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Using Function-Based Choice-Making Interventions to Increase Task Completion and Accuracy and to Reduce Problem Behaviors for Students with E/BD

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ACCEPTANCE

This dissertation, USING FUNCTION-BASED CHOICE-MAKING INTERVENTIONS TO INCREASE TASK COMPLETION AND ACCURACY AND TO REDUCE PROBLEM BEHAVIORS FOR STUDENTS WITH E/BD, by MICHELLE L. RAMSEY, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the Degree of Doctor of Philosophy in the College of Education, Georgia State University.

The Dissertation Advisory Committee and the student's Department Chair, as representatives of the faculty, certify that this dissertation has met all standards of excellence and scholarship as determined by the faculty. The Dean of the College concurs.

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ABSTRACT

USING FUNCTION-BASED CHOICE-MAKING INTERVENTIONS TO INCREASE TASK COMPLETION AND ACCURACY AND TO REDUCE PROBLEM BEHAVIORS FOR STUDENTS WITH E/BD

by

Michelle L. Ramsey

Two choice-making interventions (task sequence and where) were implemented by a classroom teacher to determine the effects on the percentage of task completion, accuracy, and classroom disruption for ten sixth through eighth grade students with E/BD in a residential math classroom using a reversal design. An FBA was conducted to determine the function of disruptive behavior during independent math practice prior to the implementation of the two choice-making interventions. The math teacher provided either choice of task sequence of the independent tasks or choice of where to complete the independent tasks. Results indicate that choice of task sequence matched avoidance-maintained behaviors for two of four participants who exhibited reduced disruptive behaviors and increased task completion and accuracy. Results were mixed for six students with access-maintained behavior. Three of the six students showed decreased disruptive behaviors and increased task completion and accuracy with the hypothesized choice of where intervention. However, three participants decreased overall in disruptive behavior and increased task completion and accuracy; choice of task sequence was the most effective intervention. Future directions for research in choice-making interventions are discussed as well as limitations of the present study.

USING FUNCTION-BASED CHOICE-MAKING INTERVENTIONS TO INCREASE TASK COMPLETION AND ACCURACY AND TO REDUCE PROBLEM BEHAVIORS FOR STUDENTS WITH E/BD

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CHAPTER 1

CHOICE-MAKING INTERVENTIONS TO INCREASE TASK COMPLETION AND ACCURACY, AND REDUCE PROBLEM BEHAVIORS FOR STUDENTS WITH E/BD

Services for students with emotional behavioral disorders (E/BD) have increased more than 20% in the past 10 years (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). In addition, the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) ensures access to a free and appropriate public education for all children with disabilities of which 450,000 receive services in programs for students with E/BD (Wagner et al., 2005). The status of students with E/BD in schools and services available to them suggests that current practices are ineffective in changing the course and prognosis of this group of students (Scott, Nelson, & Liaupsin, 2001; Walker, Zeller, Close, Webber, & Gresham, 1999). The number of students with E/BD in public schools has created a need for teachers to expand both their positive interactions and understanding of appropriate interventions with this population (Cook, Landrum, Tankersley, & Kauffman, 2003; Lane, Wehby, & Barton-Arwood, 2005).

Characteristics of Students with E/BD

The current federal definition for E/BD addresses five areas: (a) the inability to learn which cannot be explained by intelligence, sensory, or health factors; (b) inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (c) inappropriate types of behavior or feelings under normal circumstances; (d) general mood of unhappiness or depression; and (e) a tendency to develop physical symptoms or fears associated with personal or school problems (IDEIA, 2004). To be eligible for services under IDEIA (2004), a student must have a problem in at least one area, exhibit the

problem over a long period of time, and to a marked degree. Further, the behavior must have an adverse affect on his/her educational performance (Forness & Kavale, 2000). The definition of E/BD under the IDEIA (2004) unambiguously includes varied problems that are behavioral, emotional, and cognitive (Cullinan & Sabornie, 2004). Students with E/BD tend to exhibit difficulties with social skills including the component skills of self-control, assertion, and cooperation (Wagner et al., 2005). Cullinan, Osborne, and Epstein (2004) found that children with E/BD across all grade levels and genders demonstrate more disruptiveness, fighting, violence, disobedience, and destructiveness than students without E/BD. Classroom teachers who were asked to rate students with E/BD rated them with behaviors such as aggression, defiance, and destructiveness (Sutherland & Oswald, 2005). Blackorby and Wagner (1996) found that students with serious behavior problems had profound, pervasive, and unrelenting problems across areas of educational, social, vocational, and interpersonal development from childhood to adulthood.

Outcomes for Students with E/BD

Mooney et al. (2003) and Reid et al. (2004) found that students with E/BD experienced limited academic progress including below average academic performance. Wagner et al. (2005) have indicated that students with E/BD experience negative outcomes over their life span including retention and elevated drop-out rates which also contribute to unemployment and poor relationships with family and friends persisting into adulthood. According to the U.S. Department of Education (2003), students with E/BD are more likely to drop-out of school than other students with and without disabilities. By the time students with E/BD reach high school, nearly 48% of students with E/BD will drop-out of high school (U.S. Department of Education, 2003).

Effective Intervention for Students with E/BD

The field of E/BD is a subspecialty area of special education with its foundation in the behavioral change procedures utilized with children and youth within regular and restrictive school settings as well as community settings (Walker, Sprague, Close, & Starlin, 2000). For many years, the concepts of behavioral theory (behaviorism) formed the basis of most of the learning theories applied to parenting and interventions in classrooms (Alberto & Troutman, 2008). The behavioral model, prevalent in both teacher training and public school programs today, assumes that all behaviors have a function (e.g., to access or avoid) and that all behaviors are learned (Alberto & Troutman, 2008). Many interventions for students with E/BD are founded in this pedagogical philosophy of behaviorism. Behaviorism purports that intervention must focus on what is observable, particularly the environment and behavior, rather than perceptions, thoughts, images, and feelings (Alberto & Troutman, 2008). Rather than viewing behavior problems as underlying symptoms of a disorder, behaviors are categorized into observable target behaviors that can be modified through a system of empirically based behavioral interventions (Alberto & Troutman, 2008; Landrum, Tankersley, & Kauffman, 2003). Behaviorism further proposes that setting-events involving antecedents and consequences can greatly influence an individual's future behavior and/or learning (Cooper, Heron, & Heward, 2007). Empirical research provides evidence on altering antecedents and consequences in the environment so that the probability of appropriate behaviors reduces the probability that inappropriate behaviors will occur (Alberto & Troutman, 2008; Cook et al., 2003). Although individual behaviors can become quite complicated, all behavioral problems are defined as a combination of behavioral excesses and deficits (Cooper et al.,

2007). In the Alberto and Troutman (2008) definition of the behavioral intervention model, three components are identified:

1. Environmental cues, or antecedents, set the occasion for behavior;
2. A behavior occurs; and
3. A consequence ensues through the addition or withdrawal of a new stimulus. (p. 256)

These three components are opportunities to intervene in behavior, one prior to the occurrence of the behavior and another after the behavior occurs (Cook et al., 2003; Cooper et al., 2007). The goal is to allow students with problem behavior to achieve the function of their behavior in an appropriate manner and design intervention strategies that increase or decrease behaviors as appropriate (Cook et al., 2003; Filter & Horner, 2009).

Landrum et al. (2003) suggested that teachers should be knowledgeable and competent in implementing interventions to address the emotional and behavioral problems of students with E/BD. Sutherland et al. (2008) suggests that interventions targeting both academic and behavioral functioning to be most effective. As well, these interventions are most effective over time but their sustained use by teachers has not been maintained (Sutherland et al., 2008). Interventions aimed at increasing task engagement are indicative in improving learning and behavioral outcomes (Sutherland et al., 2008).

Academic and Social Characteristics Interventions

Wehby, Lane, and Falk (2003) indicate that students with E/BD who are successful demonstrate school readiness behaviors such as following directions, maintaining attention, and participating in groups. However, behaviors such as disruption, non-compliance, and inattention contribute to poor academic achievement for many students with E/BD (Trout, Nordness, Pierce, & Epstein, 2003). The reciprocal relationship of underachievement and inappropriate behavior has been suggested to have

both short- and long-term negative impacts on student outcomes (Wehby, Falk, Barton-Arwood, Lane, & Cooley, 2003). For example, only recently have researchers and educators taken on the issue of academic progress for students with E/BD despite extensive documentation of the concern for the bleak outcomes for this population (Kauffman, 2005; Lane, Gresham, & O'Shaughnessy, 2002). The problem of poor academic performance has taken on added importance due to the recent academic standards associated with No Child Left Behind (NCLB, 2001), as well as current requirements for participation in statewide testing outlined in the reauthorization of IDEIA (2004). Despite the current educational emphasis on rigorous academic standards for all students, those with E/BD continue to remain academically unprepared and will remain so without effective academic intervention (Blackorby & Wagner, 1996; Lane, Wehby, & Barton-Arwood, 2005; Mooney, Epstein, Reid, & Nelson, 2003; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004).

Many students with E/BD have a high rate of challenging behaviors that disrupt instruction and impede student learning (Walker, Ramsey, & Gresham, 2004). As a result, there are increases in the percentage of these students who do not have a competent level of basic skills including overall reading ability (Anderson, 2001; Lane, Carter, Pierson, & Glaeser, 2006). Similar studies (Anderson, 2001; Cullinan & Sabornie, 2004) have reported that these youth have more problems in reading and math than comparable students without disabilities and academic achievement falls below their chronological age. Trout et al. (2003) also indicated deficiencies in written expression. The literature suggests that students with E/BD have performed lower academically than

their peers without disabilities as well as their equally matched peers with learning disabilities (Cullinan & Sabornie, 2004; Wehby, Lane, & Falk, 2003).

Pierce, Reid, and Epstein (2004) indicate that numerous instructional strategies and academic interventions such as teacher-mediated interventions have been efficacious in improving the academic performance of students with E/BD. In teacher-mediated interventions, the teacher takes responsibility for the intervention, manipulating antecedents, and/or consequences to improve academic performance (Pierce et al., 2004). Of teacher-mediated interventions, 83% have encompassed antecedent interventions with the remaining 17% for consequence interventions, and almost 90% of these interventions had a positive effect on the academic outcomes for students with E/BD (Pierce et al., 2004). Additionally, interventions were effective and provided significant promise for increased academic performance for these students when skill levels in academic content areas such as reading and math were embedded (Pierce et al., 2004). Academic engagement as demonstrated by on-task behavior has been positively correlated to academic achievement (Anderson, 2001).

Choice-Making

Over the past 30 years, choice-making research has progressed from individuals with severe developmental disabilities to milder disabilities such as emotional behavior disorders. Choice-making was first described by Skinner (1971) as an individual's action under a particular condition to gain a reinforcer. Choice-making is theoretically based in behaviorism and involves changing behavior through the manipulations of antecedents and consequences (Skinner B., 1938). Later, Fisher and Mazur (1997) defined choice as an individual's response between coexisting alternatives. Researchers have demonstrated

that individuals make choices in contexts of their lives, which produce a higher rate of reinforcement (Harding, Wacker, Berg, Barretto, & Rankin, 2002; Peck et al., 1996). Two examples of choices used to intervene on behavior include choice of task sequence, where a student is allowed to choose the order in which they complete a task, and choice of reinforcers where a student is allowed to choose the reinforcer, which follows a behavior (Kern et al., 1998; Lancioni et al., 1996).

The types of choices available in school environments include the following types: choice of where the task will occur, choice of when the task will occur, within task choice of materials needed to complete the task, choice of whom the task will be completed, between or among task choice, choice to terminate the task, future choice, choice of tangibles, choice to refuse, and alternative choice of task method (Brown, Belz, Corsi, & Wenig, 1993; Jolivette et al., 2002). In addition to the types of choices available in the classroom, the number of options and frequency of choices is dependent on various aspects of the classroom and students (Jolivette et al., 2002). Currently, the literature base for choice-making interventions is limited but it has been postulated that choice-making may enhance instruction in the classroom (Jolivette et al., 2002; Morgan, 2006). Until 1994, choice was not extended as an intervention for students with E/BD (Dunlap et al., 1994).

Choice-making with Students with Developmental Disabilities. Choice-making for students with developmental disabilities was investigated to develop habituation skills and assist this population in exerting control over their environment (Shevin & Klein, 1984). Choice-making interventions were empirically validated in three choice-making categories within developmental disabilities: assessing one's ability to

make choices, building choice-making opportunities into daily living contexts, and evaluating the effects of choice-making on behavior (Lancioni, O'Reilly, & Emerson, 1996).

Research into choice-making as an intervention for students with developmental disabilities began with Mason, McGee, Farmer-Dougan, and Risley (1989) who examined the effects of reinforcer selection between staff and participant to increase task engagement and achieved positive results when the participant was allowed to choose reinforcers. Smith, Iwata, and Shore (1995) extended the Mason et al. (1989) study with four adults with mixed results for increased task engagement. Dyer, Dunlap, and Winterling (1990) investigated reinforcer and task choice with three elementary students. During the choice condition the investigators observed lower levels of problem behavior over the no choice condition with the same task and reinforcers.

In addition to choices of reinforcers and task materials, researchers have investigated choices in task steps for students with developmental disabilities with positive results (Lancioni et al., 1996). Parsons, Reid, Reynolds, and Bumgarner (1990) investigated choice of task steps in three conditions: high preference tasks, low preference tasks, and choice of tasks. The work production of two participants with severe developmental disabilities was investigated and Parsons et al. (1990) reported mixed results. Parsons et al. (1990) found that participants exhibited higher on-task behaviors for high preference and choice conditions with low levels of problem behavior during those conditions. Bambara, Koger, Katzer, and Davenport (1995) investigated the effects of choice of task steps with positive results for low levels of problem behavior during the choice condition.

