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An Alternative to Escape Extinction: The Effects of the Wait Out Procedure on Noncompliance

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An Alternative to Escape Extinction: The Effects of the Wait Out Procedure on
Noncompliance

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Abstract

The purpose of this research was to replicate a study by Ward, Parker, and Perdikaris (2017), which focused on a reactive substitute to conventional forms of escape extinction for primarily escape-maintained noncompliance behavior through using a wait out procedure, as well as to add to the literature for reactive procedures aimed to decrease noncompliant behaviors for students with disabilities in a school setting. This experiment included a multielement graphical design that contained partial-interval data of noncompliance behavior in baseline, and in two interventions to determine if there was a change in noncompliance behavior following the introduction of each intervention; the wait out procedure when the participants were allowed to leave the workspace, and the wait out procedure when they were not permitted to leave the workspace. Participants in the study included three male students ranging from elementary to high school who were diagnosed with ASD, Speech-Language Impairment, and MD that had escape-maintained noncompliant behaviors and attended a private school for children with problematic behaviors. The results demonstrated a decrease in one of the participants' noncompliance behaviors, and no significant decrease in the second and third participants'. There were no clear differences between the participants' noncompliance behavior in each different intervention. Future recommendations for research include implementing these procedures with participants with less severe problem behaviors and more teacher-pleasing behaviors, including the participants' teacher(s) in the intervention process, conducting FBAs and FAs to better understand the functions of the participants' noncompliance prior to intervening, conducting research in a different setting and/or separate rooms within the school, and including additional dependent variables.

Introduction

Applied Behavior Analysis

The following section discusses the essential definitions, principles, purposes, and operations of Applied Behavior Analysis (ABA) practices. ABA is defined as a science that systematically employs the principles of behavior to improve socially significant behavior with the use of investigation to determine variables responsible for behavior change (Cooper, Heron, & Heward, 2007). Behavior is defined by the activity of a living organism that occurs when there is an interactive condition between the organism and its surrounding environments, involving movement of some part of the organism (Johnston & Pennypacker, 2009). Baer, Wolf, & Risley (1968) define control as comparing rates of responding both in the absence and presence of a contingency, and then demonstrating that the absence and presence can be changed on and off, or up and down. Behavior analysts often examine an organism's behavior in terms of the three-term contingency, referring to the antecedent, or the stimulus that occurs directly before the behavior, the behavior, which is what the organism itself does, and the consequence, which is the response that directly follows the behavior (Cooper et al., 2007). Another name for the three-term contingency is the ABCs of behavior analysis, which is discussed as being the basic unit of analysis when examining operant behavior (Glenn, Ellis, & Greenspoon, 1992). Operant behavior refers to any behavior whose future occurrence is determined predominantly by its history of consequences, and is selected, shaped, and maintained by the consequences subsequent to it previously (Cooper et al., 2007).

Control of behavior offers a great benefit to science in that it can lead to changes behavior in valuable ways (Cooper et al., 2007). The fundamental product of ABA

research for changing behavior are functional relations, which occur when well-controlled experiments disclose that a particular change in an event, or a dependent variable, can reliably be produced by certain manipulations of another event, or an independent variable, and that the change in the dependent variable was not likely to be the result of other extraneous, or confounding variables (Cooper et al., 2007). There are four widely known control procedures in the field of ABA, including positive reinforcement, negative reinforcement, positive punishment, and negative punishment.

Reinforcement refers to a situation when a stimulus event follows a behavior closely in time, and the future occurrence of that type of behavior increases in related conditions as a result (Cooper et al., 2007). When a behavior has been immediately followed by the presentation of a stimulus, and that behavior occurs more frequently in the future as a result, positive reinforcement has occurred (Cooper et al., 2007). Positive reinforcement is known as the most significant and widely implemented principle of behavior analysis. On the other hand, when a behavior occurrence increase as a result of past responses that have led to the removal of a stimulus, negative reinforcement has occurred (Cooper et al., 2007).

The term punishment refers to a situation when a behavior is followed by a stimulus change that reduces the future occurrence of that type of behavior in similar conditions (Cooper et al., 2007). When the presentation of a stimulus, or an increase in the intensity of a previously presented stimulus that directly follows a behavior results in a reduction in the occurrence of that behavior, positive punishment has occurred (Cooper et al., 2007). Negative punishment refers to the termination of an previously presented stimulus, or a decrease in the intensity of a previously presented stimulus directly

following a behavior that results in a reduction in the future occurrence of the behavior (Cooper et al., 2007). The field of ABA practices the principles of operant behavior that aim to observe, assess, control, and maintain behavior. These procedures are implemented in order to either increase or decrease the future frequency of a behavior.

Functions of Behavior

The following section focuses on the most prevalent functions of behavior in the field of ABA as well as how those functions are determined and how the revealed functions lead to decisions about which treatments to implement. In addition, this section includes research on functional behavior assessments (FBAs), and research on functional analyses (FAs). The researcher plans to review and/or conduct FBAs in the current study, but will not be conducting an FA. Research on FAs is included in the current section in order to explain their purpose and research on determining functions of behavior.

This section includes research signifying the four principal functions of behavior. As deemed by functional analyses in the research base, there are four main functions of behavior in ABA including attention, escape, automatic reinforcement, and tangible (Iwata, Dorsey, Slifer, Bauman, & Richman, 1982; Mace & West, 1986). Iwata, et al. (1982) implemented operant methodology to examine functional relationships between self-injury and environmental events. The authors found that participants' self-injury served the possible functions of social attention from others, automatic reinforcement through self-stimulation, and escape from demands by terminating undesirable situations (Iwata et al., 1982). Mace and West (1986) analyzed demand conditions associated with reluctant speech, and were the first to introduce a condition to assess the functions of tangible reinforcement on problem behavior, using tangible items. The tangible function

involves positive reinforcement in the form of a preferred item or activity, such as toys, without physical or verbal attention (Dixon, Vogel, & Tarbox, 2012).

Functional Behavior Assessments. This section includes research on definitions and applications of FBAs in applied settings. The Office of Special Education Programs (OSEP) within the United States Department of Education describes FBAs as detecting the function of, or purpose for a child's behavior (OSERS, 2013). This process incorporates directly observing a variety of factors that contribute to individual children, including social and environmental elements, as well as formal assessments (OSERS, 2009; OSEP, 2013). The Virginia state regulations added to the federal definition of FBAs, including that the FBA process determines the essential cause or functions of a child's behavior that hinders the learning of a child with a disability, or the learning of the individual's peers, which may incorporate a review of prior data or the development of new data (VDOE, 2015).

According to Gable, Park, and Scott's (2014) review of research with FBAs, their implementation in applied settings has had a positive impact on student behavior. The main objective of FBAs is to identify the chief factors associated with the behavior being measured (Gable et al., 2014). FBAs are considered to be a collaborative problem-solving process that is more useful when at least one team member has an understanding of the field of ABA (Gable et al., 2014).

Functional Analyses. This section includes research and common definitions of F's in the field of ABA. An instructor conducts an FA by manipulating the environment of the individual and observing the effect the manipulation has on the student's behavior; an FA is a possible component of an FBA (Alberto & Troutman, 2017). According to

Neef and Iwata (1994), the functional analysis model of assessment involves direct observation and analysis of the reinforcing functions of specific responses that occur in an individual's repertoire. Functional analysis is a term that refers to the observation of "cause-and-effect relations" between environment and behavior (Skinner, 1953). Hanley et al. (2003) stated that the term function analysis refers to the relations between behavior and environmental events that are exhibited in the context of learning about how the behavior operates on the environment.

Research has determined that the four crucial functions of behavior are attention, escape, automatic reinforcement, and tangible (Iwata et al., 1982; Mace & West, 1986). FBA processes include observation and analysis of ABC's and assessments of an individual's behavior in order to determine the function(s) of their behavior (OSERS, 2009; OSEP, 2013; VDOE, 2015). FAs may be included in a FBA process, and involve manipulating variables in the environment in order to examine the effects it has on behavior, in an attempt to change behavior (Alberto & Troutman, 2017).

Matching Treatment to Function

The following section reviews research demonstrating the importance of matching treatments to the functions of behavior. Research establishes that it is imperative for behavioral functions to match treatments, because treatments for behaviors with similar topographies have shown to have different results when those behaviors have different functions (Kern, Delaney, Hilt, Bailin, & Elliot, 2002). Research has shown that behavioral interventions that match to the function of the behavior being examined are more effective than those that do not (Rodriguez, Thompson, & Baynham, 2010).

Implementing procedures without an understanding of variables that maintain an individual's behavior may provide effects that are undesirable, and could possibly lead to an increase in the problem behavior (Rodriguez et al., 2010; Iwata, Pace, Cowdery, & Miltenberger, 1994). While some interventions, such as time-out procedures may lead to effective results for attention-maintained noncompliance, those same techniques may intensify escape-maintained noncompliance (Rodriguez et al., 2010). Persistent prompting in addition to escape extinction may actually reinforce noncompliance that is maintained by attention (Rodriguez et al., 2010). Rodriguez et al., (2010) emphasized that discriminating between escape-maintained and attention-maintained noncompliance is problematic, because in their study all three participants' noncompliance was at least somewhat maintained by attention, yet attention was delivered with their prompting procedures, which displays the importance of effectively and reliably determining functions of behavior.

According to the results of Kern et al., (2002), when attention was determined as the function for noncompliance, physical guidance reinforced noncompliant behavior, and when escape was discovered as the function for noncompliance, physical guidance decreased noncompliant behavior. Therefore, matching the escape function of noncompliance to the physical guidance treatment was more effective than matching the attention function of noncompliance to the physical guidance treatment (Kern et al., 2002). The research base on functions of problem behavior raises the issue of properly determining the function of behavior; it is imperative to distinguish between a problem behavior occurring for the function of escape or avoidance, in comparison with attention, or possibly a combination of the two (Ward et al., 2017).

Iwata et al. (1990) discovered that stereotypy, which refers to repetitive speech, recurring motor movements, or repetitive object use (DSM-5; American Psychiatric Association, 2013), may function for escape, yet Vollmer, Iwata, Smith, & Rodgers (1992) determined that demands may function as a discriminative stimulus for the accessibility to attention for stereotypy behavior. If attention is determined as one possible variable that maintains noncompliance, making the attention contingent on compliant behavior, rather than noncompliant behavior may be more effective (Ward et al., 2017). Ward et al. (2017) implemented the use of wait outs with the focus of constructing attention to be contingent on compliance, rather than noncompliance, by momentarily removing the availability to work materials and attention that is contingent on noncompliance.

Matching the functions of behavior to treatments is imperative to obtaining positive outcomes of behavioral interventions (Kern et al., 2002; Rodriguez et al., 2010). Without a reliable procedure for determining the function of a behavior, treatments may lead to adverse changes in behavior or unintentional reinforcement may ensue (Kern et al., 2002; Rodriguez et al., 2010; Ward et al., 2017).

Noncompliance

The researcher is focusing on noncompliance behavior in the current study, so this section reviews general definitions of noncompliant behavior in classroom settings, as well as the importance of increasing compliance and decreasing noncompliant behavior during classroom instruction. Compliance with instructional demands in the classroom is a necessary requirement for completing tasks in educational settings (Hains, Fowler, Schwarts, Kottwitz, & Rosenkotter, 1989). Cipani (1993) defines noncompliance in a

classroom as, “the failure to comply with a teachers request or instruction.” Ritz, Noltemeyer, Davis and Green (2014) stated that “failure to comply” differs depending on the context and individual, but that a large portion of the research base terms it as an individual’s failure to respond to a demand or direction within 5-10 s. Mace et al. (1988) define noncompliance as, “slowness to response to instruction or complete assigned tasks and may incur punitive social responses from peers or staff” (p. 123). Yet, noncompliance should be operationally defined exclusively for each individual who exhibits this type of behavior, and will be individually determined with each participant in the current researcher’s study.

Miles and Wilder (2009) indicated noncompliance as one of the most frequently exhibited problem behaviors by young children referred to behavioral interventions, which establishes the need for addressing this problem behavior. Mace et al. (1988) stated that noncompliance is a significantly reported behavior problem for populations with developmental disabilities. Compliant behavior is often absent from the behavioral repertoires of individuals with a range of disabilities (Iwata et al., 1994). Noncompliance often co-varies with other maladaptive behaviors, such as self-injurious behavior (SIB) (Iwata et al., 1994), aggression (Derby, 1992), and property destruction (Lalli, Casey, Goh, & Merlino, 1994), and is therefore imperative to attend to (Mace et al., 1988).

Noncompliance behavior may look differently across individuals, yet is a necessary target for completing instructed classroom tasks (Hains et al., 1989). Research on noncompliance exhibits the need for interventions that decrease noncompliant behavior, and provide individuals with interventions that will lead them to follow instructed tasks in applied settings.

Functions of Noncompliance

In following section is a review of the research on functions of noncompliance as well as the researchers' purpose for focusing on escape-maintained noncompliance behavior. This section discusses the two most common functions of noncompliance, attention, and escape (Ndoro, Hanley, Tiger, & Heal, 2006). While both escape-maintained noncompliance and attention-maintained noncompliance are important matters, the different functions match different treatments, which will also be discussed in this section.

According to the literature, attention and escape seem to be the most typical consequences for noncompliant behavior (Ndoro et al., 2006). There have been many interventions that have demonstrated increases in attention-maintained compliance, such as high-probability requests and time-out (Rortvedt & Miltenberger, 1994), physical guidance as reinforcement (Kern, Delaney, Hilt, Bailin, & Elliot, 2002), and different forms of differential reinforcement of alternative behaviors (DRA) (Wilder, Harris, Reagan, and Rasey, 2007). These types of procedures conducted analyses to determine the function of noncompliance as attention, and matched the function to treatments. The function of escape-maintained noncompliance necessitates different procedures, because escape-maintained noncompliance and attention-maintained noncompliance are maintained by different variables, which merits the implementation of different interventions.

