

Use of a Functional Behavior Assessment to Address Tantrum Behavior with a Preschooler with Developmental Delays

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Abstract: *The purpose of the present case report was to conduct a functional behavioral assessment to assess the tantrum and non-compliant behaviors of a preschool child diagnosed with developmental delays. The FBA determined that the participant was tangible maintained and escape maintained, therefore two different interventions were implemented to address each function by teaching a more appropriate alternate behavior. The results of this study show that the combination of the communication board along with guided practice was an effective method to teach appropriate sharing behaviors and simultaneously decrease the inappropriate tantruming behaviors of a preschooler with developmental delays. In regard to the participant's escape maintained tantrum behavior, this study showed that the use of a transition object was more effective at decreasing the participant's tantrum behavior than a functional communication training and choice intervention. Strong experimental control was demonstrated for both components of the study under the reversal conditions when the participant's tantrum behavior rose to a similar percentage as displayed during baseline due to the intervention procedures not being implemented. Suggestions for practitioners were made.*

Key Words: *tantrums, whining, crying, escape, transition object, tangible, functional communication training (FCT), developmental delays, classroom research, preschool, special education, functional behavioral assessment*

Introduction

Preschool is an important time for language development, not only because of the increased exposure to vocabulary and increased sentence length requirement, but because of the pragmatic skills developed to help communicate effectively (Cook, Klein, & Tessier, 2008). When children lack the appropriate communication skills, they often resort to the use of inappropriate behaviors in order to get their needs met. Recognizing the communicative function of a child's behavior and teaching an appropriate replacement behavior to serve the inappropriate behavior's function is at the heart of functional communication training (Durand & Merges, 2001). Durand and Merges specified that inappropriate behavior is only reduced when the replacement behavior addresses the exact communicative function of the inappropriate behavior and when the new

communication demand is more effective and efficient producing the desired outcome (Hines & Simonsen, 2008).

As mentioned by Durand and Merges, the most effective treatment for each individual depends not only on the specific individual but also on the maintaining variables behind the individual's behavior. It is important that all treatment procedures take into consideration the necessary components to ensure that no reinforcement is provided for inappropriate behaviors and that instead replacement behaviors receive the maximum amount of reinforcement (Horner et. al 2002). Intervening without knowing the maintaining variables of a behavior can be problematic, as an intervention that is effective for an attention-maintained behavior might not be effective for a tangible or escape-maintained behavior (Rodriguez, Thompson, & Baynham, 2010; Ervin, Fuqua, & Begeny, 2001). There are four primary functions of behavior; attention maintained behaviors which are positively reinforced by attention for the behavior, tangible maintained behaviors in which gaining access to a tangible item as a result of the behavior reinforces the behavior, sensory maintained behaviors which provides automatic reinforcement through a sensory input, and escape maintained behaviors in which the behavior acts as a mode of escaping a demand, setting, activity, interaction, attention or sensory stimulation (Alberto & Troutman, 2012). According to Rodriguez et al., the most common maintaining variables for non-compliance amongst preschoolers are attention and escape, while Horner and Carr (1997) note that escape and tangible are the two functions most commonly observed through functional behavior assessments.

Compliance is an importance aspect throughout school and beyond (Mackay, McLaughlin, Weber, & Derby, 2001; McMahan & Forehand, 2003; Yeager & McLaughlin, 1994, 1995). In fact, as noted by Hains, Fowler, Shwartz, Kottwitz, and Rosenkotter (1986) compliance can be viewed as one of the most important school readiness skills by preschool and kindergarten teachers. Due to the potentially negative effects of noncompliance that can impact one's school-aged years and beyond, it is important to address noncompliance at a young age. Several interventions have been employed to improve the compliance of preschool students, such as a study by Yeager and McLaughlin (1995) which used precision requests and a time out ribbon procedure to improve the compliance of a preschool student, however there are currently few studies that show effective methods to treat non-compliance behaviors displayed preschool-aged children, and very minimal studies that show effective methods to decrease tantruming and whining in preschool children. Consequently, this study sought to determine an effective method to reduce a preschooler's tantrum and non-compliance behaviors based upon their specific functions.

Methodology

Participant and Setting

The participant was a four-year-old boy (born on March 20, 2008) diagnosed with developmental delays. He had significant delays in the area of communication, which impacted his ability to use communication strategies to interact effectively with others, especially in terms of requesting turns from peers and using appropriate verbal communication to get his needs met. The participant also had documented delays in his expressive language skills, particularly in terms of requesting and protesting appropriately, which has interfered with his skill acquisition and ability to follow through with teacher requests. Along with his communication delays, the participant had also been diagnosed with Hypotonia, auditory speech disorder, delayed motor coordination, and sensory integration dysfunction. To aid with the participant's sensory integration dysfunction, he wore a Stabilizing Pressure Input Orthosis suit (SPIO) under his clothing, which provided deep pressure to his entire body aimed at providing a calming effect on his sensory system. He also participated in a Therapeutic Listening Program, in Wilbarger Deep Touch Pressure activities, in Wilbarger Oral-Motor activities, and in sensorimotor play breaks to help with his sensory deficits. The participant began wearing glasses in February 2012 to aid with his eyesight.