The preceeding studies involving choice-making opportunities for students with developmental disabilities indicate that this population responds positively to choice-making as an intervention in many instances (e.g., Dyer et al., 1990). However, it should be noted that in some cases investigations reported mixed results for students with developmental disabiltities (e.g., Parsons et al., 1990). Lancioni et al. (1990) did report that their review of the literature on choice-making for students with developmental disabilities did not include studies with mild to moderate developmental disabilities and that there was an overall more positive effect for choice-making with persons with severe disabilities.

For example, Dunlap, Kern-Dunlap, Clarke, and Robbins (1991) demonstrated reduced levels of problem behavior with a female student with multiple disabilities using choice-making. In another study, Cosden, Gannon, and Haring (1995) reported decreased levels of problem behavior for three participants with multiple disabilities during the choice condition of task materials and reinforcers. In a review of the literature, Kern et al. (1998) identified 14 studies using choice-making as an antecedent intervention for severe problem behavior with students with various disabilities including E/BD and those without disabilities. Of these 14 studies, five studies investigated choice-making as an academic intervention. In these five studies problem behavior occurred at lower rates during the choice conditions over the no choice conditions (Kern et al., 1998). As well, academic engagement and accuracy were higher when students were provided choices than when teachers controlled the tasks (Kern et al., 1998). These studies involving students with mild to moderate disabiltities and severe behavior problems was extended to students with E/BD by Dunlap et al. in 1994.

Choice-making with Students with E/BD. Researchers extended this research line to students with E/BD due to the success in reducing aberrant behavior and increasing task completion for students with severe disabilities (Kern et al., 1998). Task performance and completion is a critical aspect of classroom participation. Students with E/BD often do not complete tasks and exhibit poor performance during academic demands (Landrum et al., 2003). Choice-making as an intervention has been shown to improve task performance and reduce problem behaviors, thus having significance for students with E/BD (Shogren, Faggella-Luby, Bae, & Wehmeyer, 2004). As an intervention, choice-making is relatively easy to implement in a classroom and is cost-effective (Jolivette et al., 2001).

Dunlap et al. (1994) was the seminal research study involving students with E/BD and choice-making as an intervention. Dunlap et al. (1994) used choice among tasks as an intervention in two studies to determine its effects on task engagement and problem behaviors for three elementary aged students with E/BD. Using an ABAB design to examine a potential functional relation between choice-making and task engagement for students with E/BD served in a self-contained classroom Dunlap et al. (1994) demonstrated that choice-making opportunitites increased task engagement for two students with E/BD and decreased problem behavior. In addition, Dunlap et al. (1994) postulated that negative reinforcement in the form of avoidance from task demands as the function of behavior with the three elementary students with E/BD in the study. Extending choice-making for students with E/BD, the study used choice and no choice conditions in academic tasks. In the first part of the study a systematic replication of choice-making intervention was replicated with students with E/BD by reducing

inappropriate behaviors and increasing task engagement. Using a yoked control procedure the second part of the study extended and replicated the effects of the first part of the study. By yoking the sequence of tasks in a no choice condition as was provided in a previous choice-making condition Dunlap et al. (1994) produced an effect for choice beyond preference. Separating choice-making and preference for tasks was a future direction for the line of choice research for students with severe disabilities.

Powell and Nelson (1997) extended Dunlap et al.'s study with a seven year old boy with ADHD using choice of academic assignments and reported a decrease in problem behaviors and increase in academic engagment during the choice condition. Using a reversal design the authors demonstrated a functional relation between the opportunitites to make choices of academic assignments and reduction of problem behavior (Powell & Nelson, 1997).

Kern, Mantegna, Vorndran, Bailin, and Hilt (2001) continued the research line investigating choice-making opportunities with students with E/BD to reduce problem behaviors. Using choice of task sequence with two elementary students and one middle school student who engaged in problem behaviors and served in settings from private schools to inpatient hospitals, a reversal design was used to examine a potential functional relation between choice of task sequence and inappropriate behaviors. When choice of task sequence was offered all three participants exhibited fewer occurrences of problem behavior. Though not explicitly described in the research study the authors state that one of the participant's behavior was maintained by avoidance from task demand and postulated that due to this behavioral function the participant responded more positively to choice of task sequence (Kern et al., 2001).

Jolivette, Wehby, Canale, and Massey (2001) investigated whether choice-making opportunities during independent academic math activities would increase task engagement and reduce problem behavior for three elementary students with E/BD in a self contained classroom and if this intervention was feasible for teachers to implement. Functional relations between choice of task sequence and task engagement were demonstrated using a multiple baseline across participants with a withdrawal design for two of the three participants. Additionally, an increase in problems attempted and problems correct was evidenced for two of the three participants (Jolivette et al., 2001). For the third student, a steady increase across phases was observed that could not be attributed to the choice-making intervention (Jolivette et al., 2001). The authors suggested further research was needed regarding setting events to broaden the understanding of antecedent choice-making and student behavior (Jolivette et al., 2001). Social validity measures indicated that the teacher thought the intervention was feasible in a E/BD classroom as well (Jolivette et al., 2001).

Romaniuk et al. (2002) used choice of task sequence with an a priori functional analysis to assess the effects of choice-making on the avoidance versus access-maintained problem behavior exhibited in the classroom by seven students, using a reversal design. Results of the Romaniuk et al. (2002) study indicate that choice of task sequence was more effective in reducing problem behavior for students whose behavior was avoidance-maintained over students whose behavior was access-maintained. In the Romaniuk et al. (2002) study, the researchers did not design the study to distinguish the degree the participants who had avoidance maintained behavior reduced behaviors through a choice of task sequence or control of reinforcers. In addition, choice of task

sequence was the only type of choice the researchers used in their study. Future research is needed to understand how the function of behavior affects the functional relation of choice-making and reduction of problem behaviors. Also, the authors indicate that future research explore the practical limitations involved in using choice-making interventions in various classroom settings (Romaniuk et al., 2002).

Ramsey, Jolivette, Patterson, and Kennedy (2010) examined choice of task sequence to increase task engagement, task completion, and accuracy for five students in a residential facility. Choice of task sequence was provided during independent tasks in math and language arts by the classroom teachers (Ramsey et al., 2010). Using a reversal design Ramsey et al. demonstrated overall positive effects for the intervention on task engagement and task completion. Little effect was demonstrated for accuracy. Limitations of the Ramsey et al. (2010) study included study length, design, and function of behavior. A reversal design is most often used in the choice-making literature; however, in the Ramsey et al. (2010) study the phases were not counterbalanced across participants. Last, variability was noted for two participants. It was hypothesized that behavioral function may account for the variability in data due to a mismatch of choice and function (Ramsey et al., 2010). Future research was indicated to match choice-making and the function of behavior (Ramsey et al., 2010).

As students progress in age and grade, academic tasks become more difficult (Lane, Carter, Pierson, & Glaser, 2006). Because of these increased curriculum requirements adolescents with E/BD also engage in similar problem behaviors and low task engagement as do their elementary counterparts. All five studies described a trend in providing positive behavioral interventions for students with E/BD rather than a reactive

punitive environment (Dunlap et al., 1994; Jolivette et al., 2001; Kern et al., 2001; Powell & Nelson, 1997; Romaniuk et al., 2002). By providing choice of the sequence of task completion, many studies sought to decrease problem behaviors and increase task completion (Dunlap et al., 1994; Jolivette et al., 2001; Kern et al., 2001; Romaniuk et al., 2002; Shogren et al., 2004). Utilizing task sequence choice-making opportunities as an intervention for students with E/BD these students increased academic and social competence, reduced social isolation, and facilitated increased autonomy by giving students more control over their environment (Jolivette et al., 2001).

Interventions such as choice-making opportunities seek to elicit behavioral change for students with E/BD. However, limitations in each of the aforementioned studies indicate that choice-making was not effective for all students (Dunlap et al., 1994; Jolivette et al., 2001; Kern et al., 2001; Romaniuk et al., 2002; Shogren et al., 2004). Carr (1977) suggests that a possible explanation for this is that the interventions did not meet the function of the behavior. Romaniuk et al. (2002) further suggests that choice of task sequence may meet the function of avoidance over access and suggest that future research investigate this premise. In addition, in the Romaniuk et al. (2002) study only choice of task sequence was used, with no choice-making type linked to access, further limiting the results of their study.

Functional Behavioral Assessment

Functional behavioral assessment (FBA) is one procedure that has grown in importance due to its mandate in IDEIA (2004) to both research and practice communities as a means to improve the effectiveness and efficiency of the behavioral interventions selected and used with students with E/BD (Heckaman, Conroy, Fox, &

Chait, 2000; Umbreit, Ferro, Liaupsin, & Lane, 2007). Avoidance as a function of behavior is common in academics for students with E/BD (Kauffman, 2005) and is one of two key functions (avoidance vs. access) of behavior for students with E/BD (Carr, 1977; Kauffman; Romaniuk et al., 2002). Interventions in a variety of school, clinical, and community settings have been successful for mild to severe behavior problems when based on data from a FBA (Umbreit et al., 2007). For example, in a research study conducted by Carr (1977) it was suggested that people engage in behaviors because they serve a purpose or function. Umbreit et al. (2007) further elucidates this relationship between behavior and function by examining the events that immediately precede and follow the behavior (e.g., Emmett is swinging, Mattie hits Emmett, Emmett leaves the playground; Mattie gained access to the swing). In general, FBA procedures have been conducted to address challenging behaviors of individuals with severe disabilities in clinical or controlled settings (Nelson, Roberts, Mathur, & Rutherford, 1999). However, during the past 20 years more research has been conducted with high incidence disabilities (e.g., Reid & Nelson, 2002) and students with E/BD (e.g., Heckaman et al., 2000). Only between 10% to 20% of the available research on FBA has been conducted on students with high incidence disbiltities including students with E/BD or those of typical development (Lane, Umbreit, & Beebe-Frankenberger, 1999).

The 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA) legally requires that schools must conduct a FBA if a student's behavior is a manifestation of their disability or is suspended more than ten school days (IDEA; PL 105-17). As well, IDEA mandated that a behavior intervention plan (BIP) be developed based on the information from the FBA. In 2004, IDEA was reauthorized as the

Individuals with Disabilities Improvement Act (IDEIA, 2004) and added further stipulations that a FBA be conducted regardless of placement change or manifestation (IDEIA; PL 108-446). Since the most recent reauthorization, the application of behavioral practices in schools such as FBA has been increasingly discussed.

A FBA procedure generally includes four steps (Umbreit, Ferro, Liaupsin, & Lane, 2007). I describe each of these steps below.

Step One. Step One is to define the problem behavior of concern for intervention and identify the relevant variables or events that support the occurrence of the problem behavior (Umbreit et al., 2007). Information used in this step includes indirect data sources such as archival data (e.g., attendance reports, grades, discipline records), interviews (e.g., Functional Assessment Interview; O'Neill et al., 1997), and behavior rating scales or checklists (e.g., Problem Behavior Questionnaire; Lewis, Scott, & Sugai, 1994). Much variance exists in the types of indirect data used but they do allow school personnel to collect preliminary information on the problem behavior, the antecedents, the consequences maintaining the behavior, other related environmental events as well as previous successful and/or unsuccessful interventions (Sugai et al., 2000). Important components of step one include gaining an understanding of the setting events and establishing operations which maintain or make the behavior worse. Setting events are events in the surrounding context of a target behavior which reliably influence the relation among the antecedent, behavior, and consequence (Cooper et al., 2007). Establishing operations is a motivative variable in that it effects the effectiveness of a reinforcer depending on the frequency that the reinforcer is available in an environment (Cooper et al., 2007).

Step Two. Step Two involves the interpretation of Step One data and formulation of a testable hypothesis of the possible function of the problem behavior (Umbreit et al., 2007). Umbreit and colleagues (2007) suggest using a function matrix to determine a testable hypothesis. The function matrix is a grid of three columns and four rows which represent the reinforcers and functions of behavior (Umbreit et al., 2007). Users place an X in the intersecting boxes as they review their data and the resulting cluster of Xs should delineate a testable hypothesis (Umbreit et al., 2007). O'Neill et al. (1997) indicate that a testable hypothesis include four aspects: (a) the setting events which influence the exhibition of the behavior and/or establishing operations, (b) antecedent events, (c) the problem behavior, and (d) the consequent events that mainain the behavior

Step Three. Step Three involves taking direct observational data to verify the accuracy of the hypothesis (Umbreit et al., 2007). The direct observational data must include careful documentation of the antecedent and consequence variables and whether they are present or absent in the environment when the target behavior occurs (Sugai et al., 2000). Antecedent, behavior, and consequence recording (ABC) is another direct observational procedure requiring the observer to collect data regarding the antecedent (A) (i.e., events that directly precede the target behavior), the problem behavior (B), and the consequence (C) of the behavior (i.e., events that follow the problem behavior) (Cooper et al., 2007). Antecedent, behavior, and consequence recording allows observers to gain information and evaluate the relationships between the problem behavior and related events before and after the behavior as well as identify the reinforcement contingencies at work on the problem behavior (Alberto & Troutman, 2008). Thus,

verification of the hypothesis is completed by means of A-B-C recording (Filter & Horner, 2009).

