aberrant behaviors and increase appropriate behaviors such as manding.

The purpose of this case report was to evaluate the multiple communication modalities during functional communication training, and to replicate the work of Winborn, Wacker, Richman, Asmus, and Geier (4).

Method

Participant

The participant was a six-year old female who lived in the Pacific Northwest named Gwen. She was referred to the Behavioral Assessment Lab at a private university in the Northwest, by a social worker for assessment and treatment of severe aberrant behaviors. These behaviors included hitting, biting, scratching, throwing objects, spitting, running away, dropping to the ground, yelling, screaming, inappropriate vocalizations, and hand flapping in front of her body. Gwen lived with her biological parents and brother.

Setting

Sessions were conducted weekly in the behavioral assessment lab. The room was also used as a preschool. It consisted of three child size square tables with four chairs each and one long table. In the back corner, there was a desk used for a teacher or other adults. Throughout the room there were cupboards and shelves that were used to store supplies and toys. The room also contained a sink. Finally, there was a one-way window that was used for observation and data recording.

Materials

There were several different materials used in completing each phase of this research. The materials used in the preference assessment included pretzels, a Shrek doll, M & Ms, bubbles, a flashlight, and coloring book. The materials used during the functional analysis included toys, blocks, paper, and pencil. During functional communication training, the materials consisted of a break card and microswitch which was a BigMack[®]. Other various materials included a video camera, data collection sheets for 6s intervals, an auditory recording of a 6s interval, a computer, and writing utensils.

Response Definitions and Measurement

There were several dependent variables for this study. Aberrant behaviors included aggression, negative behaviors, and self-injury. Aggression was designated as an "A" on the data sheet, and was defined as hitting, biting, scratching, throwing objects, spitting, running away, and dropping to the ground. Negative behaviors included yelling, screaming, and inappropriate vocalizations; these were coded by a "-". Self-injury was defined as flicking her ears and hitting herself, and was designated by an "S". A mand was defined as touching a card, activating a microswitch, or a verbal statement of "break please" to request a break from a demand. A mand was designated as an "M". All sessions were videotaped and scored at a later time. Each session was a minimum of five minutes in duration, and a six second partial interval recording system was used.

Interobserver Agreement

Interobserver agreement (IOA) was calculated during all phases of the study. Two independent observers sitting next to one another watching a video of the sessions collected IOA simultaneously but independently. An agreement was determined if all components of an interval matched. A disagreement occurred when one or more components of an interval did not match between observers. IOA was calculated by dividing the number of agreements by the number of agreements plus disagreements and then multiplied by 100.

Interobserver agreement was calculated for 100% of sessions. During the functional analysis the mean IOA was 87% (range 60-100%). During functional communication training, the mean IOA was 85.6% (range 50-100%).

Experimental Design and Procedure

This study was conducted in two phases which included a functional analysis and functional communication training (FCT). A multi-element design was used during the functional analysis to determine the function of Gwen's aberrant behavior. An ABCBC reversal design was used in combination with a multi-element design (phase D) to evaluation intervention.

Functional analysis

A functional analysis (5) was completed in order to determine the effects of environmental variables on Gwen's aberrant behaviors, using a multi-element design. The functional analysis consisted of four conditions. The first condition was free play. During this condition Gwen was allowed to interact with any individuals or toys within the room. There were no consequences for aberrant behaviors

during this condition. The second condition was tangible. During this condition Gwen began playing with a toy. The researcher would say, "My turn", and take the toy away from Gwen. If aberrant behavior occurred, the toy was immediately given back to Gwen for 30s. This procedure was repeated several times during a 5 minute session. The next condition was attention. During this condition, Gwen was asked to play alone while the researcher and her mother talked. If Gwen engaged in aberrant behavior she was redirected to play alone. The final condition was an escape. Gwen was presented with the task of writing the letter "m". If Gwen engaged in aberrant behavior, the task was removed for 30s, and then re-presented.

Phase A baseline

Phase A consisted of baseline. The sessions for escape were used as baseline prior to beginning FCT. The escape condition is described in the functional analysis section above.

Phase B FCT + card

During phase B, a card was used that Gwen needed to touch in order to request a break from the task which was writing the letter "m". Gwen was presented with the option of working or taking a break. To request a break, she had to touch the card. During the break period, Gwen was allowed to play with toys. This option was presented every 30s. If Gwen engaged in aberrant behavior during this time, she was required to complete the demand with hand-over-hand guidance until the behavior ceased. She would then be presented with the option of work or break again. If during a break Gwen engaged in aberrant behavior, she was immediately required to return to work.

Phase C FCT + switch

This phase used a BigMack[®] microswitch with the recording "break please." Gwen was required to activate the button on the switch until the vocal recording was heard. As in the previous phase, Gwen was given the option of working or taking a break. The consequences for aberrant behavior were the same as in the previous phase.