Prior to this study, the participant tended to be very compliant when engaging in a preferred activity or in activities on his own terms, however whenever an outside request was placed on the participant, especially a request to engage in a non-preferred activity, the participant frequently would engage in tantrum behavior. Specifically, when a request was placed on the participant prior to this study, he often would whine, scream and/or attempt to escape the request by going to the cubby area in the classroom. In response to those non-compliance behaviors, the classroom teacher aimed one of the participant's yearly IEP goals towards increasing his compliance. Specifically the participant's IEP goal stated that he will request/protest objects and activities from 30% accuracy to 90% accuracy using appropriate voice and expressive language skills. Another behavior the participant struggled with was sharing, which as stated on his IEP the participant previously took turns with peers with adult support with only 30% frequency. If he was required to share an item that he had with someone else, he frequently would engage in whining or screaming, and would ultimately remove himself from the activity if he did not get his way. If someone else had a toy that he wanted access to, the participant would frequently grab toys from others hands and engage in whining and screaming if he did not get the toy. Consequently one of the participant's yearly IEP goals, to be completed by March 2012, stated that the participant would take turns with peers with adult support, from 30% to 90% of the time.

This study took place in a self-contained special education preschool classroom at an elementary school in the Pacific Northwest. There were seven other students between the ages of 3 and 4 with a range of developmental delays present in the classroom throughout the study. Also present in the classroom at the time of the study, was one lead teacher, two instructional assistants, and one student teacher. Since instruction was embedded into the typical classroom routine, the exact location of instruction varied depending upon where the participant was in the classroom. The

first author was a college student that was completing the student teaching component of her special education degree in the self-contained preschool classroom at the time of the study.

Materials

A communication board was used to teach the target skill of sharing. The communication board (Appendix A) was created by the first author and the classroom teacher (fourth author) to be implemented with the participant. The communication board was a laminated orange piece of paper that stated “Can I have ___?” on the top half. On the bottom half, there were three pictures representing the possible answers to the question attached to the paper with Velcro: yes, no, and in a minute. Under each of those pictures was a picture displaying how to appropriately respond to the three different responses. The first picture was a happy face with the word ‘yes’ written below it. Underneath the ‘yes’ picture was a picture icon for someone saying thank you, with the words ‘thank you’ written below it. The second picture was a straight face with ‘no’ written below it. Under the ‘no’ picture was a picture icon for making a new choice, along with the words ‘make a new choice’ written below it. The third picture was an in a minute symbol with ‘in a minute’ written below it, and a picture of a timer with the words ‘set a timer’ underneath it. Also used for this target skill was a purple “first ____, then ____” picture communication board (Appendix B). In the blank spots were pieces of Velcro, so that a picture of the participant or first author could be velcroed to the spot depending on whose turn it was.

For the escape intervention, a picture communication board that had the words “I want” followed by piece of Velcro was used (Appendix C). Another choice board which had an “I” picture icon, followed by a “want” picture icon, followed by two pieces of Velcro, was also used (Appendix D). Various other picture icons, such as a “break”, “circle”, “choice” and “snack”, were attached to the Velcro depending on the activity occurring throughout the session. A “no whining” sign (Appendix E) was also used throughout the study as a visual prompt for the participant. With the second intervention package, the participant had access to a transition object, which consisted of one of a variety of small toys such as animal figurines or foam balls. The exact transition object varied depending on the day and based on the preference of the participant.

Each session was video taped using an iPhone camera and later reviewed while listening to a 6-second interval recording and recording on a data sheet (Appendix F). An auditory timer was also used throughout the study.

Dependent Variable

The dependent variable in this study was the amount of tantruming behavior. Tantrum behavior was defined as continual high-pitched vocalizations or shouting at a volume above normal level.

Data Collection and Inter-observer Agreement

The data on instruction was collected using a 6 second (s) interval data recording procedure. The 6-second interval recording continuously stated every 6s and a slash was recorded across the “T” in the corresponding box if the participant engaged in whining at any point during the 6 seconds. If the participant did not engage in whining throughout a 6-second period, the corresponding box was left blank. The percentage of whining behavior was then calculated by dividing the total number of 6-second intervals with occurrences of whining by the total intervals of the session. By looking at the data the first author was able to tell if instruction was effective based on a decreasing percentage of whining behavior, or if instruction was ineffective based on an increasing percentage of whining behavior.

Inter-observer agreement was collected independently by either an instructional assistant or by the classroom teacher (fourth author), both of which were previously briefed on the scoring process. Inter-observer agreement data was taken at least one in each phase of the study, with a total number of 28 out of 84 session (33%) with inter-observer agreement. The mean agreement score was calculated by dividing the number of agreements by the total number of agreements and disagreements, and then multiplying that number by 100 to get the mean agreement percentage. The mean agreement was calculated in two ways, once by including non-occurrences as agreements and once by only counting occurrences. The percent reliability including non-occurrences was 97% while the percent agreement including only occurrences was 95%.