Noncompliance, and other problem behaviors are often maintained as a way to escape from or avoid non-preferred tasks or undesired circumstances (Bouxsein, Roane, & Harper, 2011; Vollmer & Athens, 2011). Escape-maintained behaviors are defined as

when individuals escape, or remove themselves from an aversive condition that exists in their environmental repertoire; avoidance is the escape from potential aversive situations that have not yet happened (Catania, 2013). The current researcher is focusing on noncompliant behavior that is primarily maintained by the function of escape, rather than predominantly the function of attention, because the wait out procedure that the researcher implemented serves as an alternative to escape extinction procedures that intervene with escape-maintained noncompliance (Ward et al., 2017).

Attention-maintained noncompliance behavior and escape-maintained noncompliance behavior serve different purposes, and therefore necessitate different procedures for decreasing noncompliance. The current researcher focused on students who exhibit primarily escape-maintained noncompliant behavior, with the possibility of attention-maintained noncompliance as a secondary function (Ward et al., 2017).

Interventions for Escape Motivated Behavior

This section contains research regarding some of the interventions that have been demonstrated to match escape-motivated behavior, including noncompliance, and decrease escape-maintained problem behaviors, as well as their limitations. These interventions include escape extinction, differential reinforcement of other behaviors (DRO), DRA, and noncontingent reinforcement (NCR). It also includes the researchers' purpose for focusing on the comparison of the wait out procedure with escape extinction.

Escape Extinction. This section contains definitions of and research including escape extinction procedures. One way to change the consequences of behavior is to withhold any prior reinforcement with that behavior. Cooper et al. (2007) defines extinction as withholding reinforcement for a response class that was formerly reinforced,

which leads to a steady reduction in the occurrence of the behavior toward its prior reinforcement level or a discontinuation of its occurrence completely. An example of the process of extinction will be applied to a hypothetical situation where a child's screaming behavior was previously maintained by escape from an undesired task, such as the removal from a doctor's office upon screaming; the individual's screaming behavior was previously reinforced by being consistently followed by the removal from a doctor's office, which is an aversive situation for them. The process of extinction in this situation would involve the child's mom no longer providing their child with the reinforcement of their removal from the doctor's office following their screaming behavior; in this circumstance, the child's screaming behavior will no longer function as escape from going into the doctor's office, and will eventually reduce to lower levels, or completely diminish.

With proactive measures for escape-maintained noncompliance behavior, research recurrently demonstrates that interventions often include some method of escape extinction or punishment (Ward et al., 2017). Conventionally in the literature, escape-maintained noncompliant behaviors often incorporate the use of physical guidance and/or numerous verbal reminders (Iwata, Pace, Kalsher, Cowdery, & Cataldo, 1990; Zarcone, Iwata, Smith, Mazaleski, & Lerman, 1994, Ward et al., 2017). Restriction to a specific workspace, as incorporated in the wait out procedure, may be considered a method of escape extinction, yet it does not incorporate the supplement of stimuli to the environment, and does not reflect Type 1 punishment, also known as positive punishment (Ward et al., 2017; Cooper, 2007). Physical guidance and verbal reminders appear to

function as negative reinforcers, and are described as appearing as Type 1 punishers (Foxy, 1982; Ward et al., 2017).

This section contains concerns in the research with the use of escape extinction. Research with proactive measures that focus on escape-maintained noncompliance often require the use of escape extinction or punishment (Ward et al., 2017). In addition, research has shown that in studies that do not account for the use of escape extinction, treatment effects may have something to do with escape extinction (Smith & Iwata 1997; Wilder & Atwell, 2006). The discontinuation of reinforcement has possible side effects, such as an original increase in the response rate, “emotional” responses, and aggression (Cooper, 2007).

Cooper (2007) defines extinction bursts as an immediate increase in the frequency of responding, which means that problem behaviors that were previously reinforced, are escalating, because those problem behaviors are no longer effective at obtaining reinforcement, so they intensify at first. Extinction bursts and increases in aggression have been shown to develop when SIB was treated with extinction (Smith & Iwata, 1997; Lerman et al., 1999). Research has also demonstrated that escape extinction has led to counter-aggression (Sidman, 1989), such as physical aggression (Lerman & Iwata, 1995), particularly when physical guidance is included in the process (Piazza et al, 1996; Ward et al., 2017). Due to the potentially dangerous side effects associated with escape extinction, this should be avoided as a treatment when possible, which is why the researcher implanted a possible alternative to interventions that include escape extinction.

NCR and DRO. This section includes definitions of and research for NCR and DRO procedures aimed to decrease escape-maintained noncompliance. Cooper (2007)

defines DRO as a procedure in which reinforcement is contingent on the nonoccurrence of a problem behavior during specified times, with the goal of reducing problem behavior. NCR is a procedure that involves presenting reinforcing stimuli on either a fixed or variable time schedule that is independent of the problem behavior (Cooper, 2007). NCR is frequently used as an antecedent intervention to decrease problem behavior (Cooper, 2007).

Goetz, Holmberg, and LeBlanc (1975) compared the effects of the interventions of contingent teacher presence for noncompliance, DRO of contingent teacher presence for noncompliance, and NCR of noncontingent teacher presence on one preschooler's compliance behavior. The results revealed that the participants' compliance to demands was higher during each contingent teacher presence condition, and decreased during NCR and DRO conditions (Goetz et al., 1975). Contingent reinforcement was found to increase compliance across all conditions, the NCR treatment led to a decrease in compliance during the two reversal conditions, and the behavior was variable and did not decrease to the low levels achieved during the two DRO reversals (Goetz et al., 1975).

While the DRO procedure led to a decrease in compliance quicker and in fewer sessions than the NCR procedure, the authors stated that in applied settings it is difficult for teachers to consistently deliver reinforcement contingent on the target behavior because of all of their other responsibilities (Goetz et al., 1975). Goetz et al (1975) discovered that NCR led to a slower, more variable change in compliance behavior, and that DRO is not always effective in applied settings such as a classroom, because of the consistent attention from the staff it requires.

DRA. DRA procedures aim at decreasing problem behavior that consists of reinforcement being delivered for a behavior that acts as a desirable alternative to the problem behavior while reinforcement is withdrawn following instances of the problem behavior (Cooper, 2007). Piazza, Moes, and Fisher (1996) implemented a DRA intervention plus demand fading for escape-maintained destructive behavior; demand fading involved gradual presentations of demands over time in situations when the probability of problem behavior was low. The results demonstrated a near-zero decrease in destructive behavior, and a subsequent increase in compliance without the use of physical guidance (Piazza et al., 1996). Compliance was followed by access to highly preferred items, including social attention and tangible items. When an escape extinction condition with physical guidance was implemented during the study, the participants' destructive behavior increased.

Escape extinction, DRO, NCR, and DRA are some interventions in the current literature that aim to decrease primarily escape-maintained noncompliance. While these procedures have demonstrated results that have decreased noncompliance behavior, the researcher is interested in adding to the research in evaluating the results of a reactive alternative to these procedures.

Proactive vs. Reactive

This section examines two different categories of interventions that address noncompliance behavior. The two general approaches to intervening with noncompliance and other problem behaviors include proactive measures, which involve interventions that are implemented prior to the occurrence of problem behaviors, and reactive

measures, which incorporate the intervention ensuing after noncompliance as occurred (Ward et al., 2017).

This section discusses definitions of proactive and reactive strategies. LaVigna and Willia (1995) define proactive strategies as approaches that aim to create modifications over time, and reactive strategies as tactics that are generated to manage behavior while it occurs. Ward et al. (2017) refers to proactive procedures as those that are implemented prior to problem behaviors ensuing, and reactive procedures as those that are executed after inappropriate behaviors occur, focusing on the consequences of behavior. There are multiple examples of proactive and reactive interventions being put into place for children with noncompliance and other problem behaviors.

This section reviews the literature for proactive procedures, reactive procedures, and a combination of both, that have been implemented to decrease noncompliant behavior. Proactive procedures, such as positive reinforcement (Wilder, Harris, Reagan, Rasey, 2007), demand fading (Piazza, Moes & Fisher, 1996), and behavioral momentum (Mace, Hock, Lalli, West, Belfiore, & Pinter, 1988; Belfiore, P. J., Basile, S. P., Lee, D. L., 2008) are included in many intervention strategies for noncompliant behaviors. There are also examples of a combination of proactive reactive procedures being implemented to increase noncompliant behaviors (Iwata, Mazaleski, & Smith, 1994). Reactive procedures for noncompliance include ignoring noncompliance, time-out techniques (Foxy, & Shapiro, 1978;), social punishment (Doleys, Wells, Hobbs, Roberts, & Cartelli, 1976), and teachers administering effective demands (Matheson, & Shriver, 2005). The current researcher intends to implement a reactive procedure in an attempt to reduce

noncompliance behavior, which involves the introduction of the intervention following the occurrence of noncompliance behavior.

Noncompliance procedures can be broadly classified as being proactive, or occurring before noncompliance ensues in a situation, or reactive, which occur following the exhibition of noncompliance in a situation (Ward et al., 2017). The present researcher is focusing on replicating a reactive procedure to decrease noncompliance, which will begin after noncompliance has been demonstrated.

Intrusiveness of Reactive Noncompliance Procedures

This section discusses the intrusiveness of reactive noncompliance procedures, which is determined by the transition from pre-compliance conditions to post-compliance conditions (Ward et al., 2017). The degree that each participant's pre-compliance choices are limited in each reactive intervention is considered using only one consequence option (Ward et al., 2017).

Ward et al., (2017) discussed the intrusiveness of reactive procedures focused on noncompliant behavior; they placed specific studies on a scale of most intrusive to least intrusive procedures, with escape extinction involving physical guidance as the most intrusive (Iwata, Pace, Kalsher, Cowdery, & Cataldo, 1990), being confined to a specific work space in addition to verbal and gestural reminders (Piazza et al., 1996) as the next most intrusive, their study with containment to a work table without reminders or reinforcers accessible as the next most intrusive, permitting the participants to leave the work space, and denied access to potential reinforcers and attention as the next most intrusive procedure (Fox & Shapiro, 1978), and contingent attention as the least intrusive (Hall, Lund, & Jackson, 1968).

Wilder and Atwell (2006) implemented guided compliance procedures where participants were prevented from avoiding or escaping a task; noncompliance was reduced, and the reason for the reduction could be attributed to escape extinction. Physical guidance may have also functioned as punishment and reduced noncompliant behavior prior to it (Ward et al., 2017). Compliance could have increased due to negative reinforcement; they may have complied to avoid physical guidance (Wilder & Atwell, 2006). Results from Azrin, Hutchinson, & Hake's (1966) study with pigeons found that a transition from reinforcement to extinction was aversive, and led to aggression.

According to the scale created by Ward et al. (2017), their study was in the center of intrusiveness of their reactive procedure following noncompliance. The study that the present researcher implanted includes a condition that parallels the intrusiveness of the study conducted by Ward et al. (2017), as well as a condition that parallels the next least intrusive procedure on the scale, which is similar to the intrusiveness of the study conducted by Foxx and Shapiro (1978).

Purpose of the Study

The purpose of this study is for the researcher to replicate the findings of Ward et al. (2017) by evaluating the effectiveness of implementing a reactive, ethical alternative to prior forms of escape extinction with physical guidance and verbal commands, implementing task as a reinforcer using wait outs to evaluate the effects on escape-maintained noncompliance behavior. In addition, the researcher plans to compare the effects of implementing wait outs with individuals by allowing them to leave the work space during the wait out in one condition, and confining them to a specific work space during the wait out in another condition. The study will answer the following questions:

1. Does implementing the procedure of wait-outs with non-preferred, developmentally appropriate tasks with students with escape-maintained noncompliant behaviors effectively increase the frequency of compliance and subsequently reduce the frequency of noncompliance?
2. When implementing the wait-out procedure, will requiring a student to remain in the workspace where it is conducted be more effective for decreasing noncompliance than when the student is allowed to leave the workspace?
3. Do teacher(s) and/or teacher assistant(s) find the use of wait-outs as an effective practice to implement in the classroom for students with noncompliant behaviors?

Review of Literature

This chapter consists of an overview of the following topics; (a) functions of noncompliance behavior, (b) conventional forms of escape extinction, (c) proactive procedures, (d) reactive procedures, and (e) proposed alternative to escape extinction.

Research on Functions of Noncompliance Behavior

This section describes the research base for different functions of noncompliance behavior for young children who are considered typically developing, those with developmental disabilities, those with intellectual disabilities, and those with Down syndrome. It explains the functions of attention and escape for noncompliance behavior, as determined by an FA or FBA. These studies are grouped chronologically to demonstrate the development of research of determining functions of noncompliance over time.

Reimers, Wacker, Cooper, Sasso, Berg, and Steege (1993) evaluated the functions of noncompliant and inappropriate behaviors in 6 young children in a pediatric behavior management outpatient clinic, 5 of which were considered typically developing, and one was diagnosed with a moderate intellectual disability. The participants were referred to the clinic by their parents for difficulty with managing their behavior, primarily noncompliance with parental requests (Reimers et al., 1993). Three behaviors were measured throughout the study; compliance was defined as initiating a requested task within 10 s, noncompliance was referred to as the failure to initiate a demanded task within 10 s of the request, and inappropriate behaviors, such as crying, swearing, screaming, throwing objects, kicking, attempting to leave the room, and hitting were exclusive to each participant (Reimers et al., 1993). The experimenters collected data

using a 6 s interval recording procedure, and the results were interpreted on a modified multielement design, with probes across subjects (Reimers et al., 1993). A free play condition was conducted first in each session, and was followed by either an attention or escape condition (Reimers et al., 1993). Results of the FA demonstrated that noncompliance was a function of both attention and escape for 4 of the 6 participants, yet more predominantly attention than escape (Reimers et al., 1993). Another participant's results demonstrated that noncompliance functioned primarily to gain parent attention, and the other participant's noncompliance function mainly as escape from tasks (Reimers et al., 1993). Reimers et al. (1993) stated that it was difficult to determine the discrepancy between the primary functions of noncompliance being escape or attention for most of the participants. The authors stated that FAs in outpatient settings often are limited in time, and that the results suggest that brief, altered FA procedures can be implemented in typical outpatient settings (Reimers et al., 1993). Limitations of the study specified by the experimenters included the short period of time that the FA was conducted in, and only one single data points was used for each condition, which does not demonstrate stability of responding, yet a replication of the effects across conditions was implemented for each participant (Reimers et al., 1993).