Step Four. In step four the generated hypothesis of the function of the problem behaviors are determined, intervention strategies identified, implemented, and evaluated (Umbreit et al., 2007). Function-based intervention strategies typically involve one or more of the following: (a) manipulating antecedent events that decrease the target behavior and increase the appropriate behavior, (b) manipulating consequence events to weaken target behavior and strengthen appropriate behavior, (c) teaching alternative replacement behavior (that serve the same function as the target behavior) to compete with the occurrences of problem behavior, or (d) rearranging or eliminating the setting events that make the target behavior more probable (Sugai et al., 2000). Once implemented, school personnel should continue to monitor the target behavior to determine the effectiveness of the intervention and modify it when necessary (Umbreit et al., 2007).

To be most effective and efficient, the selection and development of behavioral interventions should be matched to the functions of the problem behaviors derived from a FBA (Carr, 1977; Carr & Durand, 1985). Several problems can arise when interventions are not based on the function of behaviors such as having no effect on the behavior (Ingram, Lewis-Palmer, & Sugai, 2005) or inadvertently strengthening the inappropriate behavior through positive or negative reinforcement (Umbreit et al., 2007). For example, when a student engages in disruptive behaviors such as using profanity in the classroom to avoidance a task demand, removing the student to in-school suspension (ISS) may increase the frequency and intensity of the disruptive behavior through negative

reinforcement. In addition, the student whose behavior is maintained by positive reinforcement may increase the frequency and intensity of the profanity to illicit a response from the teacher and access teacher access. Carr and Durand (1985) exemplified this in their study by showing a reduction of problem behaviors when the intervention matched the function of the behavior but not during functionally unmatched intervention phases.

Function-Based Interventions and E/BD

Functional behavioral assessment serves as a valid method to understand the function of a problem behavior in academic contexts and helps to specify the selection of intervention strategies (Filter & Horner; Scott et al., 2005; Liaupsin et al., 2006). Students with E/BD often present behavioral issues during academic activities with perceived high task demand (Cullinan & Sabornie, 2004; Landrum et al., 2003; Walker et al., 2004). In addition, students with E/BD often do not exhibit behaviors that fit the academic requirements and routines as determined by their teacher (Dunlap et al., 1994; Trout et al., 2003). Students with well-established chronic problem behaviors (e.g., students with E/BD) often do not respond to typical class-wide behavioral interventions (Kauffman, 2005). Like many students, students with E/BD often respond best to an individualized behavioral intervention strategy that encompasses their behavioral needs and function-based intervention to help them develop more adaptive skills in school and reduce problem behavior (Reid & Nelson, 2002).

Intervention strategies for students with E/BD have been selected based on the desired direction of behavioral change (i.e., increasing appropriate behavior with positive reinforcement) or the literature base of a particular intervention strategy (Heckaman et

al., 2000). Because of this, interventions have not always been successful because the intervention did not meet the function of the behavior (Carr, 1977). Ingram, Lewis, and Sugai (2005) suggest that interventions selected based on information gathered from the FBA have been more effective than interventions chosen without a functional match. Inherent to gathering information in the FBA process is the collection of observational data on antecedent, behavior, and consequences as well as setting event information in the classroom environment and is included in the hypothesis of the function of behavior (O'Neill et al., 1997; Sugai, Lewis-Palmer, & Hagan, 1998; Umbreit et al., 2007).

In determining interventions for students with E/BD it is important to explore all aspects of the classroom environment (Dunlap et al., 1996). Academic variables are sometimes the antecedent to problem behaviors (Umbreit et al., 2007). For example, task demands as the antecedent for problem behavior functions as avoidance from those task demands (Filter & Horner, 2009). As well, instructional tasks that are above the instructional capabilities of students may bring about problem behaviors that serve the function of avoidance (Lee, Sugai, & Horner, 1999). The mismatch between student skill level and task demand is an academic variable which often establishes avoidance as a reinforcer (Filter & Horner, 2009). When academic variables and problem behaviors are functionally related, FBA is important so that the relevant academic variables can be manipulated during intervention (Filter & Horner, 2009). For example, Lee et al. (1999) effectively treated the avoidance maintained problem behavior of students by providing instruction in the deficit math skills or by decreasing task difficulty.

In addition to academic variables, social variables also play a role in the function of problem behaviors and should be considered when choosing an intervention. Within

the academic environment, teacher access as well as peer access can serve as the maintaining function of problem behavior (Filter & Horner, 2009). For example, when teacher access was contingent on disruptive behavior students often engaged in disruptive behavior during an average of 55% of intervals (Broussard & Northup, 1995). When teacher access was provided non-contingently an average of 2% of intervals included disruptive behavior (Broussard & Northup, 1995). There are many potential functional relationships between both academic and social variables and problem behavior (Filter & Horner, 2009).

Given the effectiveness of FBA based interventions for students with developmental disabilties in terms of matching the function to the intervention it is important to extend this research for students with E/BD to optimize interventions for this population (Filter & Horner, 2009; Waguespack, Vaccaro, & Continere, 2006). Heckaman et al. (2000) and Reid and Nelson (2002) have conducted literature reviews on FBA with students with high incidence disabilties and E/BD, respectively. For example, Heckaman et al. (2000) analyzed the methods of conducting FBAs, the types of interventions selected and implemented, and the degree of measuring procedural integrity, generality, maintenance, and social validity of 22 studies published between 1991 and 1999 for students with or at risk for E/BD in school-based settings. In their review, the researchers found that most studies utilized indirect data to identify function, made changes to the antecedents and consequences, used school personnel such as classroom teachers, and reported that the social validity of the interventions was positive; however, generality across settings or participants nor maintenance were addressed (Heckaman et al., 2000).

Reid and Nelson (2002) reviewed 14 studies published from 1993 to 1999 with a focus on evaluating FBA for students with high-incidence problem behaviors in school settings to examine the effectiveness, acceptability, and practicality of FBA. The number of studies included in this review is low, indicating the limited research in this area. The results pointed to the effectiveness of FBA in identifying the functions of various classroom problem behaviors (e.g., off task, out-of-seat, and noncompliance). In addition, assessment results were effective in addressing the problem behaviors across a wide range of students (e.g., students with behavioral disorders, ADHD or without diagnosis) and classroom settings (e.g., special education classroom, general education classroom) (Reid & Nelson, 2002). Reid and Nelson's (2002) review suggests that a FBA approach is effective in school settings and that there is a promising empirical base for school personnel to address high-incidence problem behaviors and developing interventions.

Choice-making is an antecedent intervention that may improve the interactions between students with E/BD and their teachers as well as provide a function-based intervention alternative to reduce problem behaviors in the classroom (Landrum et al., 2003; Romaniuk et al., 2002). Sigafoos (1998) indicated that a lack of choice in the environment may be an antecedent to problem behaviors (e.g., property destruction and tantrums) and choice-making opportunities may prevent some problem behaviors. Fisher, Thompson, Piazza, Crosland, and Gotjen (1997) purported that when students have oppourtunities to make choices; the choice-making in itself may be reinforcing. For students with E/BD, previous studies have speculated that avoidance maintained behavior will benefit from choice among tasks (e.g., Dyer, Dunlap, & Winterling, 1990; Seybert, Dunlap, & Ferro, 1996; Vaughn & Horner, 1997). One exception to these studies is Kern

et al. (2001) where the authors state that the participants' behavior was avoidance maintained but the authors did not specifically state how behavioral function was derived. In the Kern et al. (2001) study the functional relation was not as strong and the study produced mixed results. The results of the Kern et al. (2001) study indicate future research is needed to delineate the effects of choice-making based on behavioral function. Romaniuk et al. (2002) suggested extending the choice-making literature by establishing the effectiveness of choice-making opportunities on problem behavior maintained by access. As well, further substantiation of choice-making interventions for avoidance maintained behavior was suggested (Romaniuk et al., 2002).

Future Research

The use of FBA to develop function-based intervention has been demonstrated to be effective in changing problem behaviors of students with E/BD in the classroom (Umbreit & Blair, 1996). However, the number of studies of function based interventions for students with E/BD remains relatively small (Lane, Umbreit, & Beebe-Frankenberger, 1999) especially related to choice-making. Future research has been suggested to establish the effectiveness of a priori FBA as part of function based interventions for students with E/BD in the classroom (Horner, 1994; Filter & Horner, 2009; Lane, Kalberg, & Shepcard, 2009; Lane et al., 1999).

Romaniuk et al. (2002) sought to extend research involving intervention strategies using choice-making by investigating the effects of a choice-making intervention on problem behavior maintained by access versus avoidance functions. The results of this study found that choice-making opportunities established a functional relation with avoidance maintained behaviors but results for behavior maintained by access were

mixed for one participant (Romaniuk et al., 2002). Romaniuk et al. (2002) did not use a choice-making intervention for access-maintained behaviors in their study. In addition, limitations in various studies have been attributed to mixed results within participants hypothesized by a possible mismatch between behavioral function and type of choice (Kern et al., 2001; Jolivette et al., 2001; Romaniuk et al., 2002). Further research is needed to understand the effectiveness of choice-making as an antecedent intervention and improving the effectiveness of the intervention by matching it to the function of behavior (Filter & Horner, 2009; Liaupsin, Umbreit, Ferro, Urso, & Upreti, 2006). Systematic replication of the Romaniuk et al. study was suggested by the authors to establish a clearer functional relation between choice-making and avoid versus access-maintained innappropriate behaviors in the classroom. Of the research in choice-making interventions for students with E/BD, Morgan (2006) in addition to Romaniuk et al. (2002) stated that limitations regarding confounding variables (e.g., functions of behavior) needed to be investigated further.

Several future directions in the choice-making literature are warranted. Choice-making interventions have had mixed results on the problem behavior of students with E/BD. The number of investigations of choice-making interventions for students with E/BD is relatively small (n = 21) and further research is needed (Morgan, 2006). As well, the majority of research conducted with students with E/BD has been with elementary aged students (Morgan, 2006). Future researchers should expand the age range of students with whom choice-making may have beneficial effects (Jolivette et al., 2001; Morgan, 2006). In addition, Jolivette et al. (2001) and Romanuik et al. (2002) suggested that future research for choice-making interventions be conducted in various classroom

types and also address the social acceptability of the choice-making intervention within these classes. The type of choice used in the choice-making intervention hypothesized to match access needs to be investigated (Ramsey et al., 2010; Romaniuk et al., 2002).

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CHAPTER 2

USING FUNCTION-BASED CHOICE-MAKING INTERVENTIONS TO INCREASE TASK COMPLETION AND ACCURACY AND TO REDUCE PROBLEM BEHAVIORS FOR STUDENTS WITH E/BD

Researchers suggest that a link between inappropriate behavior and poor academic performance exists for students with E/BD as these students characteristically exhibit inappropriate behaviors at increased rates (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004; Trout, Nordness, Pierce, & Epstein, 2003). These students usually have issues with interpersonal relationships, depression, somatization, and learning difficulties that cannot be attributed to intellectual, sensory, or health factors (Individuals with Disabilities Education Improvement Act: IDEIA, 2004). Students may likely experience both short- and long-term negative outcomes such as lower graduation rates and lower acheivement scores as compared to their same age peers without disabilities (Trout et al., 2003). Trout et al. found that students with E/BD had the greatest deficits in math and spelling and were overall one to two grade levels behind their peers. In overall academic achievement, students with E/BD scored within the 25th percentile (Reid et al., 2004). Academic engagement is often low within the classroom as students with E/BD exhibit behavior problems disrupting the environment and impede learning for themselves and their peers (Lane, Carter, Pierson, & Glaeser, 2006; Walker, Ramsey, & Gresham, 2004). These disruptive behaviors and other behavior problems are opposite of the academic expectations, requirements, and routines typically required by classroom teachers (Dunlap et al., 1994; Lane et al., 2006). In the past decade more research has addressed the comorbid academic and behavioral challenges of students with E/BD than in years

past (Lane, Gresham, & O'Shaughnessy, 2002; Lane, Wehby, & Barton-Arwood, 2005). Such research indicates that students who exhibit persistent behavioral problems in the classroom do not respond to class-wide interventions (Kauffman, 2005). Without intervention, students with E/BD who engage in problem behaviors often experience negative impacts in their experiences with peers, teachers, and other school personnel (Gable & Hendrickson, 2000).

Choice-making

A critical aspect of school success is the completion of tasks and the absence of problem behaviors that interfere with the learning of others (Lane, Barton-Arwood, Nelson, & Wehby, 2008). Research of antecedent interventions suggests choice-making may improve task performance and reduce problem behavior (Shogren, Faggella-Luby, Bae, & Wehmeyer, 2004). As well, choice-making can be implemented in a simple manner while maintaining the instructional requirements within the classroom (Kern et al., 2001). For students with E/BD, six studies have sought to decrease problem behavior and increase task completion by providing choice-making opportunities in the classroom (Dunlap et al., 1994; Jolivette, Wehby, Canale, & Massey, 2001; Kern, Mantegna, Vorndran, Bailin, & Hilt, 2001; Powell & Nelson, 1997; Ramsey, Jolivette, Patterson, & Kennedy, 2010; Romaniuk et al., 2002).