Experimental Design and Conditions

For intervention on whining for a tangible function, an ABAB single case design (Kazdin, 2011) was used in which the first author went from baseline to intervention to baseline then back to intervention. For the purpose of decreasing whining for an escape function, a component analysis was used in which once the treatment package showed to be effective, small parts of the treatment package were removed to determine what part of the treatment package was the most effective. As a result, the design of instruction on the second instruction target was ABCDAD in which ‘A’ was baseline, ‘B’ was a functional communication training + choice treatment package, ‘C’ was a functional communication training + choice + transition object treatment package, and ‘D’ was transition object alone.

Procedures

Functional behavior assessment. Initially a functional behavior assessment was conducted to determine the function of the participant’s tantrum behavior. There were four different types of sessions throughout the functional behavior assessment; tangible, escape, attention, and free play. The tangible sessions took place during 5-minutes of free play when the participant was engaged in preferred items. Throughout the tangible sessions, the first author took the preferred item out of the participant’s hands while stating “my turn”. The first author then played with the item until the participant engaged in the target behavior. Once the participant engaged in tantrum

behavior, the first author returned the item to the participant while stating “okay, your turn”. The first author then waited approximately 30 seconds and repeated the same procedure multiple times until the 5-minute session was over. During the tangible sessions, the participant was given complete attention and no demands were placed on him.

The escape sessions of the functional behavior assessment took place during 5-minutes of centers, and began after the participant had a few minutes to engage in a preferred activity. During the sessions, the first author approached the participant and told the participant that it was “time to go work”. The first author then attempted to direct the participant to the work area. If the participant began to engage in tantruming behavior, the first author stated “okay, no work” and allowed the participant to return back to the preferred activity he was previously engaged in. The first author then waited approximately 30 seconds and approached the participant to repeat the procedure. The first author followed this same procedure throughout the entire 5-minute session. During escape sessions, the participant was given attention and access to any tangible items of his choosing.

The attention sessions took place during 5-minute sections of circle when the participant was seated among his classmates on the carpet. Throughout the sessions, the participant was given no specific attention unless he engaged in tantruming behavior. Circle was carried on as normal, and minimal attention from the classroom teacher (such as collecting the participant’s name tag) was allowed. When the participant engaged in tantruming behaviors during the sessions, he was given the complete attention of the first author. Once he stopped engaging in tantrum behavior, the first author turned away from the participant and did not provide him with any attention until the target behavior occurred again. During attention sessions there were no demands placed on the participant and he was given access to all tangible items.

The free play sessions took place in 5-minute increments throughout the day when no demands were placed on the participant, and access to all tangible items and attention was provided. During these sessions, the first author videotaped the participant in his natural interactions in the classroom.

Baseline. Based on the functional behavior assessment, escape and tangible were the two functions targeted throughout the remainder of this study. The data from the functional behavior assessment was used as baseline data for tangible and escape.

Communication board. For intervention to decrease his tantrum behavior for tangible functions, a communication board was developed by the first author and the classroom teacher (fourth author). The communication board was initially introduced to the participant through a social story that explained how to ask for a toy, and what to do based on the response stated. The social story was accompanied by pictures and was told while the use of the communication board was being modeled. The social story went as follows; Chase wanted to use Rose’s dog. Chase asked,

“Can I have the dog?” Rose said, “yes”, so Chase said “thank you”! Later Chase wanted Luke’s phone. Chase asked, “Can I have your phone?” Luke said “no” so Chase made a new choice. Later in the day, Chase wanted Jake’s toy car. He asked, “Can I have that car?” Jake said “in a minute” so Chase set a timer and waited for it to go off.

The communication board was modeled and practiced with direct instruction in which the first author approached the participant and gave him a minute to play with a toy, with the visual and verbal prompt “first (participant’s name) turn, then Lauren’s (first author) turn”. When the timer went off at the end of the minute the toy was taken away from the participant while the first author reminded the participant that now it was her turn, but he could get the toy back if he asked appropriately. If the participant engaged in tantrum behavior upon the toy being taken away, the first author reminded the participant that he needed to stop whining and ask for the toy in his “big boy” voice if he wanted the toy back. If the participant asked, “can I have ___?” the first author alternated between three responses of “yes”, “no”, and “in a minute”. If the first author responded “yes”, praise was given for asking appropriately, the toy was handed to the participant and the participant was reminded to say “thank you” with verbal prompts and by use of lifting up the flap on the communication board. He was then shown the “first (participant’s name), then Lauren’s” picture communication board and told that when the timer went off it was the first author’s turn with the toy. If the first author responded “no”, the participant was reminded to lift up the ‘no’ flap in order to see the picture icon that showed ‘make a new choice’. The first author then presented the participant with two new choices, and aided him in making a new choice. Initially the two items being offered to the participant as an alternate choice were very highly preferred items to ensure a smooth transition towards accepting the answer ‘no’, however gradually the first author faded the presentation of two new choices and prompted the participant to become independent in choosing a new choice. If the first author responded “in a minute”, the participant was prompted to lift up the ‘in a minute’ flap to be reminded to set a timer. The participant was then given a timer and requested to press start, and then was reminded that first it was Lauren’s turn, and then it was his turn. If the participant engaged in tantrum behavior while the timer was going, the first author stopped the timer and told the participant that the timer had to stop when he was whining. At the end of the timer, the participant was praised for waiting and given a turn with the toy. The same procedure was then repeated multiple times with the first author responding with alternating responses.