Kern, Delaney, Hilt, Bailin, & Elliot (2002) conducted two experiments in their study to assess the reinforcing effects of physical guidance on noncompliance; they interpreted the results using a reversal design for each participant. The first experiment involved three individuals with developmental disabilities whose function of noncompliance was identified as attention as a reinforcer for the problem behavior (Kern et al., 2002). They compared one condition with physical guidance succeeding

noncompliance with the other condition of no physical guidance after noncompliance occurred (Kern et al., 2002). All sessions began with a verbal statement instructing the participant to complete the task at hand. The results demonstrated that noncompliance increased with all three individuals following the physical guidance condition (Kern et al., 2002). Following the no physical guidance condition, when instructions were repeated, lower levels of noncompliance were demonstrated (Kern et al., 2002). According to Kern et al., (2002), the results of the first study imply that physical guidance may function as positive reinforcement, yet they also stated that one limitation of the study is that an FA was not conducted, therefore their implication cannot be accurately justified. In the second experiment, the authors evaluated the function of noncompliance with two participants prior to examining the possible effects of physical guidance in order to determine if evaluating the function of the participants' noncompliance prior to implementing the intervention would produce more reliable effects of the intervention (Kern et al., 2002). Kern et al. (2002) employed an FA with two participants using an alternating treatments design, alternating between escape and attention functions. The results of the FA suggested that noncompliance functioned as escape for one individual, and attention for the other participant. The evaluation of physical guidance compared to no physical guidance was interpreted on a reversal design, and the results demonstrated that following physical guidance, noncompliance decreased for the individual with escape-maintained noncompliance, and increased noncompliance for the individual with attention-maintained noncompliance. Kern et al. (2002) stated that future research may be beneficial to evaluate the reinforcing effects of multiple versions of attention with the implementation of either preference assessments of a functional

analysis assessment, as well as an investigation to determine possible tactics for implementing an FA or preference assessment that may contribute to determining the efficacy of an intervention for individuals.

Wilder, Harris, Reagan, and Rasey (2007) implemented an FA with two preschool children who had been teacher-referred for noncompliance; neither participant had a psychiatric diagnosis or a diagnosed developmental disability. Teacher reports indicated that both participants ignored teacher instructions and that noncompliance depended on how instructions were delivered (Wilder et al., 2007). Compliance in this study was defined as accomplishing or initiating the designated activity within 10 s of instruction being given (Wilder et al., 2007). The FA results were interpreted on a multielement design to evaluate three conditions on noncompliance, the preferred activity condition, the nonpreferred activity condition, and the control condition (Wilder et al., 2007). The experimenters implemented a paired-stimulus preference assessment with items found in the students' natural preschool setting to determine which activities or items are most preferred, and asked their teacher to suggest an activity that was not preferred by the participants (Wilder et al., 2007). Both participants' preference assessment results revealed that watching a Clifford video was their most preferred activity, and their teacher selected picking up from the floor for both participants as their nonpreferred activity (Wilder et al., 2007). Wilder et al., (2007) stated that the results implied that noncompliance for these two students was maintained by the function of positive reinforcement. The experimenters implemented a differential reinforcement procedure, consisting of contingent access to coupons that could be exchanged for uninterrupted access to the activity maintaining noncompliance, which led to an increase in compliance

for both participants (Wilder et al., 2007). The authors stated that one limitation of their study was the narrow variety of tasks implemented in the FA procedure; the participants were introduced to two tasks that may have evoked noncompliance behavior, which included turning off a video and picking up items off the floor (Wilder et al., 2007). Wilder et al. (2007) stated that other tasks that they did not evaluate could be associated with noncompliance, and that future research is necessary to contain a more extensive variety of tasks and situations in order to identify more possible variables that could influence noncompliance.

Rodriguez et al. (2010) completed a study focused on a system for evaluating the effects of attention and escape on noncompliance behavior with three individuals in a university-affiliated early childhood program, two of which were considered typically developing, and one diagnosed with Down syndrome. They utilized an alternating treatments design, switching between attention and escape conditions (Rodriguez et al., 2010). Compliance was defined as when more than half of at least one sheet of paper passed the opening of the trash bin within 5 s of the instruction being given, and noncompliance was defined as any child not meeting the requirement for the definition of compliance (Rodriguez et al., 2010). Sessions consisted of the experimenter setting up a trash bin in arm's reach of the participant, and instructed them to put the paper in bin (Rodriguez et al., 2010). Attention and escape conditions were alternated in a multielement design, and the results suggested that noncompliant behavior for all three individuals participating in the study was maintained in some part by social attention (Rodriguez et al., 2010). Rodriguez et al. (2010) stated that future research is needed on methods for examining the effects of attention and escape on individual noncompliance

behaviors to inform treatment recommendations. Rodriguez et al. (2010) stated that FA's of noncompliance such as the one implemented in their study might be beneficial for developing function-based interventions for noncompliance behavior. The authors specified the need for more research to guide individuals creating parent-training programs as well as preschool classrooms to be as effective as possible with children (Rodriguez et al., 2010).

Common themes in the research for functions of noncompliance behavior are that escape and attention seem to be the most common functions (Reimers et al., 1993; Kern et al., 2002; Wilder et al., 2007; Rodriguez et al., 2010). The research also shows that settings differ in how beneficial a procedure for determining functions of noncompliance may be in comparison with one another, and that additional research is needed in a variety of settings (Reimers et al., 1993; Kern et al., 2002; Wilder et al., 2007; Rodriguez et al., 2010). Each of the studies evaluated mentioned that future research is needed to effectively determine the function of noncompliance behavior prior to implementing interventions (Reimers et al., 1993; Kern et al., 2002; Wilder et al., 2007; Rodriguez et al., 2010).

Research on Conventional Forms of Escape Extinction

The following studies review research on the conventional forms of escape extinction. They are organized chronologically in order to illustrate the development of research over time.

Iwata et al. (1990) examined the environmental relations of individuals with their self-injurious behavior (SIB) in three different studies. In the first study the authors assessed the factors that maintained individuals with developmental delays' SIB,

including attention, escape or avoidance, alone and play contingencies with a multi-elements design. The results of the first study suggested that with each of the subject's, their SIB transpired more often in the demand condition, which concluded that the behavior was performed for the function of avoidance or escape. In the second study, the authors intervened with escape extinction as the treatment for SIB with a multiple-baseline across subjects design. The results demonstrated a decrease in or termination of SIB for each individual, as well as an increase in compliance (Iwata et al., 1990). For the third study, the intervention included extinction as well as reinforcement for tolerance, and the results exhibited that following treatment, SIB was reduced, and the effects generalized across eight new therapists and three physicians. Iwata et al. (1990) also discussed other effects of the study, such as extinction bursts that occurred with three subjects, "which is undesirable when treating severe SIB" (p. 25). One subject's SIB actually worsened and maintained after extinction was implemented. The author's went on to warn the reader of implementing extinction interventions with avoidance or escape behavior.

Iwata et al. (1994) conducted a study to examine approaches for how extinction should be implemented to different functions of SIB. Baseline measures were conducted using a functional analysis with four different conditions: attention, demand, alone, and play, which were represented on a multielement design to determine the maintaining variables for each subjects' SIB (Iwata et al., 1994). In addition, each individual experienced two or more functional variations of extinction with either a reversal or multiple baseline design, including extinction of attention by discontinuing positive reinforcement, extinction of escape by terminating negative reinforcement with escaping

from tasks, and sensory extinction of head banging behavior with the use of a large, padded helmet (Iwata et al., 1994). In order to produce compliant behavior, the experimenter included modeling and physical guidance during the demand condition baseline (Iwata et al., 1994). Iwata et al. (1994) stated that guidance was the “inevitable consequence of noncompliance even during baseline” (p. 135). Methods included in the study, such as redirection and other efforts to prompt compliance with task directions functioned as escape extinction for escape behavior, and positive reinforcement for attention-seeking behavior (Iwata et al., 1994). The results found that a reduction or complete removal of SIB occurred for each subject, as well as an increase in compliance of demands with each individual that compliance data was documented for; effects of SIB elimination generalized to eight new therapists and three physicians (Iwata et al., 1994). The authors mentioned that future research should include cautious implications for the treatment of behavior disorders and implementing extinction procedures because of its possible powerful effects (Iwata et al., 1994).

Piazza et al., (1996) implemented a differential reinforcement of alternative behavior (DRA) procedure with compliance as the alternative behavior, escape extinction deprived of the use physical guidance, and demand fading for one boy with autism and escape-maintained destructive behavior. They used a combination of reversal and multi-element design to assess the treatment package of DRA and demand fading. The results discovered that the intervention reduced the child’s escape-maintained destructive behavior close to levels of 0 and increased his compliance behaviors. The authors reported that escape extinction with the use of physical guidance was followed by an

increase in destructive behavior. Future research is needed to determine which factor is responsible for the results of the DRA plus demand fading procedure.

Lerman, Iwata, and Wallace (1999) conducted a review of the literature on extinction to treat problem behaviors with a focus on the side of effects of extinction. Their findings demonstrated that interventions for SIB suggested that extinction bursts or increases in aggression ensued in about half of the 41 data sets that they reviewed. In their study, the authors also found that extinction bursts and aggression occurred less when extinction was only a portion of the treatment procedures, rather than the singular intervention strategy. The authors stated that future research is needed to determine whether the pervasiveness of the side effects when extinction is included in procedures, yet if this is the case, that reinforcement of problem behaviors should continue while intervening with alternative procedures with the use of non-contingent reinforcement and antecedent operations.

Everett, Olmi, Edwards, Tingstrom, Sterling-Turner, and Christ (2007) conducted a study to determine the effectiveness of decreasing escape-maintained noncompliance with two time-out (TO) procedures. The authors conducted a functional analysis to determine the functions of noncompliance; they implemented a multi-element design across participants to evaluate noncompliance for four children in both contingent escape and contingent attention conditions. A multiple baseline across four participants design was utilized to evaluate the effects of TO with and without escape extinction (EE) to compare each child's individual levels of compliance across each phase. Results of the study suggested that compliance was gained with all four children when the escape extinction was added to the TO procedures already in place. Future research is needed to

isolate the possible impact praise has on compliance from the transition of TO-EE with the intervention of escape-maintained noncompliance. Sequence effects were mentioned as a possible limitation of the study; a follow-up phase to evaluate the maintenance of the behavior change over time would also be beneficial to include in future research.

Piazza, Meeta, Gulotta, Sevin, and Layer (2003) compared the effects of positive reinforcement using a differential reinforcement of alternative behavior (DRA) procedure alone and escape extinction alone, as well as together to treat four children with a pediatric disorder who refuse food and fluid consumption. The authors implemented a multi-element design to compare levels of acceptance, mouth clean, inappropriate behavior, and negative vocalizations of each condition, and a reversal design to assess the presence and absence of the escape extinction. Results of the study demonstrated that consumption did not increase solely with positive reinforcement, yet it did increase when the authors intervened with escape extinction regardless of the presence or absence of positive reinforcement. Yet, the study exhibited that the supplement of positive reinforcement decreased negative vocalizations, extinction bursts, crying, and inappropriate behavior for some participants. The authors stated that future research with continuing to examine the effects of other reinforcement procedures is needed.

Similarly to (Piazza et al., 2003), Reed et al. (2004) conducted a study to evaluate the effects of NCA using a DRA behavior procedure component alone, escape extinction alone, and a combination of the two to intervene with feeding issues of four children. The escape baseline condition consisted of the presentation of a bite or drink approximately every 30 s from the initial acceptance, and brief verbal reinforcement was delivered if the child accepted the bite or drink within 5 s of the presentation of it or if they had a clean

mouth, which consisted of no visible food in their mouth 30 s after acceptance (Reed et al., 2004). If the child kept the bite or drink in his mouth for 30 s after acceptance, the verbal prompt of “finish your bite or drink” was delivered every 30 s until the bite or drink was swallowed (Reed et al., 2004). Any instance of inappropriate behavior occurrence during the presentation removed the bite or drink for 15 s, and another bite or drink was presented following the escape period, or at the next 30 s interval (Reed et al., 2004). The NCR plus escape condition included the availability of reinforcers throughout the session in addition to the baseline conditions. In the escape extinction condition, the experimenter provided a bite approximately every 30 s from initial acceptance, and inappropriate behavior no longer produced escape for the child (Reed et al., 2004). The NCR plus escape extinction condition included identical procedures to the escape extinction condition with the addition of noncontingent positive reinforcement throughout the session in the form of preferred toys and attention. A multi-element design was created to evaluate the effects of NCR on the behaviors of acceptance, inappropriate behavior, and negative vocalizations in the escape baseline and extinction condition in comparison with the NCR plus escape condition (Reed et al., 2004). A reversal design was utilized to assess responding in the presence and absence of escape extinction, including escape baseline/NCR plus escape compared to escape extinction/NCR plus escape extinction. The results revealed that food consumption improved only when the escape extinction was implemented, regardless of the pairing with or without NCR (Reed et al., 2004). According to the authors, following NCR treatment, inappropriate behavior decreased for some participants, yet not when used alone. Reed et al. (2004) stated that extinction bursts were apparent for four of the ten behaviors measured. “Agitated or

emotional” behavior increased following escape extinction with two of four participants. The authors stated that future research might be beneficial to focus on a comparison of NCR and DRA behaviors procedures to directly evaluate the benefits of each for interventions (Reed et al., 2004).