The seminal research for choice-making for students with E/BD began with Dunlap et al. (1994) which demonstrated promising results for students exhibiting problem behaviors. Dunlap et al. (1994) intervened using a reversal design with three elementary students with E/BD using choice among tasks. Two of the three students showed positive results for task engagement and a decrease in disruptive behaviors

(Dunlap et al., 1994). Powell and Nelson (1997) followed using a reversal design with choice of academic assignments to reduce the problem behavior of one elementary student. Results of this study were positive with an increase in academic engagement and a decrease in disruptive behaviors. Limitations for this study include small participant size and rival explanations of the function of choice in reducing the problem behavior. Following this study, Kern et al. (2001) intervened on problem behaviors and task engagement for three students using choice of task sequence. Using a reversal design Kern et al. demonstrated a reduction of problem behaviors and an increase in task engagement when choice of task sequence was provided. Next, Jolivette et al. (2001) used choice of task sequence with a multiple baseline across participants with an embedded reversal design to reduce problem behavior and increase task engagement and accuracy for three elementary students with E/BD. Overall, the results of this study were positive yet mixed, possibly due to a mismatch of function and choice type for one student. More recently, Ramsey et al. (2010) used a reversal design with choice of task sequence to reduce problem behaviors and increase time on-task, task completion, and accuracy for five adolescent students in a residential facility. Results were positive for four of the five students. It was hypothesized that the fifth student's function was access and choice of task sequence may not have matched the function of behavior (Ramsey et al., 2010). To address some of the mixed results of these studies researchers suggest further research to understand the efficacy of antecedent choice-making opportunities and behavioral function on the reduction of problem behavior and the increase of task engagement for students with E/BD.

Future Directions in Choice-Making for Students with E/BD

Given the small number of studies (n = 6) and combined total of 21 participants, future research directions have been suggested across the studies (Dunlap et al., 1994; Jolivette et al., 2001; Kern et al., 2001; Powell & Nelson, 1997; Ramsey et al., 2010; Romaniuk et al., 2002) to further replicate choice-making with students with E/BD to draw further generalizability across this population. Romaniuk et al. and Kern et al. indicated that future research should examine the feasibility of choice-making interventions in various classroom environments. Jolivette et al. and Ramsey et al. indicated that treatment acceptability should be assessed to ascertain whether teachers will continue to implement choice-making after a study is concluded. Finally, Kern et al., Jolivette et al., Ramsey et al., and Romaniuk et al. indicated that future research is needed to delineate the role of behavioral function on the effectiveness of choice-making interventions and of matching specific types of choice-making opportunities to the function of behavior.

Functional behavioral assessment (FBA) has grown in importance in the literature for students with E/BD as a means to improve the effectiveness of behavioral-indicated interventions (Heckaman et al., 2000; Umbreit et al., 2007). Umbreit et al. asserts that mild to severe behavior problems have been successfully treated in a variety of academic settings when based on an FBA. A priori FBA may lead interventionists to develop or select more effective behavioral interventions based on the function of behavior (Umbreit et al., 2007). When interventions are implemented which do not match the function of behavior, problems may occur such as strengthening the inappropriate behavior and/or have no effect (Ingram, Lewis-Palmer, & Sugai, 2005; Umbreit et al., 2007). For

example, limitations in choice-making research have been attributed to confounding variables such as the function of behavior alongside the type of choice. Of the six studies mentioned above matching behavioral function and choice-making interventions was a limitation. Because of these limitations, further research in this area is needed to understand the effectiveness of function based choice-making opportunities and to further address the mixed choice-making intervention results.

Reid and Nelson (2002) also add that interventions based on the function of behavior may help students with E/BD develop more adaptive skills in the classroom. Within the choice-making literature results have suggested that avoidance-maintained problem behavior may benefit from choice of task demands but few researchers have explicitly linked antecedent choice-making opportunities to the function of behavior in interventions (Romaniuk et al., 2002). In addition, researchers have suggested that students with access-maintained problem behavior may not benefit from choice of task sequence (Romaniuk et al., 2002). Romaniuk et al. directly assessed the function of behavior and of choice-making and stated that choice of task sequence often matched avoidance-based behaviors. Romaniuk et al. found that students whose behaviors was avoidance-based responded to choice of task sequence over students whose behaviors was access-maintained. These researchers indicated that further function based choice-making interventions be investigated to determine the functional relations of functioned based choice-making opportunities and the reduction of problem behavior. Lancioni, O'Reilly, and Emerson (1996) and Jolivette et al. (2001) postulated that choice-making interventions may match different functions of behavior and indicated that further research was necessary to better understand choice-making opportunities and their affect

on problem behavior. In addition, Ramsey et al. (2010) hypothesized a mismatch of function and choice-making type given the mixed results for one study participant.

Avoid and access are both hypothesized functions for disruptive and off-task behavior in the classroom (Dunlap et al., 1993; Heckaman et al., 2000; Romaniuk et al., 2002). The ability to offer various types of choices in the classroom may match these functions of innappropriate behavior (Romanuik et al., 2002). The choice-making research conducted by Jolivette, McCormick, McLaren, and Steed (2009), Jolivette, Stichter-Peck, Sibilisky, Scott, and Ridgley (2002), Lancioni, O'Reilly, and Emerson (1996), Shevin and Klein (1984), and Sigafoos (1998) have specified ten types of choices. These ten types of choices match either access- or avoid- based behavior (Jolivette et al., 2009; Jolivette et al., 2001; Lancioni et al., 1996; Shevin & Klein., 1984; Sigafoos, 1998). Choices which match the function of access include: (a) who, with whom the student is going to complete tasks; (b) where, the location of the task; (c) future, what the student will do in the future; (e) within, specific materials or aspects within the task; and (f) tangible, access to items before, during, or after the task. The function of avoid is matched with the following five types of choices: (a) when, the time the task begins; (b) between/among, choice of what task the child will work on; (c) terminate, the time the task will end; (d) refusal, whether or not to start or finish a task; and (e) alternative, how the student will complete the task. Within the classroom certain types of choices work better than others given the logistics of the class and lesson as well as the developmental and ability level of a student (Jolivette et al., 2002). Providing choices of refusal, whom, and alternate may interfere with objectives and mastery of a lesson. For example, if a lesson objective is to complete an academic task, termination

may not be appropriate for task completion and accuracy. Depending on the availablity of staff it may not be possible to provide choices of who to complete a task with and the student may become disruptive when a peer is chosen. Tangibles also may become disruptive as well as cost prohibitive. Several literature reviews indicate providing choice-making opportunities has had positive effects on the behaviors of students with E/BD (Kern et al., 1998; Lancioni et al., 1996; Morgan, 2006; Shogren et al., 2004). Choice-making has been empirically validated for students with developmental and severe disabilities but further research is needed for students with E/BD (Jolivette et al., 2001).

Overall, of the six studies for students with E/BD, choice-making interventions consist of limitations related to: the number and age of participants, classroom settings, intervention acceptability, maintenance, length of intervention, and matching choice-making types to the function of behavior (Dunlap et al., 1994; Jolivette et al., 2001; Kern et al., 2001; Powell & Nelson, 1997; Ramsey et al., 2010; Romaniuk et al., 2002). The research questions for this study were

1. What effect does choice of task sequence and choice of where linked to the function of behavior have on class disruption, task completion, and accuracy?
2. To what extent will the effect on the dependent variables be maintained without intervention?
3. To what extent is functioned-based choice-making socially acceptable to teachers?

Methodology

Participants and Setting

Nine middle school students, ages 12-16, participated in the study. Nineteen, sixth through eighth grade students with a primary disability area of E/BD based on state and federal guidelines served in a residential facility were identified. From the nineteen possible participants, ten met the inclusion criteria. The inclusion criteria for study participation were: (a) primary diagnosis of emotional behavior disorder (E/BD), (b) functioned academically in mathematics two or more grade levels below the current grade level, (c) were nominated by the teacher or education director based on inappropriate behaviors that interfered with task completion during independent practice, (d) behaviors were maintained by either avoid or access function, and (e) were in sixth through eighth grade. All participants received psychotropic medications during the study however no changes in type or dosage occurred for the duration of the study. Consent was obtained for ten students. However, after 16 sessions, one student withdrew consent to participate (see Table 1 for participant demographics; the data for this student beyond demographic information are not presented). One teacher, a White female with 2 years of teaching experience at the school participated in the study. The teacher was provisionally certified with a bachelor's degree in psychology.

The settings were two middle school mathematics classrooms at a residential facility located in a major metropolitan city in the southeast. The residential school has a total of 77 students and 11 teachers. The math classrooms each had four to eight students, one teacher, and a behavior specialist. Each intervention session was conducted for 15

Table 1

Participant Characteristics

Student	*Age*	*Grade*	*Gender*	*Ethnicity*	*Disability*	*Disruptive Behaviors*[1]	*Function*
Sondra	14	8	Female	Hispanic	E/BD	1, 2, 5	Access
Amanda	13	7	Female	White	E/BD	1, 2, 5	Access
Parvati	14	8	Female	White	E/BD	1, 2, 5	Access
Russel	12	7	Male	White	E/BD	2	Access
Coby	13	7	Male	White	E/BD	1, 3, 6	Avoid
Rupert	14	8	Male	White	E/BD	1, 6	Avoid
Coach	12	6	Male	African American	E/BD	1, 2, 3, 4, 5	Access
Jerri	14	7	Female	White	E/BD	1, 2, 3, 5, 6	Avoid
JT	12	6	Male	African American	E/BD	1, 2, 5	Access
Randy[2]	16	6	Male	White	E/BD	1, 2, 3, 4, 5	Avoid

Note. [1] Disruptive behaviors, per FBA data: 1 = noncompliance, 2 = inappropriate vocalizations, 3 = elopement, 4 = destruction of property, 5 = physical aggression, 6 = sleeping.

[2] After 16 sessions, Randy withdrew his consent to participate.

minutes during independent work time in the mathematics classroom across consecutive school days.

Functional Behavior Assessment

A functional behavior assessment was conducted to determine the function of problem behavior for student participants. A four-step FBA process was followed from Sugai, Lewis-Palmer, and Hagan (1999) with additions from Umbreit et al. (2007).

First, a description of the problem behavior was developed for each of the participants. Historical and archival data on the reported problem behavior and multiple indirect measures were used to develop a description of the problem behavior for each participant. The teacher and education director described in detail the topography of the most problematic behavior for each student and completed the Problem Behavior Questionnaire (PBQ) (Lewis, Scott, & Sugai, 1994) followed by the Functional Assessment Checklist for Teachers and Staff (FACTS) interview (March, Horner, Lewis-Palmer, Brown, Crone, Todd & Carr, 2000) (see Appendices A and B). Once the FACTS and PBQ were completed by the teacher and education director the researcher operationally defined the target behavior based on the information provided. The operational definition was presented to the teacher and education director for each student and revised based on their input.

The second step was to determine the conditions under which the behavior occurred from both indirect and direct data sources to refine the operational definition of the problem behavior. Using the information from the FACTS and PBQ, the conditions that the problem behaviors were most likely to occur in the math class was determined. Five direct observations of the problem behavior were conducted in the mathematics

class. Direct observational data were taken on an Antecedent-Behavior-Consequence (ABC) (Cooper, Heron, & Heward, 2007) iPod application called Behavior Tracker Pro that electronically recorded frequency and duration data and information on the antecedents and consequences (see Appendix C). The data collected during the direct observations were used to confirm the conditions for each student. A refined operational definition was written and shared with the teacher and education director.

Step three involved the consolidation of the indirect data and ABC observations to form a testable hypothesis of the function of the problem behavior formulated for each participant.

Step four involved taking direct observational data to verify the accuracy of the hypothesis of the function of the problem behavior for each participant (Sugai, Lewis-Palmer, & Hagan, 1999; Umbreit et al., 2007). Direct observation data were taken on the A-B-C iPod application for three sessions during the fifteen minute independent math assignments to verify consistent patterns of antecedents, behaviors, and consequences across observations based on the hypothesis of function. Once verification of the hypothesis was substantiated by the A-B-C data, the function of behavior was determined.

Materials

The materials used for this study were selected from the school's math curriculum and supplemented with worksheets from the math-support curriculum. The supplemental materials were chosen to facilitate additional in-class, independent practice opportunities for students. The materials were adapted to be equal in length (e.g., the number of problems and anticipated time to complete) and met the math skill level for independent

practice. Adaptation of the independent assignments was based on: (a) classroom observation during independent assignment work periods (b) the specific academic objective for the math lesson (c) each student's individualized education program math goals and (d) each student's current educational achievement based on the current year's educational testing and classroom-based assessments.

Dependent Variables and Data Collection

The duration of disruption during the 15-minute independent work time was displayed on the iPod screen and data were uploaded to an Excel file. Percentage of class disruption was calculated by dividing the total time the student was engaged in disruptive behavior by 15 minutes. Operational definitions for disruption by student are displayed in Table 2. Permanent product data were collected each session and recorded in the Excel file. Permanent product percentage of task completion was calculated by dividing the number of items completed by the total number of items on the assignment. Permanent product accuracy were calculated by the total number of items correct divided by the total number of items on the assignment.

Design

A reversal design was used to evaluate the effects of the choice-making interventions (Kazdin, 1982; Kennedy, 2005). "Baseline" represented the baseline no choice condition, which was commensurate with the current classroom environment. "Task Sequence" represented the avoidance-maintained condition where choice of task sequence was implemented by the teacher. "Where" represented the access-maintained condition of choice of where, and "Maintenance" corresponded to the maintenance phase. The sessions were counterbalanced across students to reduce sequencing effects and

Table 2

Operational Definitions for Disruption

Participant	Operational Definition for Disruption
Sondra	noncompliance, inappropriate vocalizations, physical aggression
Amanda	noncompliance, inappropriate vocalizations, physical aggression
Parvati	noncompliance, inappropriate vocalizations, physical aggression
Russel	inappropriate vocalizations
Coby	noncompliance, elopement, sleeping
Rupert	noncompliance, sleeping
Coach	noncompliance, inappropriate vocalizations, elopement, destruction of property, physical aggression
Jerri	noncompliance, inappropriate vocalizations, elopement, physical aggression, sleeping
JT	noncompliance, inappropriate vocalizations, physical aggression
Randy	noncompliance, inappropriate vocalizations, elopement, destruction of property, physical aggression

students ended in the more effective phase. The decision rule to move from one phase to the next was stability of disruption defined as 50% either side of the mean across five consecutive sessions.