Guided practice was also to teach the participant how to appropriately use the communication board when engaging in activities with peers. The first author ensured to have the communication board visible to the students engaging in the activity, and prompted the students as necessary to aid them to use the communication board in order to ask for a turn or a toy. The amount of involvement by the first author differed depending on the peers that were involved in the interaction. For example, if the participant was engaging with a verbal peer that also understood how to use communication board, all the first author needed to do was prompt the

initial use of using the board to get the student to use the board in order to ask for a turn. However, if the participant was engaging with a peer that did not quite grasp the concept of using the communication board, the first author prompted each step of the process from asking the question, to the responder pointing to the answer while verbally stating their response, to lifting up the flap to know how to respond appropriately, all the way to following through with appropriately responding (by either prompting the student to say “thank you”, presenting two new choices of toys that the participant or peer could play with as alternate choices, or by helping the participant set a timer and prompting them to wait quietly for their turn).

“Check-ins” were also intermittently interspersed throughout the lessons to ensure that the participant was able to understand how to use the communication board appropriately. During these sessions the first author had the participant sit down at a table next to her while she was holding a preferred toy visible to him, and then asked the participant what he should do if he wanted that toy. Praise was given to the participant for verbally stating “can I have that toy” or “can I have ___”, with the blank being the name of the toy. The first author then asked, “What happens if I say yes?” “what happens if I say no?”, and “what happens if I say in a minute?”. Praise was given to the participant for verbally stating “thank you”, “make a new choice”, and “set a timer” corresponding to the right question. The first author then asked the participant if he wanted a turn with the toy, and guided the participant through practice with the communication board.

Functional communication training + choice. The initial intervention aimed at decreasing his tantruming behavior in an attempt to escape demands focused on functional communication training. The first author approached the participant while he was engaged in a preferred activity and gave him a one-minute warning until it was time to work. When the timer went off, the first author directed the participant to the work area. If the participant complied with the directions given, the first author provided him with specific praise and high fives. If the participant attempted to elope or engaged in tantruming behavior, hand over hand assistance was used as necessary to get the participant to engage in the demand requested. The first author did not engage in any conversation with the participant, except for asking the participant if he wanted to work or wanted a break and prompting the participant to ask for a break if he did not want to do work. If the participant complied with directions, high fives and specific praise were given. If the participant engaged in tantrum behavior or attempted to elope, the first author reminded him that he needed to stop whining and ask for a break. If the participant continued to tantrum without making a choice between work or break, the first author made the choice for the participant by stating “okay, then I choose work” and showed him the “first work, then break” picture communication board. The first author then used hand over hand assistance in order to get the participant to comply with directions. After about a minute, the discriminative stimulus of the choice between work and a break was given again and the same procedure was followed and repeated until the participant completed the work task. If the participant appropriately asked for a

break, the first author praised him for asking appropriately and told the participant that he needed to complete a short task before taking his break. Once he completed the task, the participant was given a one-minute break either in the beanbag, the cubby area, or the stairs. Once the one-minute break was over, the participant was required to return to the work area to finish the task. While working, the participant was randomly given the opportunity for a break, and the same procedure noted before was followed.

Functional communication training + choice + transition object. Starting with session #34, a new intervention component was implemented which added a transition object to the functional communication + choice intervention. With this additional component of the intervention package, the first author anticipated times in which the participant was going to whine and/or was not complying, as well as approached him in times when he was already engaging in whining behavior, and gave him the choice of taking a transition object with him to complete the demand or taking a break without any access to a preferred item. If the participant chose the transition object, he was reminded that whining was not allowed and was then given the preferred item. If the participant whined or did not comply at any point while holding a transition object, the transition object was taken away and he was told that if he wanted it back he needed to stop whining and/or do what was asked. If the participant chose break, he was asked if he wanted a break in the beanbag, cubby area or on the stairs and given a one-minute timer to press start. When the one-minute timer went off, the first author approached the participant and gave him the option of another break or taking the transition object with him to do the demand previously requested. If at any point the participant continued to engage in tantrum behavior and would not choose either break or transition object, the first author choose a break for the participant, set a one-minute timer and re-approached the situation with him after one-minute.