A common theme in the research for escape extinction procedures is that although noncompliance decreased with the use of escape extinction, most studies also included side effects that were undesirable (Iwata et al., 1990; Piazza et al., 1996; Lerman et al., 1999; Piazza et al., 2003; Reed et al., 2004). Results in escape extinction studies demonstrate that reinforcement-based procedures do not seem to produce effective results without the implementation of extinction. There also needs to be more research on the individual effects of each component of extinction procedures.

Research on Proactive Procedures for Noncompliance Behavior

This section provides research on proactive procedures for noncompliance behavior; it is arranged chronologically to demonstrate the progress of research across time. Mace et al. (1988) implemented a behavioral momentum procedure including delivering a sequence of high-probability demands directly before administering a low-probability command. The authors implemented a multi-element design to determine the effects of the two conditions of all “do” commands and all “don’t” commands on compliant behavior. Results of the study suggest that following the antecedent high-probability command sequence, compliance increased and compliance latency and task duration decreased. The authors suggested that future research should focus on limited the bias of results by having someone unaware of the studies’ hypothesis of findings implement the procedures, assessing the high-probability command procedure for each

study, and changing the criterion level for the contingency management procedure included in the study. This study provides possible evidence that implementing a proactive, behavioral momentum intervention may be one procedure that increases compliant behavior.

Wilder and Atwell (2006) assessed the effectiveness of a guided compliance procedure and its effect of reducing noncompliance for typically developing children in preschool. The study began with baseline sessions of compliance for common demands, and the guided compliance technique included delivering increasingly more intrusive prompts contingent on noncompliance (Wilder & Atwell, 2006). A non-concurrent multiple-baseline across participants design was implemented to evaluate the participants' noncompliance behaviors (Wilder & Atwell, 2006). One significant limitation of the study is that the results revealed that following guided compliance interventions, four of the six children's noncompliance was reduced. With the two students whose noncompliance did not decrease with guided compliance, a differential reinforcement of alternative (DRA) intervention was also executed; the results revealed that following the DRA intervention, the two students' compliance increased (Wilder & Atwell, 2006). This study revealed that it is possible that guided compliance might be an effective procedure for reducing noncompliance for some students in preschool settings, yet the physical guidance included in the procedure may not be sufficient for children who exhibit aggression or in settings where physical guidance is not desired (Wilder & Atwell, 2006). Wilder and Atwell (2006) stated that future research is needed to determine what portion(s) of the guided compliance procedure is responsible for the

changes in behavior, because there are many possible reasons for the effects of the intervention.

Lambert, Clohisy, Barrows, and Houchins-Juarez (2016) conducted a study focusing on assessing the use of multiple-schedules of reinforcement with the purpose of thinning the schedules of reinforcement during functional communication training (FCT) to maintain compliance and manding throughout interventions for noncompliance. The authors devised two intervention conditions: escape for compliance with low-probability demands distinct from access to tangibles, and the other addressing compliance with demands involving high-preferred objects (Lambert et al., 2016). An alternating treatments design between escape and tangible conditions was implemented across five-minute sessions for two participants in baseline (Lambert et al., 2016). During the FCT sessions, the same design as baseline was implemented in addition to a contingency review at the start of each session, noncompliance was put on extinction, mands were reinforced with access to consequences, and a progressive time delay mand-prompting procedure was included (Lambert et al., 2016). Multiple sessions of discrimination training were implemented with processes similar to FCT sessions, yet transitions between mand reinforcement and mand extinction contingencies were included, and signaled with the use of a bracelet being on during reinforcement and off during extinction (Lambert et al., 2016). The results revealed that the multiple-schedules intervention increased compliance for tangibles with one participant at first, yet aggression occurred during the escape extinction; once aggression increased, the author's implemented chained-schedules, which maintained his manding, increased compliance, and reduced aggression rates (Lambert et al., 2016). The other participant's outcomes

following the multiple-schedules intervention included compliance with all demands during the extinction condition, and no manding for reinforcements, as well as no compliance for demands and consistent manding for reinforcement during the reinforcement condition (Lambert et al., 2016).

Common themes in the research for proactive procedures for noncompliance behavior include the difficulty of implementing these plans with individuals who exhibit aggression (Wilder & Atwell, 2006), which yielded the need for additional treatments (Lambert et al., 2016). Authors stated the need for future research on the individual components of each procedure, to determine what is responsible for the changes in behavior (Wilder & Atwell, 2006), and research on limiting the bias of results (Mace et al., 1988).

Research on Reactive Procedures for Noncompliance Behavior

This section includes research on reactive noncompliance procedures, structured in sequential order to demonstrate the development of research across time. Doleys et al., (1976) focused on evaluating the effects of social punishment, positive practice, and timeout on noncompliant behavior of four children with disabilities using a multi-treatment withdrawal design. The intervention consisted of administering social punishment commands at 55-second intervals contingent on non-compliance to commands given by the interventionist; social punishment was arranged by a “loud scolding reprimand followed by a silent “glare” (Doleys et al., 1976, p. 479). The results indicated that following the social punishment intervention, noncompliance levels decreased to lower levels than they did in positive-practice or timeout conditions and that few sessions of social punishment were necessary to acquire the decrease in

noncompliance. Results revealed that the positive practice portion of the study might have also decreased noncompliance, yet not consistently across subjects (Doleys et al., 1976). The authors mentioned many apparent advantages of social punishment in comparison to other punishment procedures, including its instant delivery, the easy modification of the intensity of it, a short yet effective time period, and that it did not demonstrate any clear physical damage or injury to any of the subjects, as other punishment procedures do (Doleys et al., 1976). Doleys et al. (1976) stated that “emotional” behaviors such as soiling, wetting, and crying, as well as “startle” responses were observed during the social punishment condition (p. 481). The authors stated that the “emotional” behaviors did diminish even though the suppressive effects on social punishment persisted (Doleys et al., 1976). One limitation of this study is there was no procedure implemented to identify the specific function of the participants’ noncompliance. Doleys et al. (1976) stated the need for additional research on the effects of social punishment as a behavior control technique, and that social punishment may be suitable to suppress high-rate behavior so that incompatible behavior can be reinforced.

Foxx and Shapiro (1978) conducted a study aiming to assess the effects of a timeout procedure that did not include removing students from the learning environment in a special education classroom. The procedure included giving each of the five children with disabilities a different colored ribbon to wear and obtained edibles and praise every few minutes for good behavior and for wearing the ribbon (Foxx & Shapiro, 1978). When timeout was incorporated, ribbons were taken away for any occurrence of misbehavior and teacher attention and involvement in activities was terminated for three minutes or until the misbehavior stopped (Foxx & Shapiro, 1978). Misbehavior for each participant

differed; one participant's misbehavior consisted of running around the classroom yelling and throwing objects, another consisted of SIB, another involved yelling, banging objects, and pinching others, another consisted of yelling and out-of-seat behavior, and the last participant sometimes left his seat and would rarely, but sometimes tantrum (Foxy & Shapiro, 1978). The authors implemented a reversal design to display the control of behavior in each condition (Foxy & Shapiro, 1978). During timeout conditions, misbehaviors decreased from baseline measures and occurred less than they were during reinforcement conditions (Foxy & Shapiro, 1978). Maintenance probes revealed that over time the children's misbehavior maintained at low levels (Foxy & Shapiro, 1978). Foxy and Shapiro (1978) concluded that the ribbon procedure might be a viable form of timeout as long as behaviors occurring during timeout could be "tolerated" within the setting. The authors also stated that following the study they replaced the necktie ribbons with less obtrusive articles, such as wristbands and that if timeout in the classroom environment was not effective, that a backup timeout room should be available (Foxy & Shapiro, 1978).

Matheson and Shriver (2005) implemented a study that analyzed the effects of teaching effective command training, which included effective commands, and effective commands with verbal praise to teachers and the effects on compliance rates and academic engagement of students. The portion of this study that is considered reactive is the addition of verbal praise with effective demands; if the study had only included effective demands, it would be considered a proactive intervention. A multiple baseline across participants design was employed to examine student compliance behavior before as well as during the effective command training implementation (Matheson & Shriver,

2005). Effective commands were defined as, “concise instructions that: (a) elicit a distinct outcome, (b) are precise and temporally isolated, (c) are specific and direct, and (d) are given one at a time followed by a 5 s wait period” (Matheson & Shriver, 2005). These commands also included quiet voice tones, were directive, were stated positively, and were descriptive (Matheson & Shriver, 2005). The results demonstrated that following the application of effective commands, the students’ compliant behavior increased; with the addition of verbal praise contingent on compliant behavior, their compliance rates increased more (Matheson & Shriver, 2005). In addition, academic engagement grew as compliant behavior did, and subsequent problem behaviors decreased (Matheson & Shriver, 2005). Results from Matheson and Shriver’s (2005) study also suggested that increases in academic engagement in the classroom occur with increased rates of student compliance. The authors incorporated the need for additional research on controlling or monitoring academic instruction during the intervention to determine whether it may have an impact on the change in student behavior, as well as evaluating the effect of each component of effective demands on student behavior alone and/or in combination (Matheson & Shriver, 2005). This study provides one implication that a reactive measure may be beneficial to implement in a classroom setting to reduce noncompliance behavior.

Social punishment, positive practice, and timeout on noncompliant behavior (Doleys et al., 1976), timeout without removal from learning environment (Foxy & Shapiro, 1978), and effective command training with verbal praise (Matheson & Shriver, 2005) are all interventions that have been shown to demonstrate a decrease in noncompliance and subsequent increase in compliance behavior.

Research on Potential Reactive Alternative to Escape Extinction

This section contains the reactive alternative to escape extinction that the current researcher anticipates to replicate. Ward, Parker, & Perdikaris (2017) conducted a study focused on children with problem behaviors, such as passive resistance, physical aggression, property destruction, and SIB that function for escape from or avoidance of and non-preferred tasks and activities. Ward et al., (2017) focused on determining the efficacy of a reactive substitute for conventional forms of escape extinction in a “special needs clinic” and a general education classroom in three different studies. They implemented a multiple baseline across behavioral stressors or instructional targets design to measure the impact of “wait outs” when presented with tasks and/or non-preferred stimuli (Ward et al., 2017). The wait out procedure began when students demonstrated noncompliance behavior or failed to respond to an SD for at least 5 s, the teacher then provided a targeted S-delta, and stated, “That’s not ready” (Ward et al., 2017). The third step involved the teacher saying, “Ready?” once the individual demonstrated at least 5 s of calm waiting and 2 s of orienting toward the teacher; if the student demonstrated their readiness by indicating it with the words “ready,” “yes,” or nodding, as well as refraining from protest, the work materials and attention were presented (Ward et al., 2017). Additional reinforcers were not offered during this time in the wait out procedure so that the student didn’t learn that task resistance followed by cooperation leads to reinforcement (Ward et al., 2017). The last step involved the instructor offering work materials, and if the student displayed noncompliance or if 5 s passed without indicating their readiness, the teacher turned away and moved the material away, and then reverted back to step 3 (Ward et al., 2017). The results demonstrated that

following the introduction of “wait outs” during three defined stressors, one participant responded appropriately to skills at a much higher rate than during baseline. Following the wait out intervention, all three participants demonstrated an improvement in compliance, which was demonstrated by reductions in the frequency and duration of wait out procedures over time (Ward et al., 2017). The participants in all three studies were directed to wait at the table and were not allowed access to attention or other potential reinforcers during the wait out procedure (Ward et al., 2017). Each of the participants, antecedent conditions evoking problem behaviors, functions of noncompliance, behaviors that wait outs were contingent upon, and dependent measures in the study varied (Ward et al., 2017). The functions of noncompliance behaviors were determined by functional behavior assessments (Ward et al., 2017). As indicated by Ward et al. (2017) future research is needed on the efficacy of multiple different forms of wait outs, including situations in which students are given the opportunity to leave the work area during a wait out time. This is the first study conducted that is investigating the task as a reinforcer reactive alternative to traditional forms of escape extinction. Additional research on this reactive alternative could be beneficial to the literature to determine whether this intervention can decrease noncompliance behavior effectively and in an ethically acceptable manner (Ward et al., 2017).

Timeout is considered a behavior change tactic that intends to reduce behavior (Cooper, 2007). There are two types of timeout procedures: nonexclusion, where the participant is not physically removed from the time-in setting, and remains in the environment, but loses access to reinforcement, and exclusion, which refers to the physical removal of the individual from the environment for an indicated time period,

contingent on the occurrence of a specific problem behavior (Cooper, 2007). The wait out procedure differs from traditional timeout procedures in that it is a timeout from the opportunity to work, with reinforcement contingent on compliant behavior (Ward et al., 2017). If the participant demonstrates compliance by signifying their individually defined “readiness,” then they obtain access to work and reinforcement once the work is completed, yet temporarily loses access to both when they demonstrate noncompliance. This reactive alternative to escape extinction has only been completed in one study, which therefore necessitates additional research to demonstrate whether or not the results can be replicated.

Methodology

The chapter below contains information regarding a description of the participants and selection criteria, the data collection procedures utilized, the experimenter's research design, the setting, the experimenter, the data collection methods, the materials employed, the experimental design used, and the procedures executed throughout the study. In addition, the researcher's concepts implemented to protect human subjects utilizing social validity, and the procedures applied to measure the researcher's fidelity of implementation and IOA of data are incorporated.