Phase D FCT + choice

Gwen was presented with both modalities of communication simultaneously. When given the choice of working or taking a break, Gwen had the option of both communication modalities to request a break. The purpose of this phase was for Gwen to identify her preferred or more efficient mode of communication when requesting a break. The consequences for aberrant behavior remained the same as the previous two phases.

Results and Discussion

The results of the functional analysis showed the function of Gwen's aberrant behavior to be escape-tangible did not change. However, for the purposes of treatment, the authors chose to focus on the escape function. The results for the functional analysis can be seen in Figure 1. The mean total aberrant behavior was 44.86% (range 6-100%)

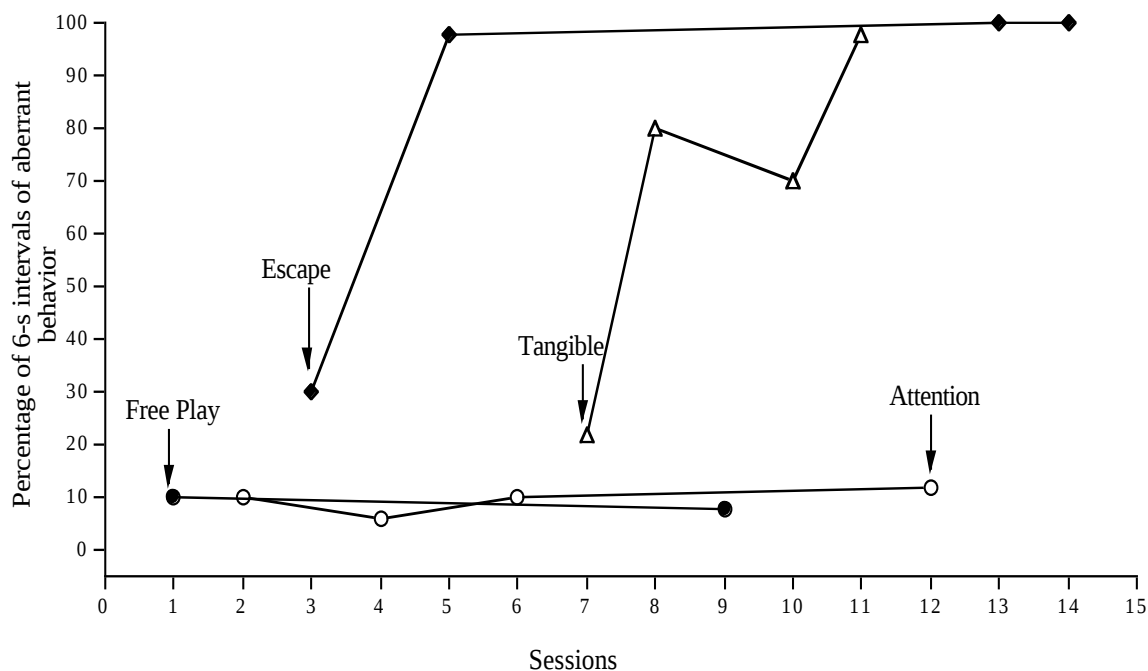


Fig 1: The percentage of total aberrant behavior for each condition within a functional analysis.

during the functional analysis. Mean aberrant behavior for free play conditions was 3.33% (range 0-10%). Mean aberrant behavior for attention conditions was 4.29% (range 0-22%). The mean aberrant behavior for escape conditions was 43% (range 0-100%). Mean aberrant behavior for tangible conditions was 70% (range 22-98%). The authors determined that since behaviors were most elevated during escape conditions, it would be best to focus initial treatment on that function. Gwen showed higher rates of aberrant behavior than mands using the card, but her rates of aberrant behavior were minimal when using the

BigMack[®]. Her mean aberrant behavior in phase A was 43% (range 0-100%). No mands occurred in phase A. Phase B had a mean aberrant behavior of 36% (range 0-72%); the mean for mands was 4.56% (range 0-16%). During phase C, the mean aberrant behavior was 4% (range 0-6%); the mean for mands was 15% (range 10-22%). Phase D had a total aberrant behavior of 2%. The switch was chosen 18% of the time, whereas the card was chosen 0% of the time. This outcome shows that the BigMack[®] was a more effective mode of communication for Gwen.