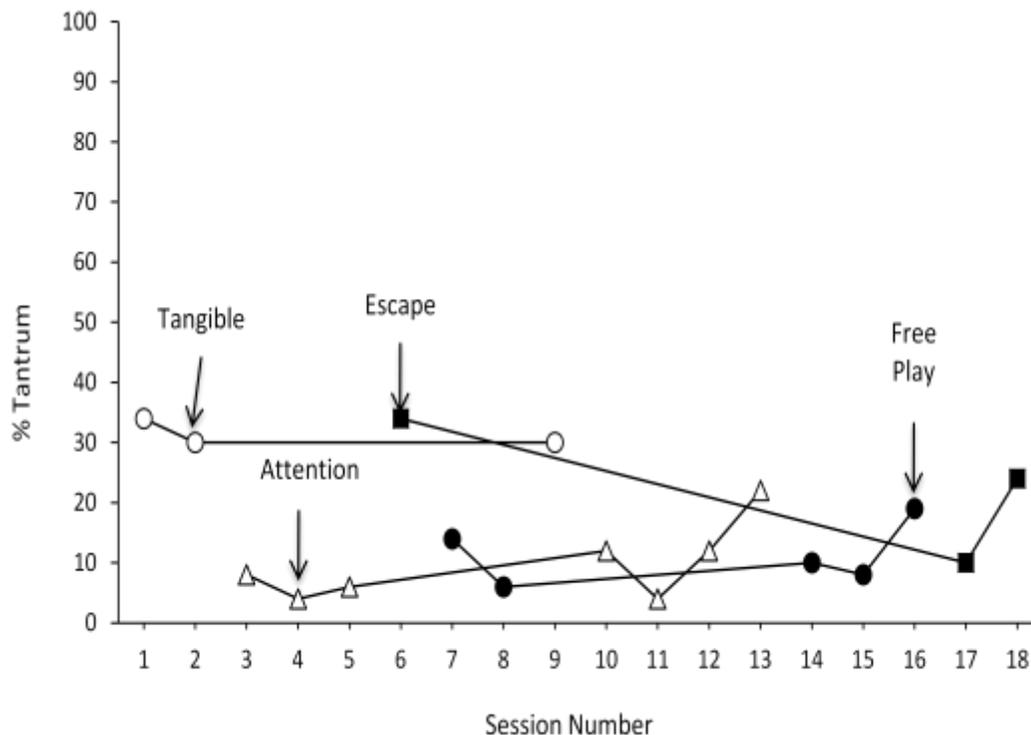
Transition object. In order to conduct a component analysis, the first author removed the functional communication training and choice components of the intervention package leaving the transition object as the sole intervention. With this intervention, the first author anticipated times in which the participant was about to whine and/or be non-compliant, as well as approached him in times when he was already engaging in tantrum behavior in order to present him with two transition objects for him to choose from. When the participant chose a transition object he was reminded that he needed to listen to teachers without whining if he wanted to keep the transition object. If the participant tantrumed at any point while having access to the transition object, the transition object was taken away and the participant was told that if he wanted the toy back he needed to stop whining and/or do what was requested. The first author used a “no whining” sign along with verbal prompts to remind the participant to not engage in tantrum behavior. If the participant continued to tantrum or be non-compliant, the first author told the participant that he needed to take a break, set a 1-minute timer, walked away from the participant and then re-approached the situation with the participant when the timer went off.

When presenting the option of a transition object, the first author always had one item in each hand (two toys total) to increase the probability that the participant would be interested in one of the transition objects offered.