Participants and Selection Criteria

The target population for the participants that qualified for this study included students enrolled in a private school setting in Harrisonburg, Virginia. Students who have been diagnosed with a disability, including a developmental disability, multiple disabilities, intellectual disability, and/or autism spectrum disorder (ASD), obtain special education services, and have been referred by their teacher(s) as exhibiting escape-maintained noncompliant behavior that interferes with their participation in school activities were considered for this study. Inclusion criteria for the study also incorporated the ability to obtain informed consent from the parents and/or guardians of the student, and informed assent from each student and their teacher(s). Teacher participants for this study were selected based on the criteria of being a classroom teacher, teacher assistant, or paraprofessional of the student participants in addition to the ability to acquire informed consent from them. The student and teacher participants were chosen based on convenience sampling and meeting the selection criteria.

Tristan. Tristan was an 11 year-old 5th grade boy who attended a local private school for students with severe challenging behaviors and was on the adapted curriculum. He was diagnosed with Speech/Language Impairment, Visual Impairment, and ID; he was served under the category of MD, and was diagnosed with Lennox-Gastaut Syndrome. He received Occupational Therapy and Vision Therapy as related services. Tristan was able to vocally communicate his wants and needs, vocally state his choices when given options, and was able to stating “yes” when he wanted to do something, and “no” when he did not want to do something. Receptively he was able to follow multiple step directions, daily classroom routines, and could identify certain objects by point to them or vocally stating them when given a verbal direction to do so.

Academically, Tristan was able to receptively identify at least 20 sight words with 90% accuracy, expressively recognize 13/20 of the same sight words. He was currently practicing writing the letters “T” and “L,” in his name daily. Tristan demonstrates his ability to listen to fiction and nonfiction stories by answering literal and recall questions with 100% independence. He has also mastered verbalizing the central idea of a text with 100% independence. Tristan was also currently working on receptively identifying the numbers 40-45, and had mastered receptively and expressively identifying the numbers 0-39 with 90% independence. Tristan’s classroom teacher stated that he exhibited primarily escape-maintained noncompliance behavior, with attention as a secondary function primarily during his academics time, which is why he was chosen to participate in this study contingent on obtaining informed consent from his parents, assent from him, and consent from his classroom teacher.

Parker. Parker was a 16 year-old boy who attended a local private school for students with severe challenging behaviors and was on the adapted curriculum. He was diagnosed with ASD and Speech/Language Impairment. Parker did not have any vocal speech, but communicated expressively using picture cards. He was able to receptively point to given options of possible reinforcers, and food choices. Parker was currently working on being able to receptively point to an identification card when asked for his name. He was also able to write his name with some physical guidance. Parker responded well to verbal prompts when they are also paired with gestural prompts, and was currently working on wait training to learn to wait for a prompt when he does not know the answer to something. Parker's teacher stated that he exhibited primarily escape-maintained noncompliance behavior, with attention as a secondary function, especially during academic tasks, which is why he was chosen to participate in this study contingent on obtaining informed consent from his parents, assent from him, and consent from his classroom teacher.

Levi. Levi was a 9 year-old boy who attended a local private school for students with severe challenging behaviors and was on the adapted curriculum. He was diagnosed with ASD as his primary disability and Speech/Language Impairment as a secondary disability, as well as a sleep disorder. Levi had difficulty communicating both receptively and expressively; he was not able to express all of his wants and needs vocally. He was able to vocally express that he would like to take a walk, wanted water, express his food preferences when given choices, and was able to state "no" if he did not want to do something. He was able to receptively and expressively identify some numbers, letters, and noun picture cards, which are skills that he has shown regression with over time. The

majority of his expressive speech was echoic, and included up to 5 word sentences. He displays expressive and receptive language and pragmatic (social) skill deficits, which are addressed through the goals and services throughout his IEP.

Levi was currently working on receptively identifying letters A-E of the alphabet and writing his name with prompting. He was able to follow one-step directions with verbal and gestural prompts, yet he also exhibited aggression when given non-preferred tasks and demands, such as his academics. Levi's teacher stated that he exhibited primarily escape-maintained noncompliance behavior, with attention as a secondary function, which is why he was chosen to participate in this study contingent on obtaining informed consent from his parents, assent from him, and consent from his classroom teacher.

Ms. Chloe. Ms. Chloe was Tristan and Levi's teacher at a local private school for students with severe challenging behaviors. She graduated from Concord University in 2014 with a BA degree in Secondary Education Social Studies and a BS in History. She began working at the school in August of 2015, and was finishing her coursework in the K-12 Special Education Adaptive Curriculum MAT program in the fall of 2018 and will then begin student teaching and overlapping with a behavior specialist concentration. Her classroom consisted of six students on the adapted curriculum ranging from 2nd grade to 6th grade with a range of abilities, disabilities, problem behaviors, strengths, and weaknesses. Ms. Chloe recommended Tristan and Levi for the study because of their primarily escape-maintained noncompliance behaviors and accompanying problem behaviors that were preventing them from learning throughout the school day.

Ms. Julie. Ms. Julie was a teacher's assistant in Parker's classroom at a local private school for students with severe challenging behaviors; she had obtained an associates degree in the field of IT. She had been working at the school for two years beginning as an educational aide and has since worked her way up to an assistant teacher position. She assisted in a classroom on the adapted curriculum with two students with a range of disabilities, including Down syndrome and ASD as well as a variety of problem behaviors. Four students were originally enrolled in Ms. Julie's class at the beginning of the study, but since one has moved to a residential placement and another is being homeschooled. Ms. Julie was chosen to be part of this study as opposed to the lead classroom teacher, because the classroom teacher was continuously absent and then left her job during the study. Ms. Julie recommended Parker for the study because of his mostly escape-maintained noncompliance behavior that was preventing him from learning throughout the school day.

Setting

The researcher conducted the study in a local private school near the location of James Madison University (JMU). It took place during the JMU Applied Behavior Analysis Clinic. The school encompassed student's aged 5 to 22 with challenging emotional and behavioral disabilities that generated difficulties with their learning. This school location worked with five surrounding public school regions to assist students academically, behaviorally, and developmentally. The study was completed in the classroom settings of the chosen participants, as well as in other classrooms in the school environment across all phases of the study.

Experimenter

The study was conducted by a full time, 2nd year graduate student at JMU in the Masters of Education Special Education program with a Behavior Specialist Concentration in Harrisonburg, Virginia. The researcher had obtained a Bachelor of Science degree in Interdisciplinary Liberal Studies with a concentration in Humanities and Social Sciences and a minor in Inclusive Early Childhood Education. In addition, the researcher received her Masters of Arts in Teaching in the Education-fifth year format with a concentration in Inclusive Early Childhood Education, and her Virginia teaching license endorsed in Early Childhood Special Education and Early/Primary Education for preschool-3rd grade in 2017. She was licensed as a Registered Behavior Technician.

The experimenter was planning to graduate in the spring of 2018 with her Masters of Education in Special Education with a Behavior Specialist Concentration, and was working toward fulfilling the coursework necessary to become a Board Certified Behavior Analyst (BCBA). The researcher had over 5 years of experience working with students with a range of disabilities, including Autism Spectrum Disorder, developmental disabilities, intellectual disabilities, multiple disabilities, and developmental delays in a variety of school settings. Dr. Keri Bethune, Ph.D, the behavior specialist concentration advisor and BCBA-D was included in all components of the study. Two JMU 2nd year graduate students, Beth Hassler, and Kim Muldoon in the same Masters of Education behavior specialist concentration program served as the second and third data collectors for the study.

Data Collection

The data collectors in this study used data collection sheets to record partial-interval data for the dependent variable throughout the study (see Appendix B). Partial-interval recording includes splitting an observation period into shorter time intervals, and observing and documenting whether the target behavior occurs at all during each interval, or not. The length of each session for each participant in the current study was standardized to 10 min, which was determined as a sufficient amount of time that reflects a duration of work that is appropriate for the current level of students to complete an academic task for the ages of the participants by the researcher, her advisor, and the teachers of the participants. The 10 min sessions were split up into twenty 30s intervals, and the data recorder wrote down an X in the interval box if noncompliance behavior occurred during each interval, or an O in the interval box if it did not occur during each interval. The number of behavior occurrences in each 30s interval were counted and divided by the total number of intervals, and a percentage of noncompliance per session was obtained and documented on a graph. Data were recorded using a writing utensil and printed data sheets while watching the videos on the iPod or iPad they were recorded on after the sessions were recorded.

Dependent Variables. The only dependent variable within the study was a measure of each of the participant's noncompliance during baseline and throughout each intervention condition. During the implementation of the wait-out procedure, the participants' noncompliance was measured in one condition when they were allowed to leave the workspace, and when they were not permitted to leave the workspace in another condition. "Noncompliance" was defined on an individualized basis for each student,

following the researcher's review of the students' records, written behavioral definitions, teacher interviews, and direct ABC data results. Additional problem behaviors that accompanied noncompliance were also individually defined and included in the definition for each participant.

Tristan. Tristan's noncompliance was defined as: spitting, yelling, getting out of his seat and walking or running away from the workspace, vocally asking to do other activities, vocally stating that he wants to do other activities, vocally stating he doesn't want to do the activity, stating "no" when a demand is placed, placing his hands in his pants and/or over his private body parts, and/or refusing to follow a given verbal prompt within 5s. Tristan's spitting behavior was defined as ejecting saliva from his mouth toward other individuals and/or other items or objects besides a tissue or a trashcan. His yelling behavior was defined as any instance of vocalizations at a pitch or volume that is louder than required to communicate verbally when his communication partner is within arms reach of him.

Levi. Levi's noncompliance was defined as: stripping his clothes off of his body, any attempt or success of him throwing any object or item at a peer or staff member, any attempt or success of hitting another individual with his hands other than giving a high-five, scratching another individual with his finger nails, standing up and leaving the work space, throwing materials or other objects at a peer or staff member, tearing up, hitting, or kicking objects not directed at a peer or staff member, looking away from instructor or materials for more than 5s, and/or refusing to follow a prompt within 5s.

Parker. Parker's noncompliance was defined as: standing up and leaving the workspace, walking around the classroom and/or out the classroom door, looking away

from the instructor or materials for more than 5s, refusing to follow a given verbal prompt within 5s, bending materials from their original position with his hands, and/or grabbing objects other than the materials used in the session with his hands.

Interobserver Reliability. The reliability, or the accuracy of the researchers' data collection was measured throughout the implementation of the study. Interobserver agreement (IOA) data were taken by the second and third data collectors in order to receive a percentage of agreement on the students' noncompliance behavior. IOA is defined as the degree of two or more observers independently recording the same values after evaluating the same events in the same settings (Cooper et al., 2007). The researcher obtained IOA data on 37.7% of the total sessions dispersed equally across each phase of the study, including in baseline and in each wait-out intervention with a minimum of 80% agreement. If agreement descended below 80% at any time during the study, the data collectors would have collaborated on the discrepancies in their data and determined how to solve them in order to increase further reliability measures, yet IOA measures never fell below 90%.

Interval by interval IOA was implemented to measure the IOA for noncompliance behavior. This is determined by adding the number of intervals that the data recorders agreed on by the total number of intervals and multiplying it by 100 to obtain a total percentage of IOA (Cooper et al., 2007).

Fidelity. The third data collector completed fidelity checklists (see Appendix E, F, & G) for at least one session of baseline, and both interventions for each participant in the study in order to assess for procedural fidelity of the researcher. Fidelity checklists were completed while either observing a session while it occurred, or by viewing a

recorded view on the iPad or iPod that it was recorded on following the session. If at any time the fidelity checklists led to a score of less than 80%, the researcher would have met with the observer to discuss the discrepancies, come up with a plan to better follow the procedures in place, and would have required the observer to complete another fidelity checklist in the following session. The fidelity in the current study did not ever fall below a score of 100%, so there was no need to meet and examine inconsistencies.

Social Validity. The researcher collected social validity of the research questions by asking the classroom teacher and/or teacher assistant to complete the social validity questionnaire (See Appendix C). The questionnaire administered included the research questions addressed in the literature review written out in more user-friendly terms to determine the teacher and teacher assistant's opinions of whether noncompliance is a significant issue in the classroom, and if the wait out intervention was considered effective for the participants and socially valid, or not.

Materials

The researcher provided each student's teacher(s) with the Functional Behavioral Assessment Teacher Interview Form (see Appendix D) in order to obtain more information on the students' noncompliant behavior, and other possible problem behaviors to consider prior to obtaining direct observational data (Gable et al., 1998). The ABC data sheet (see Appendix A) was implemented prior to obtaining baseline data to determine the antecedents and consequences correlated with each participant's noncompliant behavior, and to come to a conclusion about the function of their noncompliance. Ms. Chloe and the school's BCBA provided the researcher with access to

the participants' FBA protocols, student records, and student behavioral graphs in order to determine the function of the participants' noncompliance behavior

The partial-interval data-recording sheet (see Appendix B) was implemented during baseline and both wait out intervention sessions to determine the percentage of intervals of noncompliance behavior for each participant. A social validity questionnaire (see Appendix C) was implemented with Ms. Chloe and Ms. Julie. The second and third data collectors utilized checklists (Appendix E, F, & G) throughout the study to determine whether or not the researcher implemented the baseline and both intervention procedures with fidelity. The developmentally appropriate academic tasks for Tristan and Levi to complete in each session were chosen based on the systematic instruction plans already written and implemented by their teacher in their classroom that were written in a discrete trial format. The researcher implemented one or two systematic instruction plans during each session, depending on how far the individual got through each within the 10 min session time.

Ms. Chloe provided the materials needed for Tristan's sessions; they included data sheets, a writing utensil, notecards with specific words written on them, and notecards with specific numbers on them. The materials used in Levi's sessions were also provided by Ms. Chloe, and included data sheets, a writing utensil, picture cards with letters written on them, a dry erase marker, and a white board. Materials used in Parker's sessions included noun picture cards, which were accessed through the research advisor's materials. The participant's teacher, the researcher, and researcher's advisor deemed the work materials chosen for each student as developmentally appropriate and unpreferred.