Teacher and Data Collector Training

The researcher conducted one, two-hour training session in the conference room of the residential school with the teacher. Training included an overview of choice-making in the classroom, the choice-making procedures for task sequence and choice of where, assignment selections and preparation, and procedures for data collection and problem solving. The training format included modeling of the two choice-making procedures, discussion of assignment selection and preparation, and teacher practice of the choice-making procedures and assignment selection and preparation. Using the procedural fidelity checklist (see Appendix D), the researcher observed and evaluated the teacher's implementation of the choice-making procedures in a role-playing situation. During the training session, the researcher also reviewed the data collection procedures for the permanent product data collection. The teacher demonstrated 100% mastery of both choice-making procedures as indicated on the procedural fidelity checklist. Also, one graduate student was trained on the data collection procedures for the study. The use of the iPod application and components of the data collection procedures were demonstrated and elucidated in a training session. Examples and nonexamples of disruptive behavior and operational definitions were reviewed for each participant. Data collection training in the classroom was conducted until the data collection personnel was familiar with the iPod application and 100% agreement for duration was reached between the researcher and data collector.

Function Based Choice-Making Intervention

A total of four conditions were used. They were Baseline, Choice of Task Sequence, Choice of Where to Complete Tasks, and Maintenance.

Baseline. (A) The teacher presented the students with two independent math tasks by placing the two tasks in front of the student on his/her desk and saying, "You have two assignments to complete." The teacher then described the two assignments and asked if the student had any questions about the assignments. During the baseline condition, the teacher told the students they had to complete both math assignments, chose the order of the assignments and gave the students the two assignments to complete in the 15 minutes of independent practice during math at the assigned desk.

Choice of task sequence. (B) During the condition to address avoidance-maintained behavior, choice of task sequence, the teacher followed a five-step modified method (Jolivette et al., 2001) to provide choice-making opportunities during independent math assignments. The teacher presented the students with two independent math tasks by placing the two tasks in front of the student on his/her desk and said, "You have two assignments to complete." The teacher then described the two assignments and asked if the student had any questions about the assignments. Then the teacher asked, "Which assignment would you like to complete first?" When the student made his or her choice, the teacher wrote a "1" on the top of the chosen sheet and a "2" on the second sheet, gave the student the assignments, and prompted the student to begin work.

Choice of where to complete the math task. (C) During the choice of where condition to address access maintained behavior, the teacher followed a four-step method to provide choice-making opportunities of where to complete tasks in the classroom. The teacher presented the students with two independent math tasks by placing the two tasks in front of the student on his/her desk and said, "You have two assignments to complete." The teacher then described the two assignments and asked if the student had any

questions about the assignments. The math assignments were given to the student in an order chosen by the teacher. Next, the teacher said, “You can choose where to complete your math tasks, where would you like to work?” When the student replied with their choice, the teacher chose the assignment to complete and wrote the choice of where on the top of the math assignments. The teacher then prompted the student to go to that place and begin work. If the student did not make a choice of where after the presentation of the math assignments the teacher repeated the where choice steps and followed up with, “Where would you like to work?” The student was again prompted to begin work.

Final Phase. Given that all participants were counterbalanced, it was feasible that a student may have ended in an intervention phase that was less effective. In this case, the participant was returned to the phase with the lowest levels of disruption no matter the function and then the study was ended.

Maintenance. Upon termination of the most effective intervention phase of the study, data were collected for each participant on three occasions in one-week intervals following the termination of the more effective phase to assess the maintenance of the intervention results. During the maintenance phase the teacher continued implementing the interventions but without support from the researcher.

Fidelity

To assess treatment fidelity of the choice-making conditions the researcher observed the teacher in the classroom during 31-52% of sessions using the procedural fidelity checklist (see Appendix D). Percentage of treatment fidelity was calculated by dividing the number of observed correctly completed expected steps by the total number of steps for the intervention and multiplying by 100%. Interobserver agreement (IOA)

data for treatment fidelity were assessed during 31-52% of fidelity checks using point-by-point agreement (Kazdin, 1982; Kennedy, 2005). The formula used was the number of agreements for expected steps divided by the agreements plus disagreements for expected steps multiplied by 100% (Kazdin, 1982; Kennedy, 2005). Fidelity and IOA were calculated for 39% of sessions for Sondra, Russel, and Coach; Rupert, 98% mean (range, 90% to 100%); 41% of sessions for Amanda, Parvati, and JT all with a mean of 100% and IOA with a mean of 100% for all participants. Fidelity and IOA were calculated for 31% of sessions for Coby with a mean fidelity of 98% (range, 90% to 100%) and a mean IOA of 100%, 52% of sessions for Jerri with a mean of 100% (range, 90% to 100%) and a mean IOA of 100%.

Interobserver Agreement

Interobserver agreement (IOA) data for disruption were collected during 31-52% of sessions for each student distributed across all phases. Interobserver agreement for task completion and accuracy was calculated using point-by-point agreement (Kazdin, 1982; Kennedy, 2005). The formula used are the number of agreements divided by the agreements plus disagreements multiplied by 100%. Interobserver agreement for duration of class disruption was completed by synchronously taking observational data using the Behavior Tracker Pro on two IPods. Synchronization of observation occurred by both observers at the beginning of the observational period with a three-count countdown and verified by the time and date stamp in the Behavior Tracker Pro application. Interobserver agreement for duration was determined by total agreement. The total agreement formula was calculated by dividing the smaller total duration by the larger total duration and multiplying the quotient by 100% (Kennedy, 2005). IOA data were

collected for Sondra, Russel, Rupert, and Coach for 39% of total sessions and for 41% of total sessions for Amanda, Parvati, and JT. IOA data were collected for Coby during 31% of total sessions, and for Jerri during 52% of total sessions. IOA for class disruption was 100% for Sondra, Russel, Rupert, and Coach, 99% (range, 95% to 100%) for Amanda, 99% (range, 95% to 100%) for Parvati; Coby, 98% (range, 94% to 100%); and JT, 97% (range, 95% to 100%). Task completion and accuracy IOA data were conducted on 55% of permanent product data for each student. IOA for task completion and accuracy was a mean of 100% for each student.

Results

Limitations in the research line for antecedent choice-making opportunities for students with E/BD have researchers hypothesizing that some choice-making types match avoid-maintained behavior and others access-maintained behaviors. For students with E/BD function-based choice-making as an intervention has only been reported in one study and further research is necessary. The results of this study are reported below.

Access-maintained behavior

Figures 1, 2, 3, 4, 5, and 6 represent the percentage of task completion, accuracy, and disruptions for Sondra, Amanda, Parvati, Coach, and JT with access-maintained behavior. Table 3 represents the means and ranges per phase and Table 4 represents the overall means and ranges for task completion, accuracy, and disruption.

For the participants with access-maintained behavior, Sondra, Amanda, and JT had overall means that indicated choice of where was the more effective intervention phase. Parvati and Russel had overall means that indicated choice of task sequence was

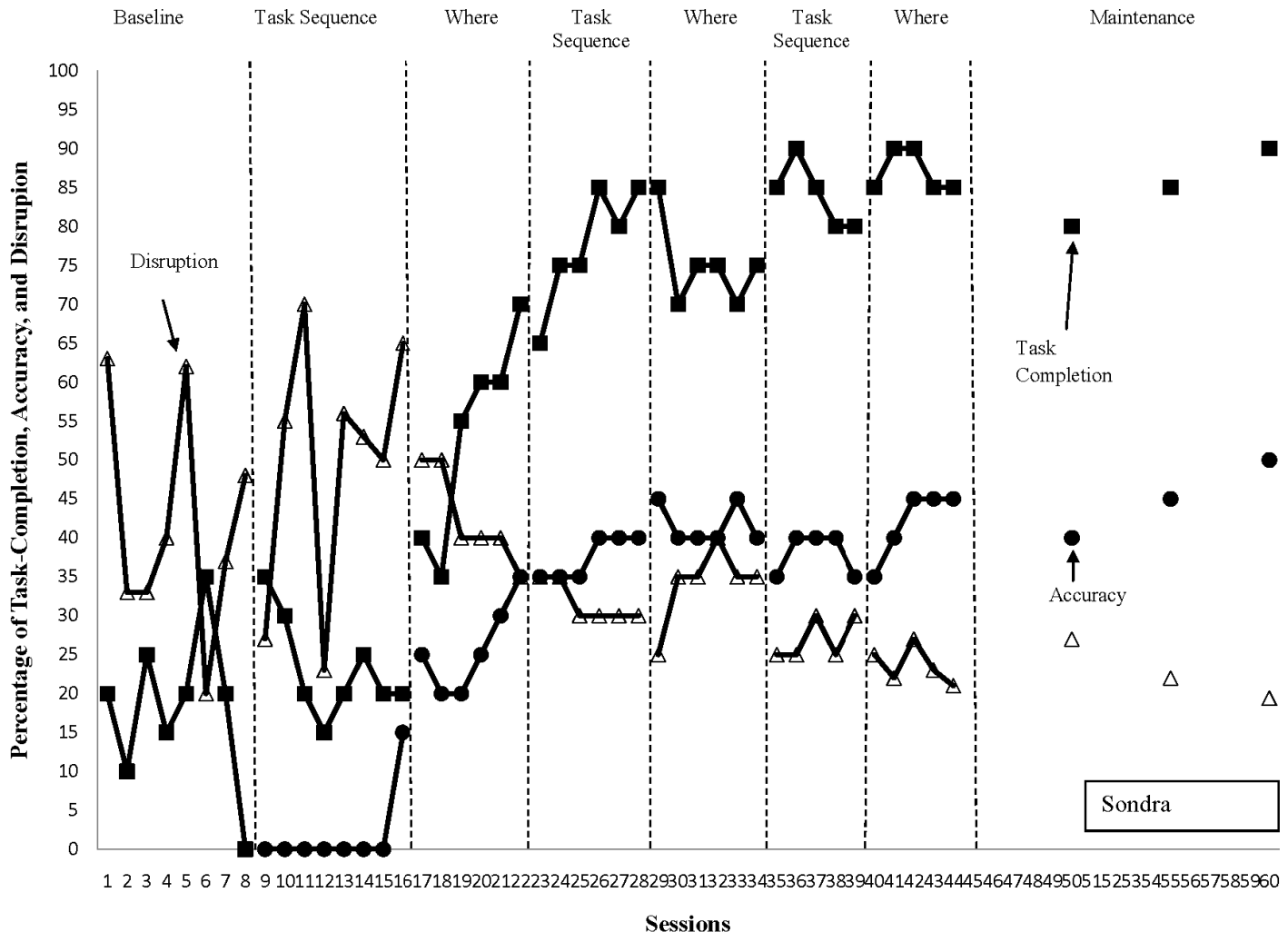

Figure 1. Percentage of Task Completion, Accuracy, and Class Disruption for Sondra. An open diamond delineates clas disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

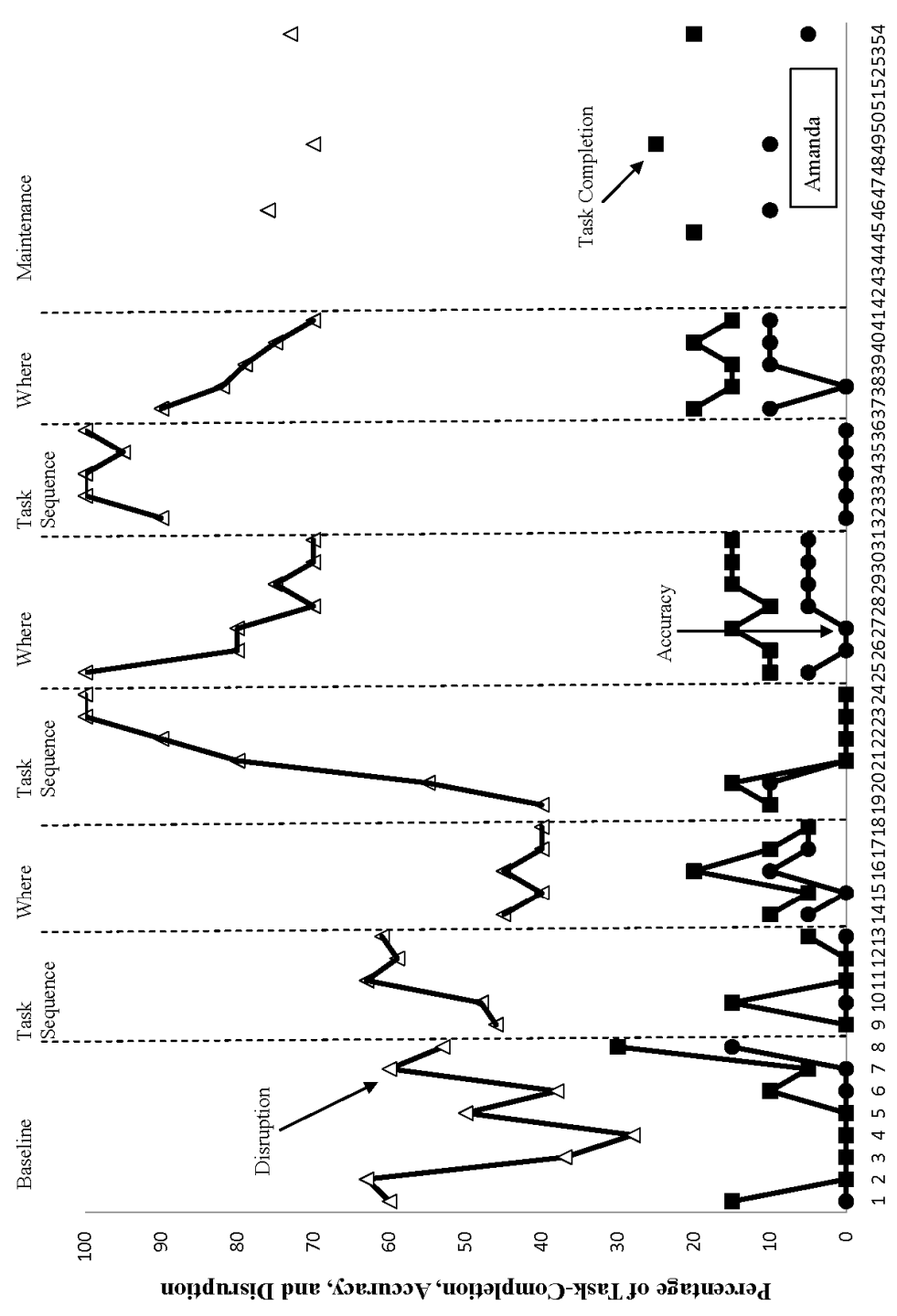

Figure 2. Percentage of Task Completion, Accuracy, and Class Disruption for Amanda. An open diamond delineates class disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