Findings

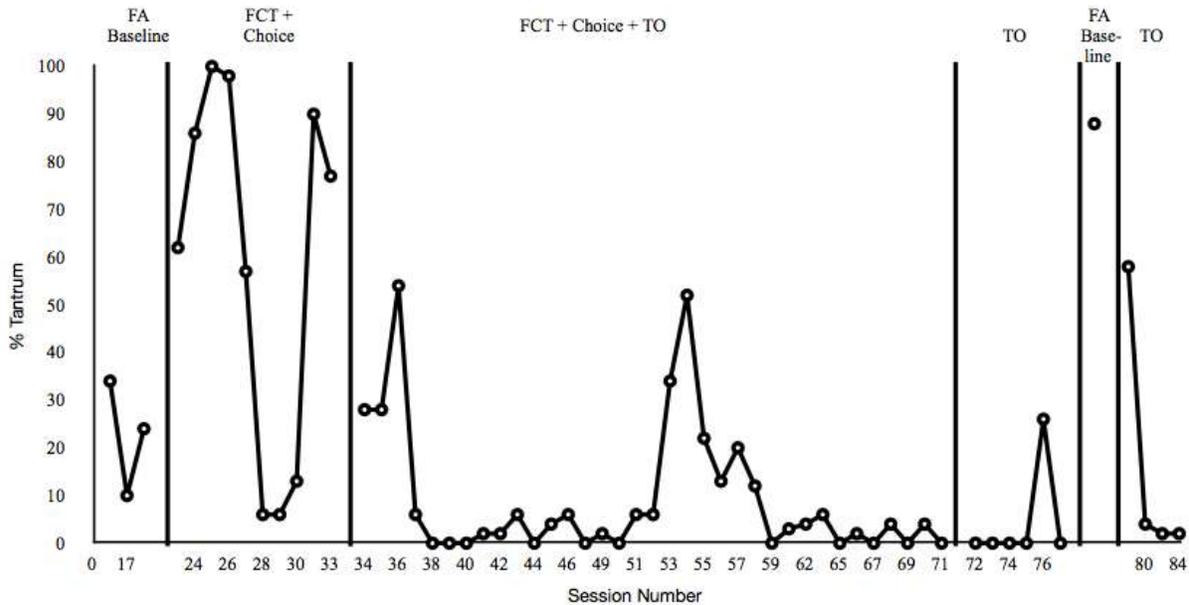
The results of the functional behavior assessment are shown in Figure 1. The outcomes show that tantrum behavior was maintained by both tangible and escape reinforcers. Specifically during tantrum behavior was displayed at an average 31% tangible sessions and at 23% for the escape sessions. The results of the implementation of the communication board are shown in Figure 2. With implementation of the communication board, the participant's tantrum behavior decreased to an average of 6%. During the return to baseline for the tangible condition the participant tantrumed during 24% of the session. With the re-implementation of the communication board, the participant's tantrum behavior returned to 4% of the session.

Figure 1. The percentage of tantrum behavior during functional behavior assessment.



The results of the escape conditions are displayed in Figure 3. The participant engaged in tantrum behavior for an average of 23% during the escape baseline conditions of the functional behavior assessment. The percentage of the five-minute sessions that the participant engaged in tantrum behavior increased to an average of 60% as a result of the functional communication training + choice intervention. Upon the addition of the transition object to the intervention package, the participant's tantrum behavior decreased to an average of 9%. In the sessions following the removal of the functional communication training and choice components of the intervention package, the participant tantrumed during an average of 4% of the sessions. In the reversal condition, the participant tantrum behavior increased to 88% of the session. After the re-implementation of the transition object, the average of the participant's tantrum behavior across the four remaining sessions decreased to an average of 16.5%.

Figure 3. The percentage of tantrum behavior across escape sessions.



Conclusions

The results of this study show that the combination of the communication board along with guided practice is an effective method to teach appropriate sharing behaviors to a preschooler with developmental delays. Specifically, the results showed that the communication board greatly reduced the participant's tantrum behavior, from an average of 31% during baseline to an average of 6% during the intervention phase, by teaching him an appropriate alternate response. Strong experimental control was demonstrated throughout the tangible reversal session, when the participant's tantrum behavior rose to a similar percentage as in baseline when he did not have access to the communication board. This demonstrates that the communication board was significantly effective in decreasing his tangible-maintained tantrum behavior. It should be noted that during the reversal condition the participant frequently appropriately asked, "can I have your toy?" and was appropriately waiting for his turn with a toy for a large part of

the session. This showed that the participant understood and acquired the appropriate use of the communication demand, though he still engaged in whining without the communication board. During the “check-ins” between the participant and the first author, the participant’s progression towards mastery of the target skill was demonstrated in his response to the prompts “what do you do if you want my toy?” and “what do you do if I say yes/no/in a minute?” Based on the results, the communication board should continue to be implemented independently with the participant along with peers through additional guided practice to promote maintenance and generalization of the target skills. This will provide opportunities for maintenance and generalization of the target skill of appropriately requesting for a toy and appropriately reacting to various responses. To promote generalization to varying environments with a variety of peers, the participant should be prompted to ask and react in the same fashion that he has been taught to do with the communication board in other play environments. The next step would be to eliminate the verbal prompts, followed by the visual prompts, so that ultimately the participant will be able to request for items and respond appropriately without engaging in tantrum behavior. In order to fade the visual prompts, the first author, teacher, and/or parent should verbally prompt the participant to ask for the toy and remind him what to do depending on the peer’s response. Once the visual prompts are faded, the verbal prompts should also gradually be faded, ultimately leading to the participant performing the target skills independent of any visual or verbal prompts.

The results of this study also show that the transition object was the most effective treatment method implemented to aid the participant in appropriately complying with demands without tantruming. Specifically the results show that the functional communication training + choice condition increased the participant’s tantrum behavior, however with the addition of the transition object to that previous intervention package his tantrum behavior greatly decreased. His inappropriate behaviors then continued to remain minimal once the transition object was implemented independently of any other treatment component. The reversal demonstrated strong experimental control in that without access to a transition object, the participant tantrumed when being requested to complete an art activity. Once the first author gave the participant a transition object at the end of the 5-minute session, he was able to calm himself down and then complete the entire art activity without tantruming. It should be noted that the percentage of tantrum behavior in the intervention session immediately following the reversal was elevated as a result of the participant needing time to calm down after becoming so agitated in the reversal session. Based on the results, transition objects should be employed with the participant in the classroom in the same fashion. Towards the end of the study the participant began to be picky about the transition object that he has access to, therefore it is recommended that in the future the amount of transition objects available should be limited each day. With this new component of the intervention, the participant should be given the choice of two transition objects when asked to comply or stop whining, and if he does not want either of the choices then he should be required to complete the task without any access to a transition object. Hand over hand assistance should be used to get him to comply if he continues to tantrum or is non-compliant. With this new

component of the intervention, the participant's tantrum behavior should be ignored while still using hand over hand assistance to get him to complete the task.