Experimental Design

The research design that the researcher executed was a quantitative research methodology; more specifically single-subject research. In this study, the researcher observed and evaluated individual behavior changes for one subject at a time. This is an appropriate research strategy for the topic, because single-subject research is conducted in order to closely study and analyze the changes in behavior that individuals exhibit after being exposed to a specific intervention (Fraenkel, Wallen, & Hyun, 2015). A multielement, or alternating treatments design was implemented to compare the effects of noncompliance in baseline and in the two wait out interventions, one wait out procedure allowing the students to leave the workspace during the intervention and the other requiring them to staying in the workspace during the intervention.

Multielement designs are one version of a reversal design that involves first exposing one condition with a participant, and then exposing the same participant to another condition in a repeated alternation (Sidman, 1960). Multielement designs demonstrate a high degree of control of responding by continually switching between conditions, which was done in this study by repeatedly switching between the wait out procedure when the participants are allowed to leave the work area during it, and the wait out procedure when the participants are not allowed to leave the work area during it (Johnston & Pennypacker, 2009). With this design, one condition served as a control condition for the other intervention condition (Johnston & Pennypacker, 2009). The two intervention conditions were alternated to make sure that the conditions all occurred the same number of times and in varying order.

Procedures

Determination of Noncompliance Function. If an FBA was in place, it was utilized to determine functions of the participants' noncompliance, in addition to viewing student records, student behavioral graphs, and completing teacher interviews and direct observational data of antecedents, behaviors, and consequences. Only one participant, Tristan had an FBA completed, and the other two participants' noncompliance functions were determined following a review of their records, behavioral graphs, completing teacher interviews, and direct ABC data observed and analyzed by the researcher.

Definitions of noncompliance for each student were determined following the results of direct ABC data, teacher interviews, review of student records, review of student behavioral graphs, and collaboration between the researcher and students' teacher(s) and the researcher's advisor. A definition of noncompliance was determined for each individual, and was modified based off of a general definition: "5s of non-responsiveness to an instruction or 10s of non-responsiveness during an independent task" (Ward, Parker, & Perdikaris, 2017). Other behavioral definitions that corresponded with participants' noncompliance behavior were included in their definitions. Prior to any baseline or intervention data being taken, ABCs and open-ended functional assessment interviews were conducted and reviewed in order to determine the functions of each participants' noncompliance, as well as to determine if there any additional problem behaviors that accompany their noncompliance behavior and to determine what will define "noncompliance" for each participant.

Baseline. A minimum of five baseline sessions were conducted for each student, and interventions began once the data demonstrated stability, with respect to the time

given to complete the study. The researcher and data collectors took partial-interval data on the data sheets with a writing utensil on the occurrence of each student's noncompliance following each session using the video recording of each session (see Appendix B). Baseline sessions were conducted in one of the classrooms within the school setting, and each baseline session for each participant was standardized to 10 min.

Tristan. For Tristan, the researcher utilized his individualized discrete trial systematic instruction plans that were written and already implemented in his classroom during his academic instruction. His academic tasks used in the study consisted of receptive word identification, receptive number identification, and writing his name. These were chosen as part of the study so that they mirrored what Tristan is usually completing during his academic tasks when he exhibits noncompliance behavior and so that did not interfere with the classroom routines and students' schedules.

Levi. For Levi, the researcher also utilized his individualized discrete trial systematic instruction plans that were written and already implemented in his classroom during his academic instruction. His academic tasks included writing his name using a backward chain and receptively identifying letters of the alphabet. These were chosen as part of the study so that they mirrored what Levi is usually completing during his academic tasks when he exhibits noncompliance behavior and so that did not interfere with the classroom routines and students' schedules.

Parker. Parker did not have any individualized discrete trial systematic instruction plans written that the researcher deemed fit for the study, so the researcher and researcher's advisor decided to implement developmentally and functionally

appropriate noun picture cards to present in a discrete trial format that the student receptively identified.

Interventions. Intervention sessions were conducted in one of the classrooms within the school setting, and each session for each participant was standardized to 10 min. The researcher implemented either one or two intervention sessions in a day with the participants during their scheduled academics times utilizing their chosen participants' school attendance, and their availability to work with the researcher according to their classroom teacher(s) on any given day when the researcher's schedule allowed her to go to the school. Intervention sessions comprised of employing the same academic activities that were targeted during baseline for each participant.

Noncompliance behavior was recorded during each wait out procedure in the same manner as it was recorded in baseline, following sessions watching the videos, and using a writing utensil and a partial-interval data sheet to take data on noncompliance (See Appendix B). The 10 min sessions were broken up into 30s intervals, and at the end of each 30s interval, the data recorder documented an X in that interval box if the participant demonstrated noncompliance at any time during that interval, and an O if they did not demonstrate any noncompliance behavior at any time during that interval. At the end of the session, the data recorder added up how many intervals included noncompliance, and divided that by 20, or the total number of intervals, to obtain a percentage of noncompliance.

Reactive Wait-Out Procedures. One condition that was introduced to each participant was the wait out procedure while the participant was able to leave the work

area. The reactive wait out procedure for each student while they were able to leave the work area included the following steps:

1. The participant exhibited noncompliant behavior or failed to respond to an SD to work for at least 5s.
2. The researcher presented a targeted S-delta (removed the presented work materials, and turned their body away from the participant) while stating, “That’s not ready.”
3. After at least 5s of the participant demonstrating “calm waiting,” which is defined by not exhibiting noncompliance as defined for each individual, the teacher asked “Ready?” while presenting work materials closer to the participant. If the participant demonstrates they are “ready” (such as verbally stating “yes,” “ready,” nodding their head, giving a thumbs up, or looking at the teacher without exhibiting noncompliance behavior), the researcher presented the designated work materials and attention to the participant.
4. Following the presentation of work materials, if the participant demonstrated any noncompliance behavior, the researcher turned their body and any attention away from the participant, removed the materials, and returned to step 3.

During the wait out time, the interventionist did not provide any additional reinforcers so that the participant did not learn that resisting tasks and exhibiting noncompliant behaviors prior to displaying compliant behavior results in supplementary reinforcement. Participants were able to leave the work area during this intervention, and still have access to the wait out procedure. If the participant left the work area, the researcher

followed them with the materials, and continued the procedure wherever the participant went to.

The other condition that was introduced to each participant was the wait out procedure while the participant was not able to leave the work area. The reactive wait out procedure for each student while they are not able to leave the work area included the following steps:

1. The participant exhibited noncompliant behavior or failed to respond to an SD to work for at least 5s.
2. The researcher presented a targeted S-delta (removed the presented work materials, and turned their body away from the participant) while stating, "That's not ready."
3. After at least 5s of the participant demonstrating "calm waiting," which is defined by not exhibiting noncompliance as defined for each individual, the teacher asked "Ready?" while presenting work materials closer to the participant. If the participant demonstrates they are "ready" (such as verbally stating "yes," "ready," nodding their head, giving a thumbs up, or looking at the teacher without exhibiting noncompliance behavior), the researcher presented the designated work materials and attention to the participant.
4. Following the presentation of work materials, if the participant demonstrated any noncompliance behavior, the researcher turned their body and any attention away from the participant, removed the materials, and returned to step 3.

During this intervention, the researcher again did not provide any additional reinforcers so that the student did not learn that resisting tasks and exhibiting

noncompliant behaviors prior to displaying compliant behavior results in supplementary reinforcement. The participants were not able to leave the work area during this wait out condition, and if they did, the researcher redirected them to sit in their seat using verbal and gestural prompts, and did not present the wait out procedure until they sat down in their seat. When the participants did sit back down in their seat, the researcher provided them with specific verbal praise stating, “thank you for sitting down” or “good job sitting in your seat,” and then continued with the wait out procedure.

Generalization. For Tristan, the interventions were generalized across times of day, including academic time in the morning, academic time in the afternoon, and sporadically throughout the school day when his teacher stated that he needed to finish his academics. The interventions were also generalized across settings within the school during the study for Tristan, in his classroom setting at different tables and desks, in the kitchen room, and in the classroom next to his. The interventions were generalized across different times of day for Parker and Levi; they were conducted in the mornings, before lunch, after lunch, and in the afternoons before dismissal. For Parker and Levi, sessions were always conducted in the participants’ classrooms. Yet, for Levi, the workspace for each session was changed throughout the intervention from sitting on the floor in a beanbag chair to at a desk or table. The researcher conducted sessions during multiple times of day depending on the participants’ teachers’ schedules each day. Sessions were usually conducted during the set academic time for each participant, which was anywhere from 9:00-11:00 AM and 1:30-2:00 for Tristan and Levi, and any time that was not during Parker’s lunch, or from 11:30-12:00 for him. Yet, there were certain days that Ms.

Chloe and Ms. Julie recommended other times for the participants to complete their academics when schedule changes occurred.

Results

The results for the Interobserver agreement are reported below. Following are the results for each research question.

Interobserver Agreement

The second and third data collectors collected on noncompliance behavior for 37.7% of the total sessions across all phases of the study. IOA averaged 95.25% for Tristan's noncompliance, 94.75% for Levi's noncompliance, and 93.9% for Parker's noncompliance.

Tristan. The second observer collected IOA on 33% of Tristan's baseline sessions averaging 92.5% (range= 90% to 95%). The same observer collected IOA on 38.4% of Tristan's intervention sessions averaging 98% (range= 90% to 100%).

Levi. The second observer collected IOA on 50% of Levi's baseline sessions averaging 94.5% (range= 94.1% to 95%). The third observer collected IOA on 50% of Levi's intervention sessions, which included only one session and resulted in 95%.

Parker. The second observer collected IOA on 33% of Parker's baseline sessions averaging 91.3% (range= 90% to 92.3%). The same observer collected IOA on 33% of Parker's intervention sessions averaging 96.5% (range= 94.4% to 100%).

Fidelity

The second and third observer collected fidelity data on the researchers implementation of baseline sessions, and for both interventions across all participants. This was completed using different fidelity checklists specified for each of the three

phases (See Appendix E, F, & G). The fidelity checklists included steps that the researcher should be following throughout sessions during each different phase. Fidelity was collected on 20% of the total sessions conducted. At least one fidelity checklist was completed across each phase of the study (baseline, wait out allowed to leave the workspace, wait out not allowed to leave the workspace) for each participant. The fidelity of the researcher's implementation across all phases for Tristan, Levi, and Parker averaged 100%.

Dependent Variables

Research Question 1: Does implementing the procedure of wait-outs with non-preferred, developmentally appropriate tasks with students with escape-maintained noncompliant behaviors effectively increase the frequency of compliance and subsequently reduce the frequency of noncompliance? Results showing the effects of both wait out interventions with Tristan are shown in Figure 3.1, with Levi are shown in Figure 3.2, and with Parker are shown in Figure 3.3.

Tristan. Tristan's noncompliance data in baseline are at a high level, are stable, and have no trend; his percentage of 30s intervals of noncompliance remained at 100% for all six of his baseline sessions. Once the wait out procedure was introduced, the data show no trend at first, but then demonstrate a decreasing trend, with an increase in noncompliance in one session. The intervention data are variable, and are at a distinctly lower level than in baseline. This graph demonstrates that Tristan's noncompliance did drop to lower levels following the introduction of the interventions, and therefore did decrease the percentage of intervals with noncompliance behavior. The wait out procedure demonstrated that it is clearly more effective for decreasing Tristan's

noncompliance behavior when compared to his baseline measures. Yet, his data are variable and his noncompliance increased in one session, which shows that while this intervention may be more effective for Tristan than in baseline, it may not be effective in maintaining a decrease in his noncompliance behavior over time.

Levi. Levi's noncompliance data in baseline remained at a high level, demonstrate no trend, and are stable. Due to Levi's poor attendance, which will be discussed in the limitations section, only two intervention sessions could be conducted with him. The first two intervention data points remained at a high level, and there are not enough data to demonstrate a possible trend or any variability or stability. According to the two intervention data points, the interventions did not decrease Levi's noncompliance behavior with respect to his baseline noncompliance levels.

Parker. Parker's noncompliance data in baseline are at a mid to high level, are variable, and demonstrate an increasing trend. Following nine baseline sessions, the data were still variable, however the trend was increasing and the level was high, therefore the interventions were introduced. Following the introduction of the interventions, Parker's noncompliance data demonstrates high to low levels, no trend, and variable data. There was only one session that his noncompliance behavior decreased below baseline levels, yet overall these interventions did not appear to decrease his noncompliance behavior effectively.

Research Question 2: When implementing the wait-out procedure, will requiring a student to remain in the workspace where it is conducted be more effective for decreasing noncompliance than when the student is allowed to leave the workspace?

Tristan. During both interventions, Tristan's data demonstrates high to low levels, no clear trend, and variable data. There is not a clear difference in Tristan's noncompliance behavior between the two interventions. Tristan's noncompliance reached the lowest level during the wait out procedure when he was allowed to leave the workspace, yet the data are still variable and demonstrate no trend. Neither of procedures were more effective for decreasing noncompliance, because neither treatment demonstrated that they were effective in decreasing his noncompliance at all.

Levi. The researcher was only able to carry out one session of each intervention with Levi, and the percentage of noncompliance in both sessions was 95%, which remained at a high level. Therefore, no conclusions can be made about the data's trend, level, or variability or stability following baseline, and neither intervention demonstrating being more effective with decreasing Levi's noncompliance behavior.