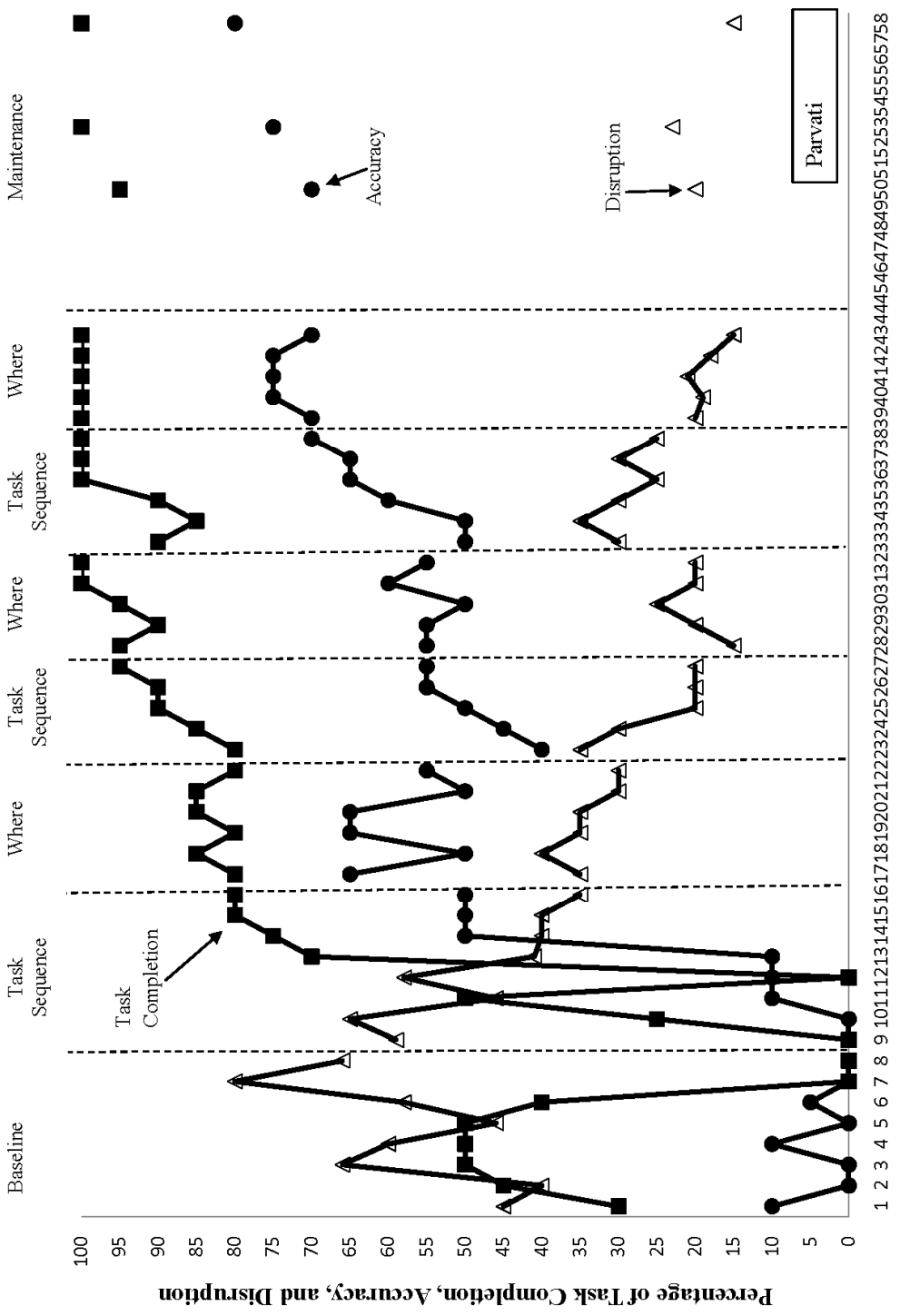

Figure 3. Percentage of Task Completion, Accuracy, and Class Disruption for Parvati. An open diamond delineates class disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

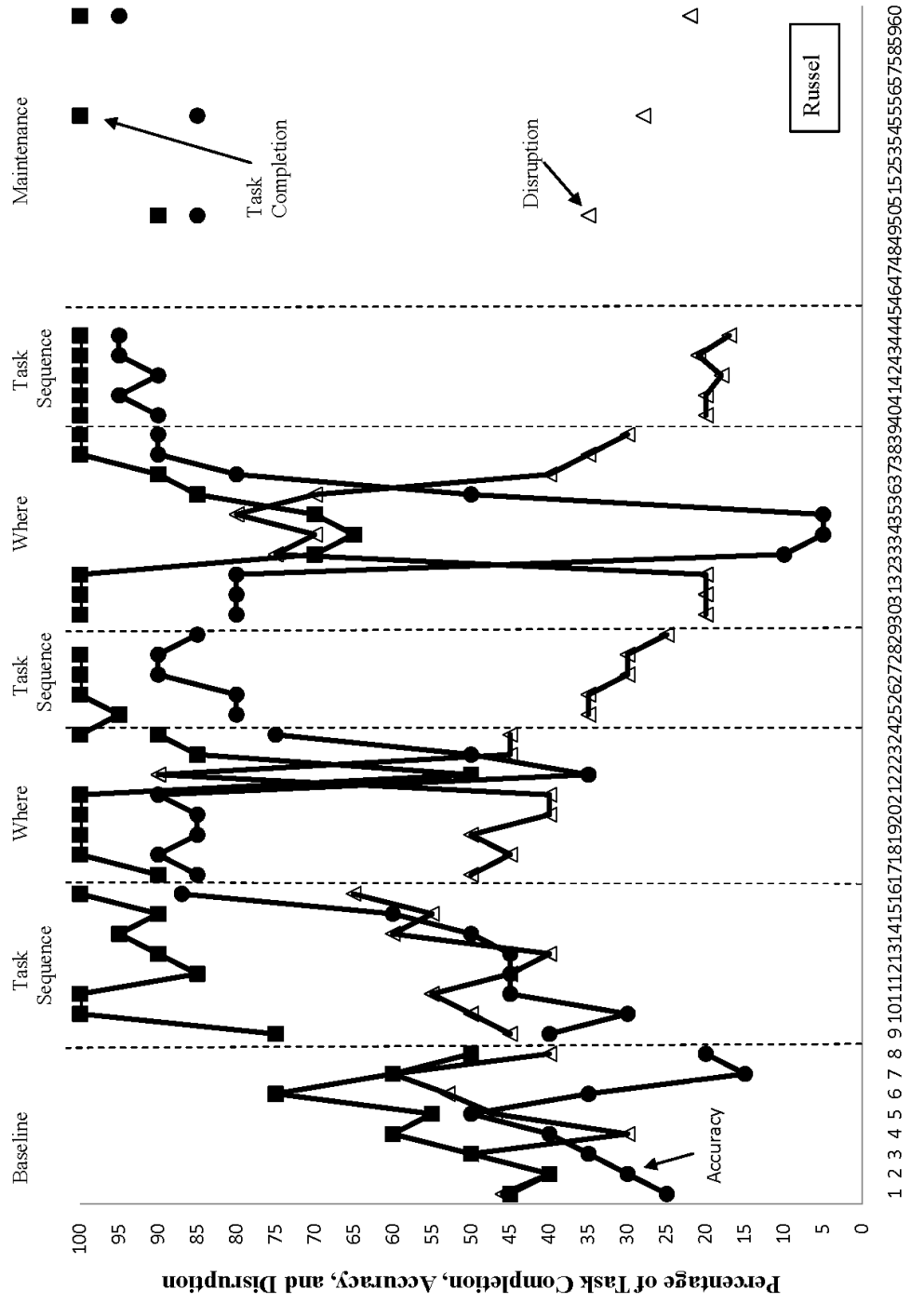

Figure 4. Percentage of Task Completion, Accuracy, and Class Disruption for Russel. An open diamond delineates class disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

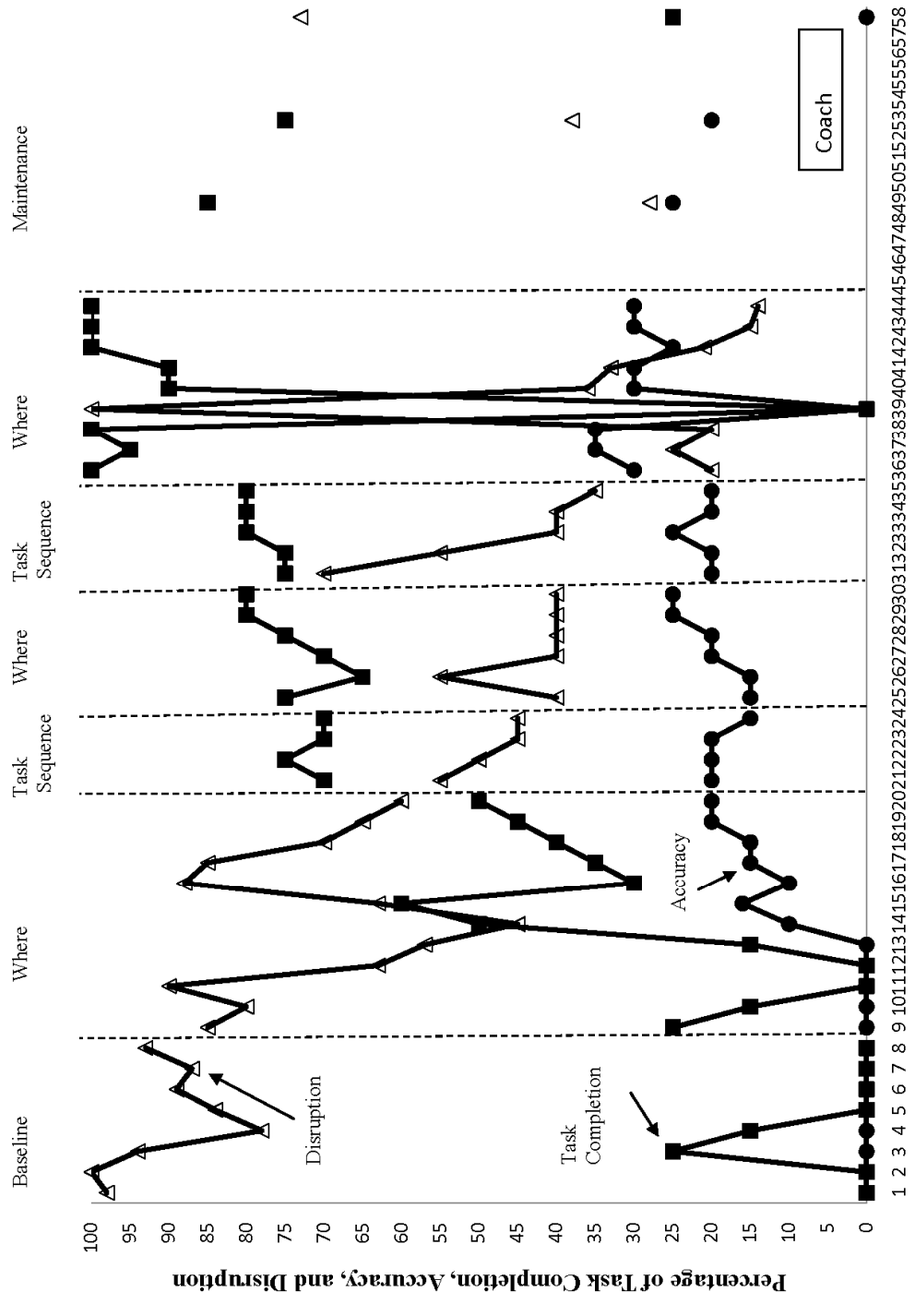

Figure 5. Percentage of Task Completion, Accuracy, and Class Disruption for Coach. An open diamond delineates class disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