Suggestions and Recommendations

The results of this study support the growing practice of conducting functional behavior assessments in classroom settings, rather than in isolated clinic settings. While the first author believes that the results of the functional behavior assessment were accurate for the escape, tangible, and free play conditions, it is believed that there was a flaw in the design of the attention sessions. The flaw of the design was that minimal attention from the classroom teacher (fourth author) was still provided to the participant during attention sessions, in terms of taking his name tag away, giving him necessary objects, and allowing the opportunity for him to respond to circle time questions. This led to a misrepresentation of the percentage of attention-maintained behavior. If this study is to be replicated, it is recommended that the attention sessions be conducted during a different period of the day, such as free play or centers, when it is more feasible for the participant to be completely ignored.

The present outcomes provide some additional evidence that a teacher can improve the compliance of a preschooler. This replicates prior research employing precision requests with and without consequences (Mackay et al., 2001; Yeager & McLaughlin, 1994) and precision requests with a time out ribbon (Yeager & McLaughlin, 1995).

Future research should continue to experiment with functional behavior assessments in preschool classroom settings to determine effective methods for decreasing tantrum behavior and non-compliance in children with developmental delays. While implementation of the communication board with all the children in the classroom showed positive effects on the children's sharing, extended research should continue to explore the effects of the communication board in other classroom and play sessions in order to document its effectiveness. Additional research should also further investigate the effectiveness of the use of transition objects across larger samples and in varying environments.

Acknowledgement

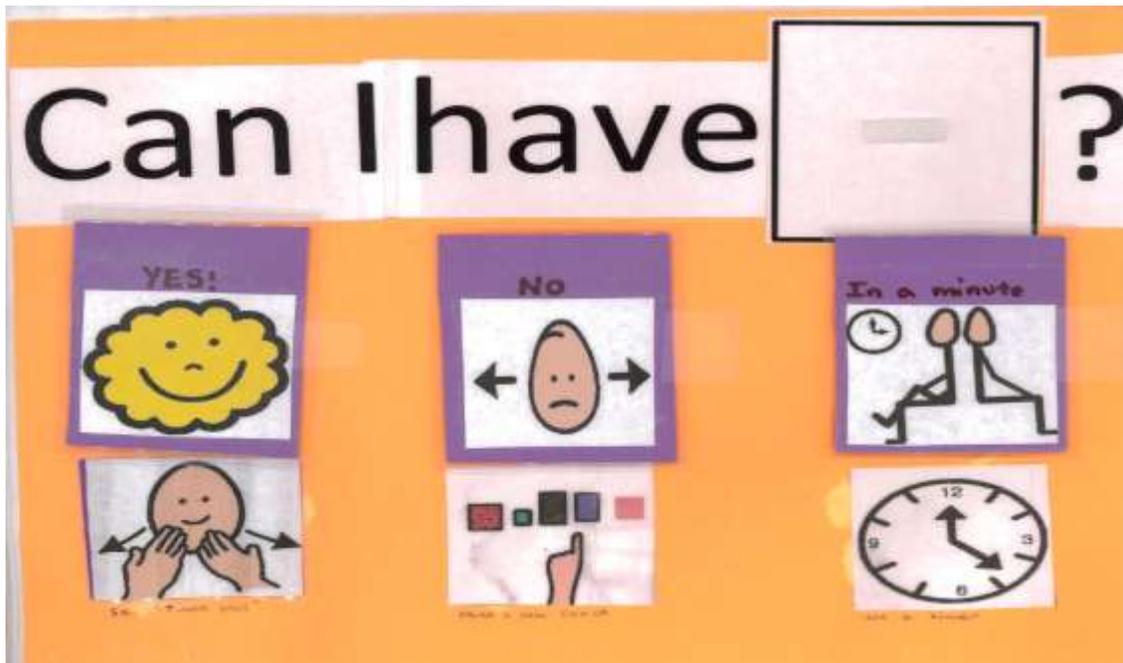
This research was completed in partial fulfillment for an Endorsement in Special Education from Gonzaga University and the State of Washington. The first author would like to thank the participant and the classroom teacher for their cooperation. The first three authors are in the Department of Special Education at Gonzaga University in Spokane, WA. Requests for reprints should be sent Lauren Worcester, Department of Special Education, Gonzaga University, Spokane, WA 99258-0025 or via email at lworcester@zagmail.gonzaga.edu. Ms. Worcester is an adjunct professor in the Special Education in the Functional Analysis Track at Gonzaga University, Spokane, WA and also works for the Northwest Autism Center in Spokane, WA.