Parker. In the intervention when he was allowed to leave the workspace, Parker's data displays a high to low level, and in the intervention when he was not allowed to leave the workspace his data exhibits a high to mid level. His noncompliance behavior data was variable in both interventions, and demonstrates no clear trend in either. Parker's noncompliance behavior reached its lowest level in the intervention where he was allowed to leave the workspace, but the data jump from 45% in the second to last session to 80% in the last session. No conclusion can be made about either intervention being more effective for decreasing Parker's noncompliance, because neither intervention displayed an effective behavior change following his baseline levels.

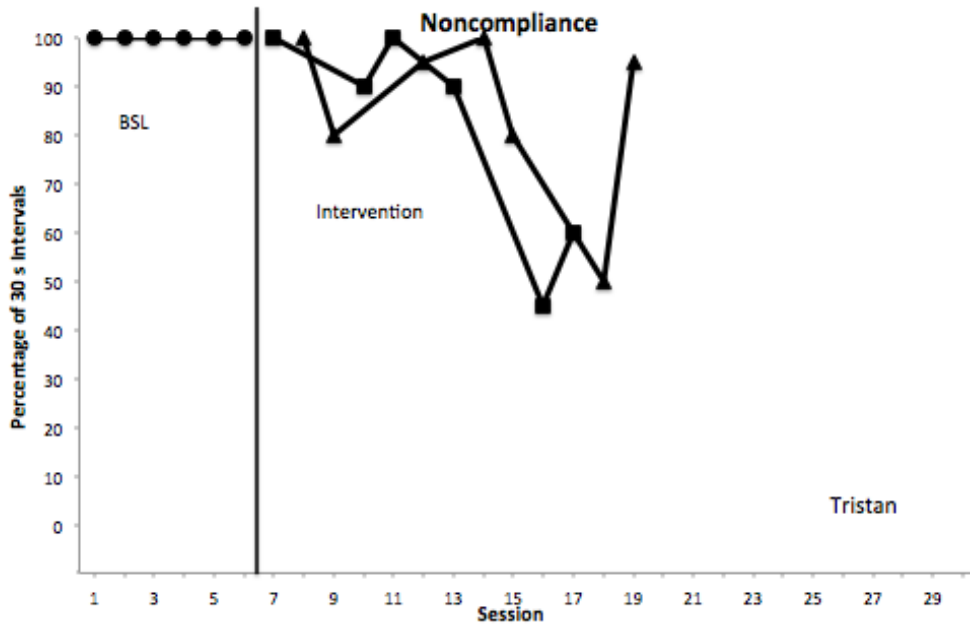


Figure 1 Tristan's Percentage of Intervals of Noncompliance. The squares represent data taken during the Wait Out Allowed to Leave the Workspace intervention, and the triangles represent the data taken during the Wait out Not Allowed to Leave the Workspace intervention.

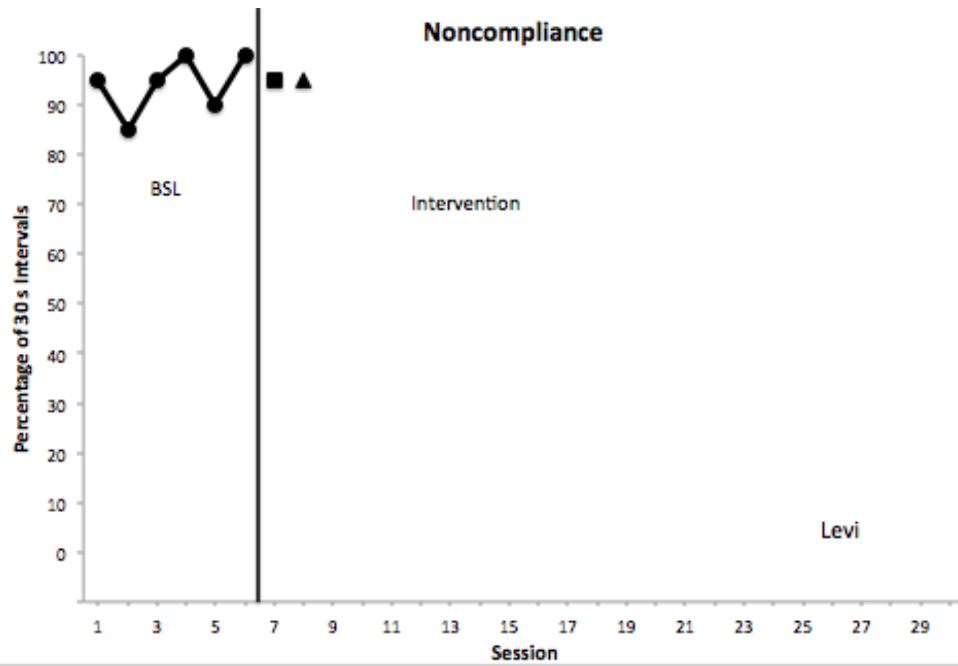


Figure 2 Levi's Percentage of Intervals of Noncompliance. The squares represent data taken during the Wait Out Allowed to Leave the Workspace intervention, and the triangles represent the data taken during the Wait out Not Allowed to Leave the Workspace intervention.

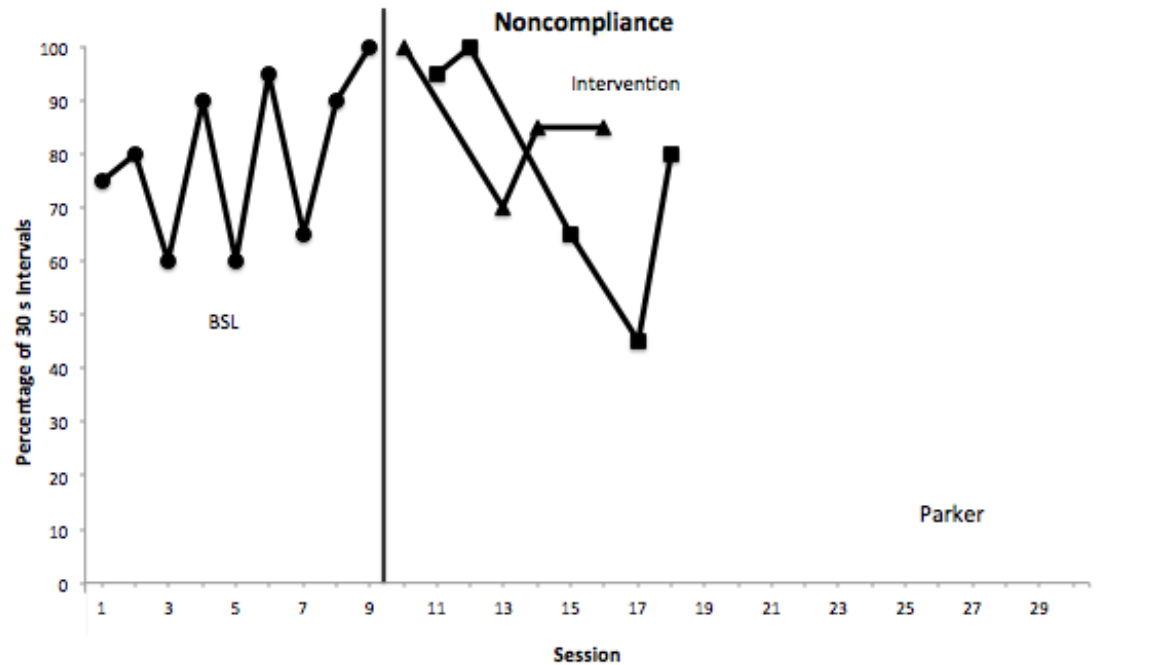


Figure 3 Parker's Percentage of Intervals of Noncompliance. The squares represent data taken during the Wait Out Allowed to Leave the Workspace intervention, and the triangles represent the data taken during the Wait out Not Allowed to Leave the Workspace intervention.

Research Question 3: Do teacher(s) and/or teacher assistant(s) find the use of wait-outs as an effective practice to implement in the classroom for students with noncompliant behaviors? Tristan and Levi's classroom teacher, Ms. Chloe and Parker's teacher assistant, Ms. Julie participated in a social validity questionnaire (Appendix C) to determine their perceptions of noncompliance behavior, the wait out procedure, how the interventions affected their classroom, and how the interventions affected the students in their classroom who participated in the study. Ms. Julie's results from the social validity survey are located in Table 1, and Ms. Chloe's results are located in Table 2. On the survey, the participants' teacher and teacher assistant rated the degree to which they agreed or disagreed with the statements on a Likert scale. The scale was labeled with numbers one through five, with one labeled as strongly disagree, and five labeled as strongly agree.

Ms. Julie strongly agreed (score 5) with the idea that the wait out interventions did not pose any risks to the participants and/or other students in her classroom. She scored a 4 for the following statements "Noncompliant behavior is a problem behavior that inhibits student participation in the classroom," "I found the wait out procedures to be an effective practice in the classroom for students with noncompliant behavior," "I will use the wait out procedures with other students in the future," "The wait out interventions were not intrusive to my daily classroom routine," "Tristan" demonstrated a decrease in his noncompliance behavior following the wait out intervention," and "Parker" demonstrated a decrease in his noncompliance behavior following the wait out intervention. Ms. Julie scored a 2 for the following statement, "Levi" demonstrated a decrease in his noncompliance behavior following the wait out intervention."

Ms. Chloe strongly agreed (score 5) with the opinion that noncompliant behavior is a problem behavior that inhibits student participation in the classroom, and that the wait out interventions did not pose any risks to the participants and/or other students in her classroom. She scored a 4 for the following statement, “the wait out interventions were not intrusive to my daily classroom routine.” Ms. Chloe scored a 3 for finding the wait out procedures to be an effective practice in the classroom for students with noncompliance behavior, and for Tristan and Parker demonstrating a decrease in their noncompliance behavior following the wait out intervention. Lastly, she scored a two for her opinion of using the wait out procedures with other students in the future, Levi demonstrating a decrease in his noncompliance behavior following the wait out intervention, and her opinion on implementing the wait out procedure interventions is a socially acceptable way to decrease noncompliance.

Table 1 Teacher Social Validity Data

Please rate the following on a scale of 1 (strongly disagree) to 5 (strongly agree)

"Ms. Julie"	1 Strongly Disagree	2	3	4	5 Strongly Agree
Noncompliant behavior is a problem behavior that inhibits student participation in the classroom.				x	
I found the wait out procedures to be an effective practice in the classroom for students with noncompliant behavior.				x	
I will use the wait out procedures with other students in the future.				x	
The wait out interventions were not intrusive to my daily classroom routine.				x	
The wait out interventions did not pose any risks to the participants and/or other students in my classroom.					x
"Tristan" demonstrated a decrease in his noncompliance behavior following the wait out intervention.				x	
"Levi" demonstrated a decrease in his noncompliance behavior following the wait out intervention.		x			
"Parker" demonstrated a decrease in his noncompliance behavior following the wait out intervention.				x	
Implementing the wait out interventions is a socially acceptable way to decrease noncompliance.					x

Table 2 Teacher Social Validity Data

Please rate the following on a scale of 1 (strongly disagree) to 5 (strongly agree)

"Ms. Chloe"	1 Strongly Disagree	2	3	4	5 Strongly Agree
Noncompliant behavior is a problem behavior that inhibits student participation in the classroom.					x
I found the wait out procedures to be an effective practice in the classroom for students with noncompliant behavior.			x		
I will use the wait out procedures with other students in the future.		x			
The wait out interventions were not intrusive to my daily classroom routine.				x	
The wait out interventions did not pose any risks to the participants and/or other students in my classroom.					x
"Tristan" demonstrated a decrease in his noncompliance behavior following the wait out intervention.			x		
"Levi" demonstrated a decrease in his noncompliance behavior following the wait out intervention.		x			
"Parker" demonstrated a decrease in his noncompliance behavior following the wait out intervention.			x		
Implementing the wait out interventions is a socially acceptable way to decrease noncompliance.		x			

Discussion

The purpose of this study was to attempt to replicate and extend findings by (Ward et al., 2017) by evaluating and comparing the effects of two wait out procedures on the participant's noncompliance behavior. The study compared the effects of implementing the wait out procedure when the participant was allowed to leave the workspace, and was still able obtain the opportunity to engage in the academic work, and implementing the wait out procedure when the participant was not allowed to leave the workspace, and was not able to obtain the opportunity to engage in academic work.

Research Question 1: Does implementing the procedure of wait-outs with non-preferred, developmentally appropriate tasks with students with escape-maintained noncompliant behaviors effectively increase the frequency of compliance and subsequently reduce the frequency of noncompliance? Both Tristan's and Parker's noncompliance behavior decreased to levels lower than in their baseline measures following the noncompliance interventions, yet the data were variable. Tristan's comparison of his levels of noncompliance in baseline and following the introduction of the interventions exhibits a decrease, which shows that these interventions have been effective for decreasing his noncompliance behavior. Parker's noncompliance behavior did do not demonstrate an effective decrease in his noncompliance, which shows that these interventions were not effective in decreasing his noncompliance. Due to Levi's poor school attendance record, he was not an ideal participant for this study, because only two intervention data points were obtained, and were both at high levels. Therefore, this study revealed that neither of the two interventions was effective in decreasing noncompliance for any of the three participants.

Research Question 2: When implementing the wait-out procedure, will requiring a student to remain in the workspace where it is conducted be more effective for decreasing noncompliance than when the student is allowed to leave the workspace?

The data did not demonstrate a clear difference between the effects of each intervention of the noncompliance behavior of any of the three participants. During the intervention when Parker was allowed to leave the workspace, he only actually left the workspace in two sessions, and Tristan only did in one session. Neither of the interventions revealed that they were more effective for decreasing noncompliance for the individuals who participated.

Research Question 3: Do teacher(s) and/or teacher assistant(s) find the use of wait-outs as an effective practice to implement in the classroom for students with noncompliant behaviors?