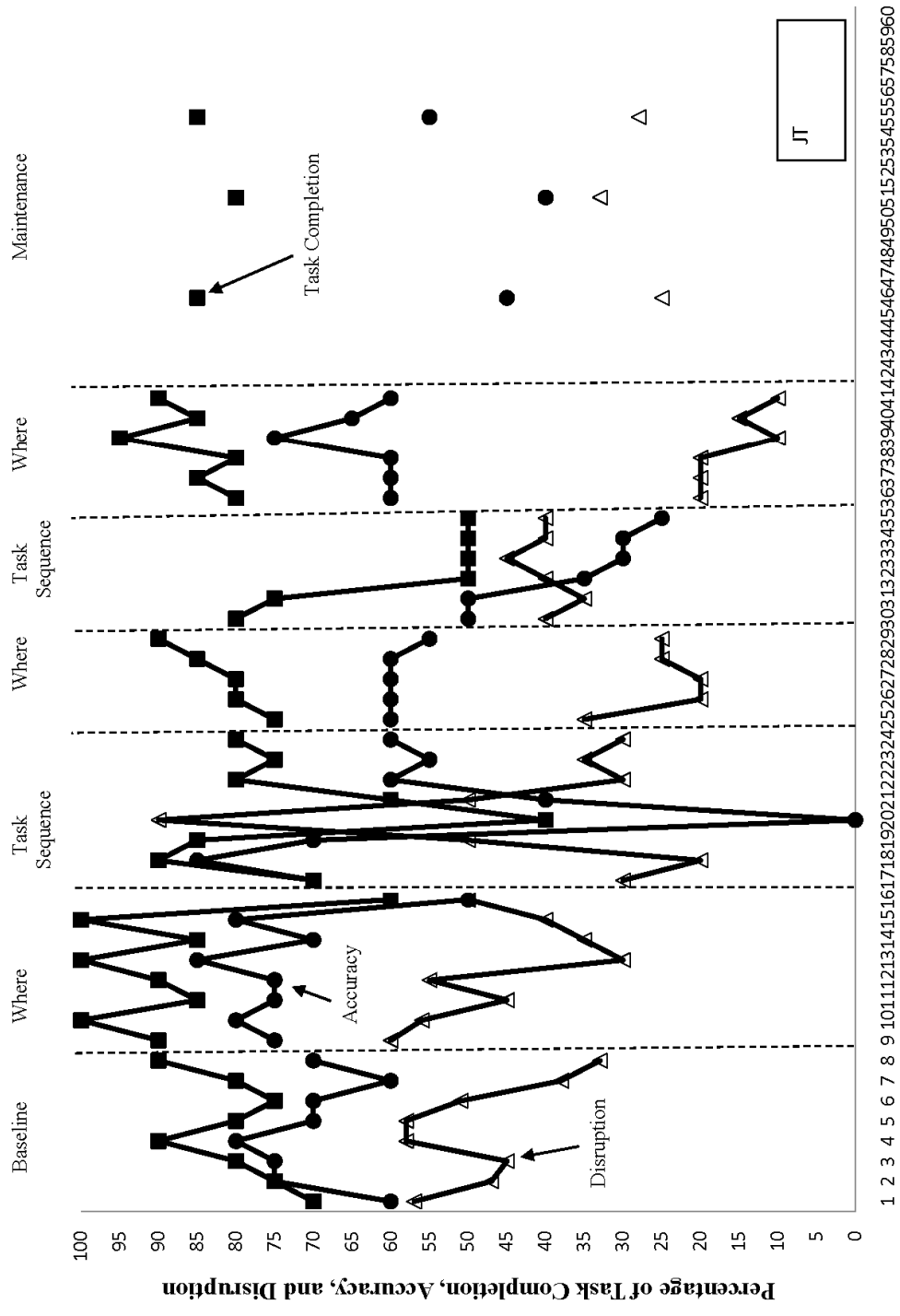

Figure 6. Percentage of Task Completion, Accuracy, and Class Disruption for JT. An open diamond delineates class disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

Table 3

Access-maintained Behavior Means and Range per Phase

Student	*Data*	*Baseline*	*Task Sequence*	*Where*	*Task Sequence*	*Where*	*Task Sequence*	*Where*
Sondra	*Task Completion*	18.12%	23.12%	53.33%	77.5%	75%	84%	87%
		(0%,35%)	(15%,35%)	(35%,70%)	(65%,85%)	(70%,85%)	(80%,90%)	(85%,90%)
	Task Accuracy	0%	1.87%	25.83%	37.5%	41.66%	38%	45%
			(0%,15%)	(20%,35%)	(35%,40%)	(40%,45%)	(35%,40%)	(45%,45%)
	Disruption	42%	49.87%	42.5%	31.66%	34.16%	27%	23.2%
		(20%,63%)	(23%,65%)	(35%,50%)	(30%,35%)	(25%,40%)	(25%,30%)	(20%,27%)
Amanda	*Task Completion*	7.5%	4%	10%	4.16%	12.85%	0%	17%
		(0%,30%)	(0%,15%)	(5%,20%)	(0%,15%)	(10%,15%)		(15%,205)
	Task Accuracy	1.87%	0%	5%	3.33%	3.57%	0%	8%
		(0%,15%)		(0%,10%)	(0%,10%)	(0%,5%)		(0%,10%)
	Disruption	48.62%	55.4%	42%	77.5%	77.85%	97%	78.2%
		(28%,63%)	(52%,63%)	(40%,45%)	(40%,100%)	(70%,100%)	(90%,100%)	(70%,85%)
Student	*Data*	*Baseline*	*Where*	*Task Sequence*	*Where*	*Task Sequence*	*Where*	*Task Sequence*
Parvati	*Task Completion*	33.12%	47.5%	82.5%	88%	96%	94.16%	100%
		(0%,50%)	(0%,80%)	(80%,85%)	(80%,95%)	(90%,100%)	(85%,100%)	
	Task Accuracy	3.12%	22.5%	58.33%	49%	55%	60%	73%
		(0%,10%)	(0%,50%)	(50%,65%)	(40%,55%)	(50%,60%)	(50%,70%)	(70%,75%)
	Disruption	57.62%	48%	34.16%	25%	20%	29.16%	18.6%
		(40%,80%)	(35%,65%)	(30%,40%)	(20%,35%)	(15%,25%)	(25%,35%)	(15%,20%)
Student	*Data*	*Baseline*	*Task Sequence*	*Where*	*Task Sequence*	*Where*	*Task Sequence*	
Russel	*Task Completion*	54.37%	91.87%	89.37%	99%	88%	100%	
		(40%,75%)	(75%,100%)	(50%,100%)	(95%,100%)	(65%,100%)		
	Task Accuracy	31.25%	50.62%	74.37%	85%	57%	93%	
		(15%,50%)	(30%,90%)	(35%,90%)	(80%,90%)	(5%,90%)	(90%,95%)	
	Disruption	45.75%	51.87%	50.62%	31%	46%	19.2%	
		(30%,60%)	(40%,65%)	(30%,90%)	(25%,35%)	(30%,80%)	(17%,21%)	
Student	*Data*	*Baseline*	*Where*	*Task Sequence*	*Where*	*Task Sequence*	*Where*	
Coach	*Task Completion*	5%	30.41%	71.25%	74.16%	78%	86.11%	
		(0%,25%)	(0%,60%)	(70%,75%)	(65%,80%)	(75%,80%)	(0%,100%)	
	Task Accuracy	0%	8.83%	18.75%	20%	21%	27.22%	
			(0%,20%)	(15%,20%)	(15%,25%)	(20%,25%)	(0%,35%)	
	Disruption	90.37%	70.91%	48.75%	42.5%	48%	31.55%	
		(78%,100%)	(45%,90%)	(45%,55%)	(40%,55%)	(35%,70%)	(14%,100%)	
JT	*Task Completion*	80%	88.75%	72.5%	82%	59.16%	85.83%	
		(70%,90%)	(60%,100%)	(40%,90%)	(75%,90%)	(50%,80%)	(80%,95%)	
	Task Accuracy	70%	73.75%	55%	59%	36.66%	63.33%	
		(60%,80%)	(70%,85%)	(0%,85%)	(55%,60%)	(25%,50%)	(60%,75%)	
	Disruption	48.37%	46.37%	41.87%	25%	40%	15.83%	
		(33%,58%)	(30%,60%)	(20%,90%)	(20%,35%)	(35%, 45%)	(10%,20%)	

Table 4

Access-maintained Behavior Overall Means

Student	*Data*	*Task Sequence*	*Where*
Sondra	*Task Completion*	61.54% (15%,90%)	71.77% (35%,90%)
	Task Accuracy	25.79% (0%,40%)	37.49% (20%,45%)
	Disruption	36.17% (23%,65%)	33.32% (20%,50%)
Amanda	*Task Completion*	2.72% (0%,15%)	13.28% (5%,20%)
	Task Accuracy	1.11% (0%,10%)	5.52% (0%,10)
	Disruption	76.63% (40%,100%)	66.01% (40%,100%)
Student	*Data*	*Where*	*Task Sequence*
Parvati	*Task Completion*	76.55% (0%,100%)	92.83% (80%,100%)
	Task Accuracy	43.83% (0%,70%)	62.11% (50%,75%)
	Disruption	39.05% (20%,65%)	24.25% (15%,40%)
Student	*Data*	*Task Sequence*	*Where*
Russel	*Task Completion*	96.95% (75%,100%)	88.68% (50%,100%)
	Task Accuracy	76.20% (30%,95%)	65.68% (5%,90%)
	Disruption	34.02% (17%,65%)	48.31% (30%,90%)
Student	*Data*	*Where*	*Task Sequence*
Coach	*Task Completion*	63.56% (0%,100%)	74.62% (70%,80%)
	Task Accuracy	18.68% (0%,35%)	19.88% (15%,25%)
	Disruption	56.71% (14%,100%)	48.38% (35%,70%)
JT	*Task Completion*	85.53% (60%,100%)	65.83% (40%,90%)
	Task Accuracy	65.36% (55%,85%)	45.83% (0%,85%)
	Disruption	29.07% (10%,60%)	40.94% (20%,90%)

more effective. Coach had overall means that indicated choice of task sequence was more effective but the last matched choice of where intervention demonstrated variability and Coach was left in the function-matched choice of where.

Avoidance-Maintained Behavior

Figures 7, 8, and 9 and Table 5 display the means and ranges per phase of the percentages of task completion, accuracy, and disruptions for Coby, Rupert, and Jerri's avoidance maintained behavior. Table 6 displays the overall means and ranges for task completion, accuracy, and disruption.

Coby and Rupert's avoidance-maintained behaviors had the higher increase for task completion and accuracy in the choice of task sequence intervention, which was the hypothesized functional match for their avoidance-maintained behavior. The third participant, Jerri, exhibited one data point in baseline other than 100% disruption and 0% for task completion and accuracy, after 29 sessions the decision was made to terminate the intervention in choice of task sequence, which was the hypothesized functional match.

Social validity

The social validity of each treatment condition for this intervention was assessed using the *Treatment Acceptability Rating Form—Revised* (*TARF-R*; Reimers & Wacker, 1988; see Appendix E). Following the conclusion of the study, approximately one week after the last data point of the final phases the teacher completed the *TARF- R* on each student for both types of choice conditions. The *TARF-R* has three factor categories to address treatment acceptability with teacher willingness, perceived effectiveness, and perceived disadvantages. The data from the *TARF-R* were compiled into the three factor

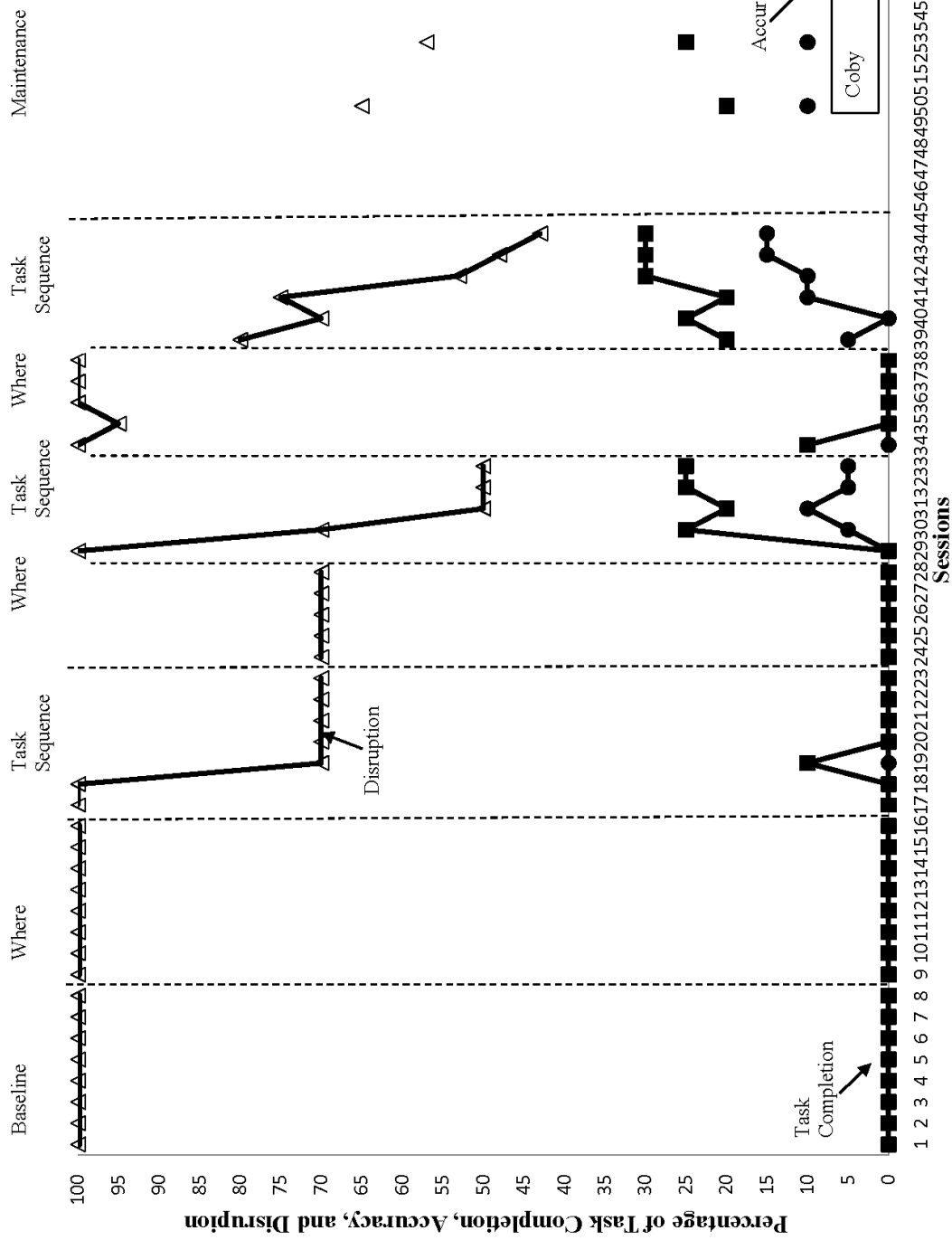

Figure 7. Percentage of Task Completion, Accuracy, and Class Disruption for Coby. An open diamond delineates class disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