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Appendix A

Communication Board



Appendix B

“First, Then” picture communication board



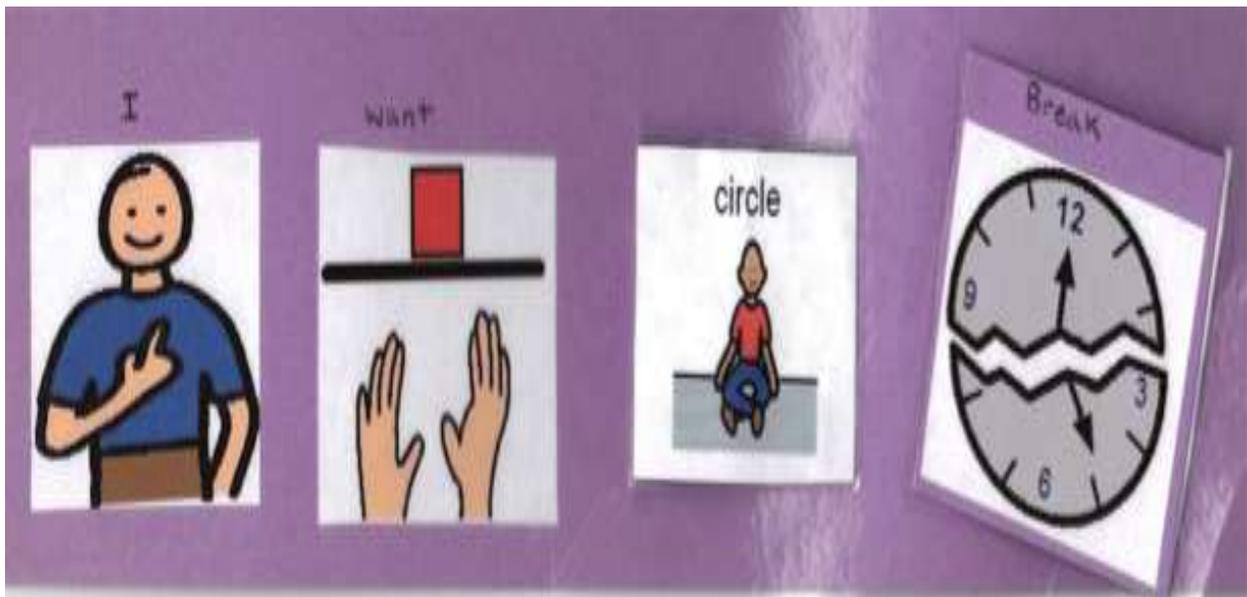
Appendix C

“I want” board



Appendix D

“I want” picture communication board



Appendix E “No whining” sign



Client Name: _____

Date: _____ Condition: _____ Session #: _____

P/R: _____ P/R: _____

	6	12	18	24	30	36	42	48	54	60	
1	+ A - E O	+ A - E O	+ A - E O	- A - E O	- A - E O	+ A - E O	1				
2	- A + E O	- A + E O	- A + E O	+ A + E O	+ A + E O	+ A + E O	- A + E O	- A + E O	+ A + E O	+ A + E O	2
3	+ A - E O	3									
4	- A + E O	- A + E O	+ A + E O	- A + E O	- A + E O	- A + E O	+ A + E O	+ A + E O	+ A + E O	+ A + E O	4
5	- A + E O	- A + E O	+ A + E O	- A + E O	- A + E O	+ A + E O	- A + E O	- A + E O	+ A + E O	+ A + E O	5

Date: _____ Condition: _____ Session #: _____

P/R: _____ P/R: _____

	6	12	18	24	30	36	42	48	54	60	
1	+ A - E O	+ A - E O	+ A - E O	+ A - E O	- A - E O	+ A - E O	+ A - E O	- A - E O	+ A - E O	+ A - E O	1
2	- A + E O	- A + E O	+ A + E O	- A + E O	- A + E O	+ A + E O	+ A + E O	- A + E O	+ A + E O	+ A + E O	2
3	+ A - E O	+ A - E O	+ A - E O	- A - E O	+ A - E O	+ A - E O	+ A - E O	- A - E O	+ A - E O	+ A - E O	3
4	- A + E O	- A + E O	+ A + E O	- A + E O	- A + E O	+ A + E O	+ A + E O	- A + E O	+ A + E O	+ A + E O	4
5	- A + E O	- A + E O	+ A + E O	- A + E O	- A + E O	+ A + E O	- A + E O	- A + E O	+ A + E O	+ A + E O	5

+ Appropriate
- Problem
A Aggression
E Elopement
T Tantrums
O Other (to be designated)

Appendix F.
Data Collection Sheet.