Ms. Chloe and Ms. Julie's social validity survey results indicate that noncompliant behavior is a problem behavior that impedes student participation in the classroom, that the wait out procedures were not intrusive to their daily classroom routines, and that the wait out interventions did not pose any risks to the participants and/or other students in their classrooms. These findings reveal that noncompliance is a significant problem behavior in the classroom. They also show that the wait out interventions were viewed as not interfering with the classroom's natural schedules, and as a safe procedure for the participants and the students around them.

While Ms. Chloe rated a 2 for implementing the wait out procedure as a socially acceptable way to decrease noncompliance, Ms. Julie rated it as a 5 (strongly agree). Ms. Julie scored a 2 for using the wait out procedure with other students in the future, and Ms. Chloe scored a 4. Ms. Chloe and Ms. Julie both scored a 2 for Levi demonstrating a

decrease in his noncompliance behavior following the introduction of the interventions; Ms. Chloe scored a 3 for Tristan and Parker's noncompliance decreasing, and Ms. Julie scored a 4 for Tristan and Parkers' noncompliance decreasing. These results indicate that the participants' teachers disagreed on whether this procedure was a socially acceptable and effective way to decrease noncompliance behavior.

Specific Contributions of this Study

This study contributes to the literature on escape-maintained noncompliance by showing that neither of the wait out procedures was effective in decreasing noncompliance behavior for two of the participants, Parker or Levi. Yet, for Tristan, the wait out interventions demonstrated that they are effective in decreasing his noncompliance behavior below baseline levels. Therefore, this study illustrates that the wait out intervention was not an effective alternative to escape extinction or any other procedure for decreasing noncompliance behavior with two of the participants, Parker and Levi, but was with the other, Tristan. This study attempted to replicate the findings of (Ward et al., 2017), yet the outcomes did not reveal the same effective results across the participants. Ward et al. (2017) stated in their study that recommendations for future research are to test out and compare the effects of the wait out procedure when participants are allowed to leave the workspace, and when they are not, yet the current study did not display that either intervention was more effective with any participant.

Limitations and Recommendations for Future Research

Limitations. There are numerous noted limitations to the current study. First, the participants' that were chosen for the study had poor attendance records that were a vast barrier to conducting sessions. The researcher originally planned to conduct a multiple

baseline design across students in addition to the alternating treatments design. Therefore, the researcher originally waited to obtain parent consent and student assent forms from at least three participants before beginning conducting baseline sessions with any of the participants so that a multiple baseline design could be utilized to allow for control-treatment comparisons both within and across participants. Eventually, the researcher and researcher's advisor made the decision to get rid of the multiple baseline design, and began baseline with the two participants whose consent forms were returned.

Student attendance also became an issue all throughout the study, because there were multiple occasions when the researcher came to the school, and one or more of the participants were not there, so nothing could be done that day with those participants. In addition to student attendance, there were many snow days, and other days off, such as due to a power outage, which prevented the researcher from being able to come to the school to collect data.

A second limitation to this study was time. The researcher was able to hand out parent consent forms in January following her winter break, and after obtaining permission from IRB, yet the first baseline session was not able to be conducted until February 21st. This also alluded to the first limitation; parent consent forms were not sent back promptly, or at least were not obtained because of student absences or school cancellations. If the researcher had more time, she would have conducted FBAs with the participants, including an FA component if deemed necessary, in order to make sure the function of noncompliance for each participant was primarily escape. If there was more time to complete this study, the researcher may have been able to obtain more stable data in baseline for Parker, and in intervention for all of the participants. Generalization across

people was not conducted during this study due to time constraints as well as the difficulties with implementing interventions in applied settings. If there was more time to complete the study, and there were effective decreases in noncompliance for any of the participants in either intervention, the researcher would have trained their teachers, teacher assistants, and paraprofessionals on the intervention(s) so that they could be generalized across people.

A third limitation to the study was the ability of the researcher to control for extraneous variables within the classroom environment during intervention sessions. The researcher conducted sessions within a classroom setting so that the intervention could eventually better generalize to the participants' natural school day, yet there were many people in and out of classrooms during sessions, which could not always be controlled for. Some of the classroom teachers, paraprofessionals, and therapists were not receptive to ignoring problem behaviors that occurred during sessions, and would sometimes intervene. There were many sessions that doors to the classroom where sessions were conducted were left open, which is an issue because the school is often loud and disruptive. One of the two intervention sessions with the participant Levi was interrupted by a student pulling the fire alarm, which occurred during the last 30s of the session, and was still counted, because the participants' attendance was so poor, and it was only the second intervention session. This is a limitation with many studies and interventions, because natural environments have many extraneous variables that are difficult to control for.

Fourth, this intervention procedure is not ideal for individuals with mental health diagnoses and/or severe or dangerous problem behaviors. It is also important to note that

this wait out procedure should not be introduced to individuals whose teachers have not already made environmental changes to the classroom to make their noncompliance behavior less effective. For example, if teachers have not already tried to change the environment to better suit the individuals interests and needs in it, such as the curricula, how material is presented, what kind of material is presented, and the choices students are given during their academics, then this procedure will most likely not be effective in the natural environment.

Fifth, the researcher acted as the sole interventionist throughout the study, so even though the interventions were conducted within the participant's natural environment, it is unclear how and if this intervention could be generalized to one of the participants' teachers or other staff in the school. Future research should examine the possibility of a how to train other staff on this intervention either during or after the intervention has been introduced to the participants.

Recommendations for Future Research. The results of this study indicate various implications for practice. First, the current study did not include the implementation of an FBA with the two students who have not had an FBA completed for them to further confirm the function of their noncompliance, nor did it involve testing out hypotheses for functions of noncompliance in an FA. Implementing FBA's and an FA with each participant prior to utilizing the wait out intervention is something to consider for future research so that the researcher is able to confidently identify what the maintain function(s) of the participants noncompliance is. While the researcher would have conducted FBAs for the two students who did not have one, and FAs for all of the participants, one of the major limitations of this study was time.

Second, generalization across people was not included in this study because of the various limitations. If there was more time, and if the intervention showed that it was effective with any of the individuals, the researcher would have taught and trained this procedure to the participants' teachers and paraprofessionals so that it could be generalized across people. Researcher should try to include generalization across people in any future research studies focusing on implementing the wait out procedure. Third, the researcher only included one dependent variable in the study, which was noncompliance. Further studies may include not only noncompliance as a dependent variable, but also accuracy of the participants' responding both in baseline and following the intervention to see if the participants' are not only being more or less compliant, but also to see if the accuracy of their academic work decreases or increases following the introduction of the interventions.

Fourth, future research may embrace choosing participants with less severe problem behaviors, and more teacher-pleasing behaviors. The participants in the current study all had severe problem behaviors that inhibited their learning and referred them to the private school they attend, which made it difficult for implementing the wait out procedures. The school environment of other students with severe problem behaviors also made it difficult to implement the wait out procedure in the classroom, so future research may consider conducting the wait out procedure in a different type of school setting or in a separate room within the school. These specific participants also do not find it reinforcing to listen to their teachers' instructions, and therefore do not demonstrate teacher-pleasing behaviors, which made it difficult for prompting them to stay in the

work place during the wait out procedure when they were not permitted to leave the workspace.

Finally, the current study was implemented in the participants' natural environment, and it was difficult to control for the many extraneous variables included in the school setting. Future research may focus on teaching this procedure to the participants in a separate room or in a more controlled setting, and then generalizing it to a more natural environment if it was successful in the controlled environment. Because there has only been one study completed and published in a behavior analytic journal that exhibited the effectiveness of decreasing noncompliance for students with escape-maintained noncompliance using the wait out procedure, there is a need for more research to replicate these findings, and/or more research on other possible alternatives to implementing escape extinction to decrease escape-maintained noncompliance behavior (Ward et al., 2017).

APPENDIX C: SOCIAL VALIDITY QUESTIONNAIRE

Please rate the following on a scale of 1 (strongly disagree) to 5 (strongly agree)

	1 Strongly Disagree	2	3	4	5 Strongly Agree
Noncompliant behavior is a problem behavior that inhibits student participation in the classroom.					
I found the wait out procedures to be an effective practice in the classroom for students with noncompliant behavior.					
I will use the wait out procedures with other students in the future.					
The wait out interventions were not intrusive to my daily classroom routine.					
The wait out interventions did not pose any risks to the participants and/or other students in my classroom.					
“Tristan” demonstrated a decrease in his noncompliance behavior following the wait out intervention.					
“Levi” demonstrated a decrease in his noncompliance behavior following the wait out intervention.					
“Parker” demonstrated a decrease in his noncompliance behavior following the wait out intervention.					
Implementing the wait out interventions is a socially acceptable way to decrease noncompliance.					

APPENDIX D: FBA TEACHER INTERVIEW FORMS

**Functional Behavioral Assessment
Teacher Interview Form**

Interviewer(s) _____ Date(s) _____

Student(s) _____

Respondent(s) _____ Title _____

1. Describe the behavior of concern. _____

2. How often does the behavior occur? _____

How long does it last? _____
How intense is the behavior? _____

3. What is happening when the behavior occurs? _____

4. When/where is the behavior most/least likely to occur? _____

5. With whom is the behavior most/least likely to occur? _____

6. What conditions are most likely to precipitate ("set off") the behavior? _____

7. How can you tell the behavior is about to start? _____

**Functional Behavioral Assessment
Teacher Interview Form**

8. What usually happens after the behavior? Describe what happens according to adult(s), peers, and student responses. _____

9. What is the likely function (intent) of the behavior; that is, why do you think the student behaves this way? What does the student get or avoid? _____

10. What behavior(s) might serve the same function (see question 9) for the student that is appropriate within the social/environmental context? _____

11. What other information might contribute to creating an effective behavioral intervention plan (e.g., under what conditions does the behavior not occur?) _____

12. Who should be involved in the planning and implementation of the behavioral intervention plan? _____

Source: Gable, Quinn, Rutherford, & Howell (1998)

APPENDIX E: BASELINE FIDELTY CHECKLIST

Observer: _____ Participant: _____ Date: _____

Baseline Fidelity Form

Baseline:	Yes	No	N/A
1. The researcher presented the predetermined, developmentally appropriate work materials.			
2. The researcher stated the targeted S ^D , such as “Point to the letter A,” “Write your name,” “Point to the toilet,” “Hand me the number 42,” or “Point to the word restroom.”			
3. The researcher gave the participant at least 5 s to give a response.			
4. If the participant did not respond, the researcher either restated the demand, reminded the student what they are working for, said “first work, then _____” or marked it as a no response and moved onto another targeted S ^D .			
5. The researcher provided the student with specific verbal praise when a correct response was exhibited.			
6. The researcher executed an error correction procedure when an incorrect response was exhibited.			
7. The session was at least 10 minutes long.			
Score (out of 7)			

APPENDIX F: WAIT OUT ALLOWED TO LEAVE THE WORKSPACE FIDELTY
CHECKLIST

Observer: _____ Participant: _____ Date: _____

Wait Out Allowed to Leave the Work Area Fidelity Form

Wait Out Procedure:	Yes	No	N/A
1. The researcher presented the predetermined, developmentally appropriate work materials.			
2. Following the participant exhibiting noncompliant behavior or failing to respond to an SD to work for at least 5 s, the researcher removed the presented work materials, turned their body away, and stated, "That's not ready."			
3. Following at least 5 s of the participant demonstrating "calm waiting" as defined by not demonstrating noncompliance, the researcher asked, "Ready?" and moved the work materials closer to the participant.			
4. If following the researcher asking, "Ready?" and moving the work materials closer to the participant, the participant demonstrated they are "ready" by verbally stating "yes" or "ready," nodding their head, or looking at the researcher without exhibiting noncompliance behavior, the researcher presented the designated work materials and attention to the participant.			
5. Following the researcher asking, "Ready?" and moving the work materials closer to the participant, if the participant demonstrated any noncompliance or problem behaviors associated with their noncompliance, the researcher turned their body and any attention away from the participant, removed the materials, and returned to step 3 above.			
6. The researcher did not provide any additional reinforcers to the student during the wait out procedure.			
7. The researcher allowed the participant to leave the work area while still having access to the wait out procedure.			
8. If the participant did leave the work area, the researcher followed them with the work materials and continued the wait out procedure.			
9. The session was at least 10 minutes long.			
Score (out of 9)			

APPENDIX G: WAIT OUT NOT ALLOWED TO LEAVE THE WORKSPACE

FIDELTY CHECKLIST

Observer: _____ Participant: _____ Date: _____

Wait Out Not Allowed to Leave the Work Area Fidelity Form

Wait Out Procedure:	Yes	No	N/A
1. The researcher presented the predetermined, developmentally appropriate work materials.			
2. Following the participant exhibiting noncompliant behavior or failing to respond to an SD to work for at least 5 s, the researcher removed the presented work materials, turned their body away, and stated, "That's not ready."			
3. Following at least 5 s of the participant demonstrating "calm waiting" as defined by not demonstrating noncompliance, the researcher asked, "Ready?" and moved the work materials closer to the participant.			
4. If following the researcher asking, "Ready?" and moving the work materials closer to the participant, the participant demonstrated they are "ready" by verbally stating "yes" or "ready," nodding their head, or looking at the researcher without exhibiting noncompliance behavior, the researcher presented the designated work materials and attention to the participant.			
5. Following the researcher asking, "Ready?" and moving the work materials closer to the participant, if the participant demonstrated any noncompliance or problem behaviors associated with their noncompliance, the researcher turned their body and any attention away from the participant, removed the materials, and returned to step 3 above.			
6. The researcher did not provide any additional reinforcers to the participant during the wait out procedure.			
7. The researcher did not allow the participant to leave the work area while still having access to the wait out procedure.			
8. If the participant did leave the work area, the researcher provided them with verbal and/or gestural prompts to sit back in their seat.			
9. The session was at least 10 minutes long.			
Score (out of 9)			

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