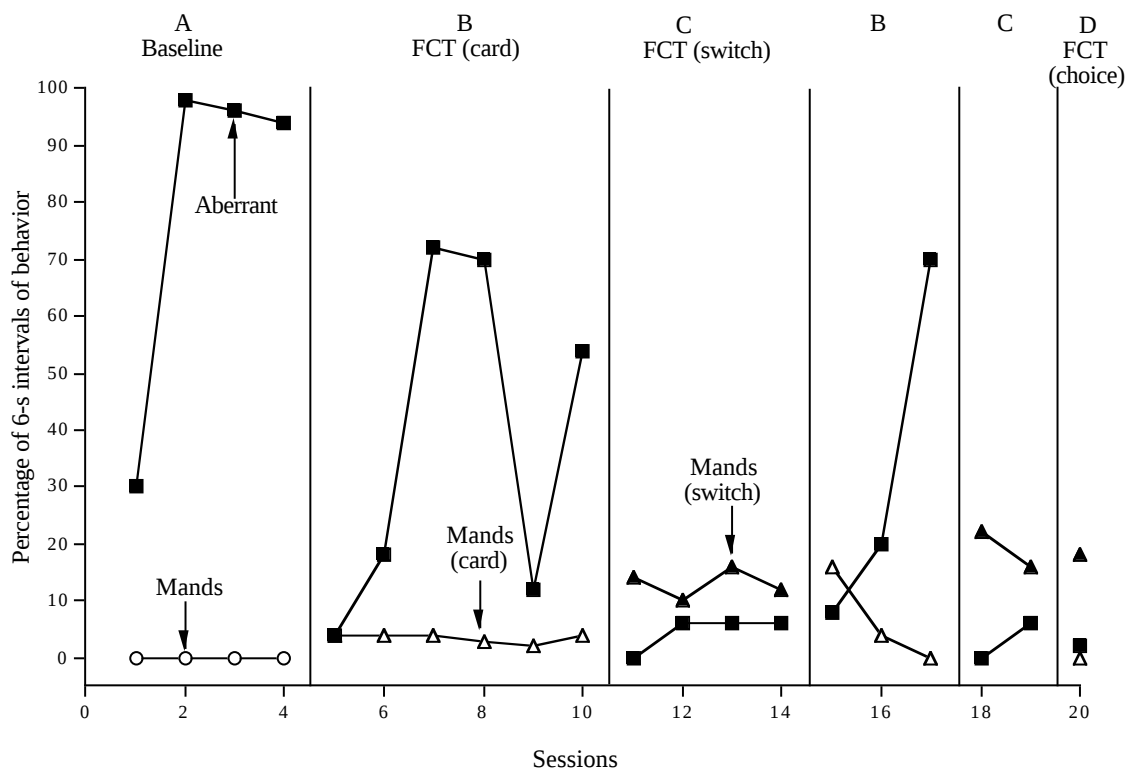


Fig 2: The percentage of manding and aberrant behavior in 6s intervals during functional communication training. Open and closed triangles are mands and closed boxes represent aberrant behaviors.

This case study is important because it shows that not everyone communicates in the same manner. Some people may communicate via sign language, oral communication, PECS, cards, or microswitches. Each individual person has a mode of communication that suits them best. For Gwen, her most successful mode of communication was a BigMack®. She was able to use this device both to avoid a task.

Strengths of this study included a low cost for materials. Also the research is a replication of the work of (4). When a clear modality of communication was determined, and a decrease of aberrant behavior occurred simultaneously.

One weakness of this study was the limited number of participants. Also, no generalization was completed in other environments. A third weakness was the lack of sessions in Phase D as a result of a time constraint. A final weakness is that only two modes of communication were compared; several other modalities such as a picture exchange system (PECS) could have been used.

About the Authors

Brittany Poff M. Ed. is a special education teacher at Richland High School in Richland, WA. Gavin Villar is a special education teacher in the state of Hawaii. Amanda Muniz, M. Ed. is a special education teacher in the Richland Public Schools, Richland, WA. Drs. Anjali Barretto and T. F. McLaughlin are both full professors in the Department of Special Education, Gonzaga University, Spokane, Preparation of the manuscript was completed by the first author as a partial requirements for a Master of Education in Special Education Functional Analysis Track from Gonzaga University under the primary direction of the third author.

References

1. Williams BF, Williams RL. *Effective programs for treating autism spectrum disorder: Applied behavior analysis models*. New York, NY: Routledge, 2011.
2. Falcomata TS, Ringdahl JE, Christensen TJ, Boelter EW. An evaluation of prompt schedules and mand preference during functional communication training. *The Behavior Analyst Today* 2010; 11:77-84.
3. Carr EG, Durand VM. Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis* 1985; 18:111-126.
4. Winborn L, Wacker DP, Richman DM, Asmus J, Geier D. Assessment of mand selection for functional communication training packages. *Journal of Applied Behavior Analysis* 2002; 35:295-298.
5. Iwata BA, Dorsey MF, Slifer KJ, Bauman KE, Richman GS. Toward a functional analysis of self injury. *Journal of Applied Behavior Analysis* 1994; 27:197-209.