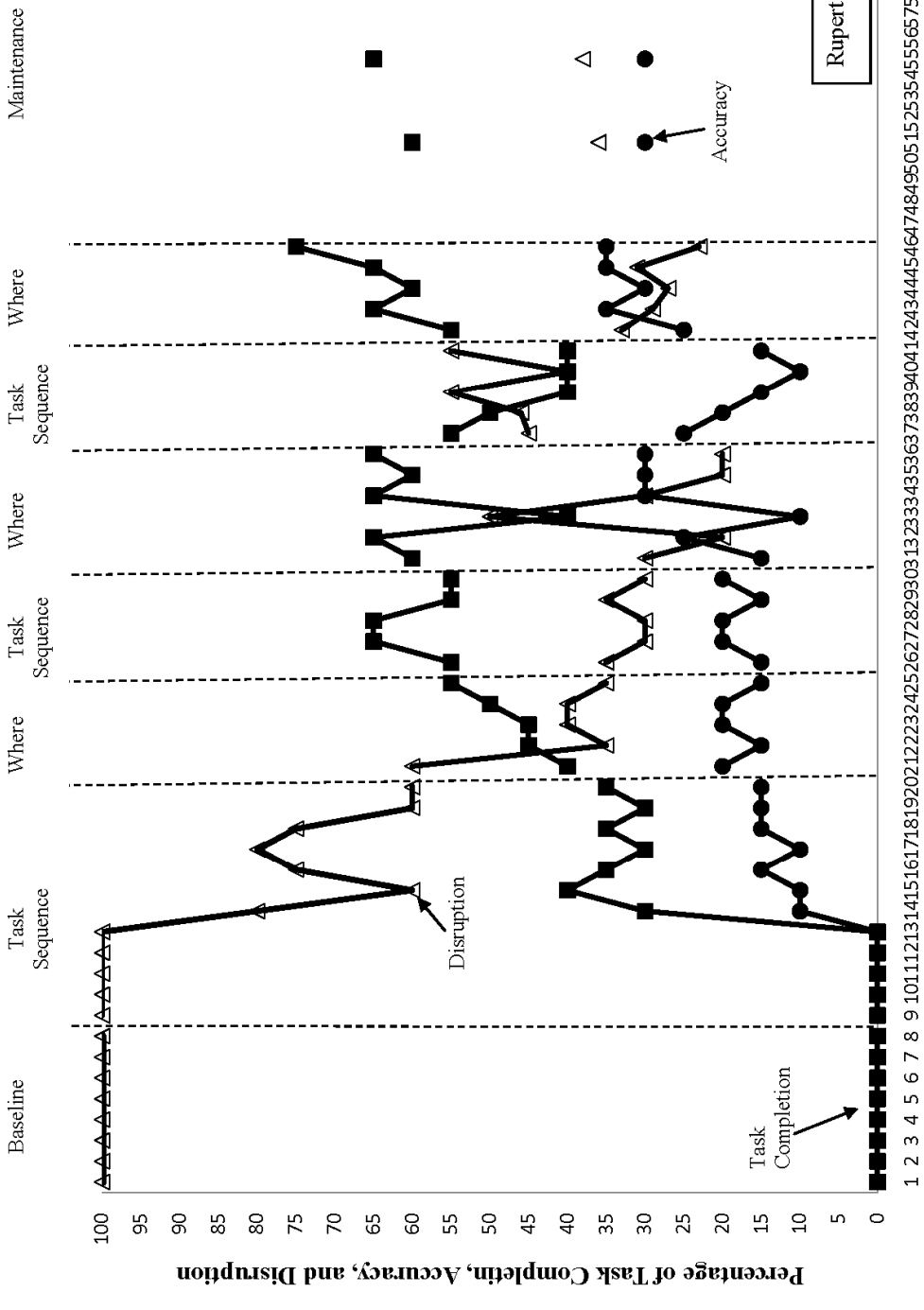

Figure 8. Percentage of Task Completion, Accuracy, and Class Disruption for Rupert. An open diamond delineates class disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

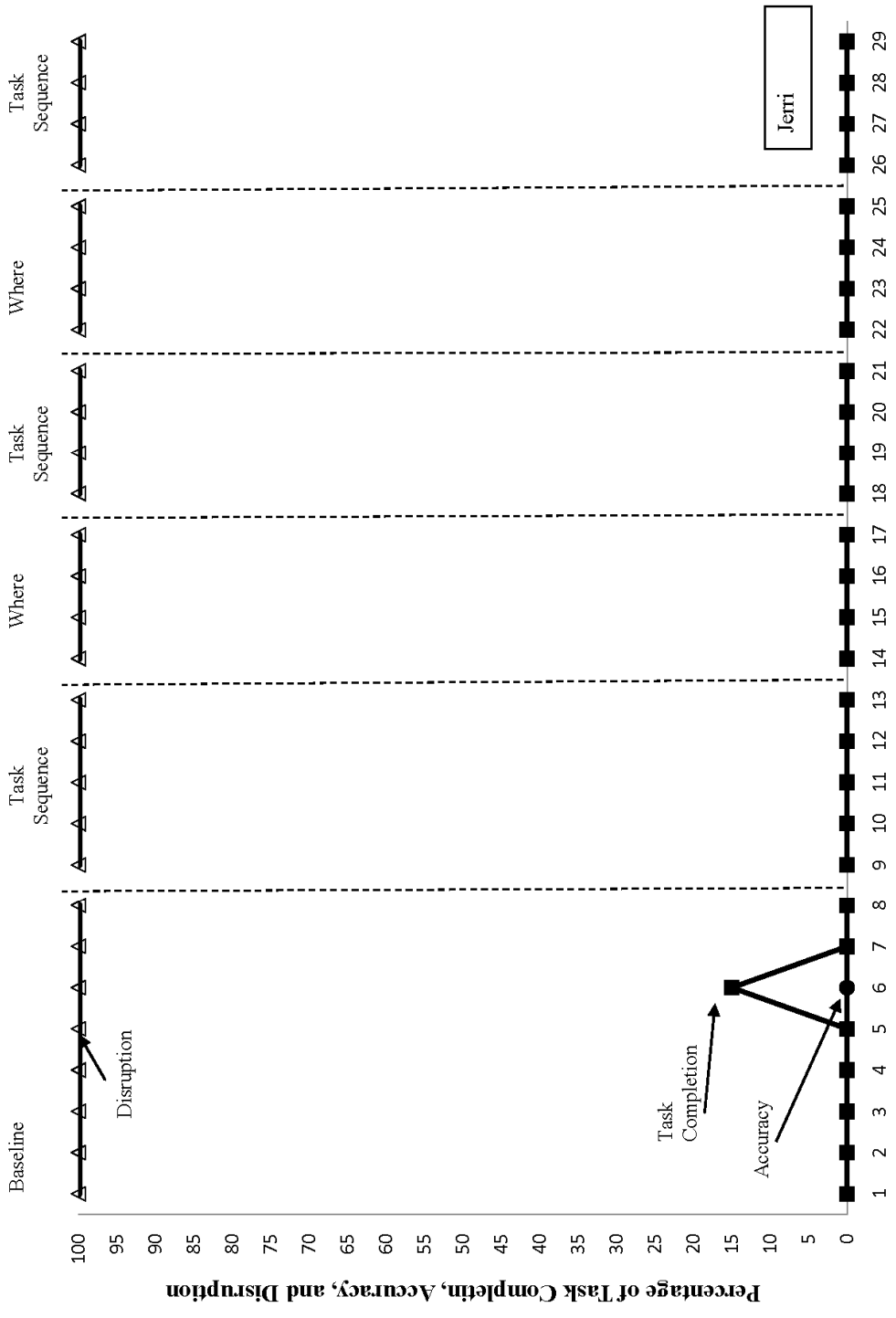

Figure 9. Percentage of Task Completion, Accuracy, and Class Disruption for Jerri. An open diamond delineates class disruption, task completion is displayed with a shaded square, and accuracy is a shaded circle.

Table 5

Avoidance-Maintained Behavior Means and Range per Phase

Student	*Data*	*Baseline*	*Where*	*Task Sequence*	*Where*	*Task Sequence*	*Where*	*Task Sequence*
Coby	Task Completion	0%	0%	1.42% (0%,10%)	0%	19% (0%,25%)	2% (0%,10%)	26.66% (20%,30%)
	Task Accuracy	0%	0%	0%	0%	5% (0%,10%)	0%	9.16% (0%,15%)
	Disruption	100%	100%	78.57% (70%,100%)	70% (70%,70%)	64% (50%,100%)	99% (95%,100%)	61.5% (43%,80%)
Rupert	Task Completion	0%	19.58% (0%,40%)	47% (40%,55%)	59% (55%,65%)	59.16% (40%,65%)	45% (40%,55%)	64% (55%,75%)
	Task Accuracy	0%	7.5% (0%,15%)	18% (15%,20%)	18% (15%,20%)	23.33% (10%,30%)	17% (10%,25%)	32% (30%,35%)
	Disruption	100%	82.5% (60%,100%)	42% (35%,60%)	32% (30%,35%)	28.33% (20%,50%)	48% (40%,55%)	28.6% (27%,33%)
Student	*Data*	*Baseline*	*Task Sequence*	*Where*	*Task Sequence*	*Where*	*Task Sequence*	*Where*
Jerri	Task Completion	2.5% (0%,15%)	0%	0%	0%	0%	0%	0%
	Task Accuracy	1.87% (0%,15%)	0%	0%	0%	0%	0%	0%
	Disruption	100%	100%	100%	100%	100%	100%	100%
Randy	Task Completion	17.5% (0%,40%)	13.13% (0%,35%)					
	Task Accuracy	1.25% (0%,10%)	2.5% (0%,10%)					
	Disruption	4.25% (0%,18%)	27.25% (0%,100%)					

Table 6

Avoidance-Maintained Behavior Overall Means

Student	*Data*	*Task Sequence*	*Where*
Coby	Task Completion	15.69% (0%,30%)	.66% (0%,10%)
	Task Accuracy	4.72% (0%,15%)	0%
	Disruption	68.02% (43%,80%)	89.66% (70%,100%)
Rupert	Task Completion	56.72% (40%,75%)	41.19% (0%,65%)
	Task Accuracy	24.44% (10%,35%)	14.17% (0%,25%)
	Disruption	32.98% (20%,60%)	54.17% (30%,100%)
Jerri	Task Completion	0%	0%
	Task Accuracy	0%	0%
	Disruption	0%	0%

categories and a composite score for each category was calculated for each participant with high scores indicating higher treatment acceptability for the factors of teacher willingness and expected effectiveness and lower scores in perceived disadvantages indicating treatment acceptability.

The teacher completed the TARF-R for each student and results are indicated in Table 7. Overall scores indicate that the teacher found both choice-making interventions to be acceptable for all but one student, Jerri. When reviewing the scores of the TARF-R and calculating the scores for the three factors and reviewing the information provided in

Table 7

Summary of Teacher Acceptability Rating Form—Revised Results by Student

Student	*Factor*	*Where*	*Task Sequence*
Sondra	Total for Teacher Willingness	31	31
	Total for Expected Effectiveness	23	23
	Total for Perceived Disadvantages	18	18
Amanda	Total for Teacher Willingness	31	31
	Total for Expected Effectiveness	22	22
	Total for Perceived Disadvantages	20	20
Parvati	Total for Teacher Willingness	31	31
	Total for Expected Effectiveness	24	24
	Total for Perceived Disadvantages	18	18
Russel	Total for Teacher Willingness	31	31
	Total for Expected Effectiveness	22	22
	Total for Perceived Disadvantages	18	18
Coby	Total for Teacher Willingness	29	29
	Total for Expected Effectiveness	18	18
	Total for Perceived Disadvantages	17	17
Rupert	Total for Teacher Willingness	28	28
	Total for Expected Effectiveness	22	22
	Total for Perceived Disadvantages	18	18
Coach	Total for Teacher Willingness	31	31
	Total for Expected Effectiveness	22	22
	Total for Perceived Disadvantages	20	20
Jerri	Total for Teacher Willingness	20	20
	Total for Expected Effectiveness	11	11
	Total for Perceived Disadvantages	20	20
JT	Total for Teacher Willingness	31	31
	Total for Expected Effectiveness	22	22
	Total for Perceived Disadvantages	18	18

Note. There was variability within factor items.

the remaining questions, the researcher noted that the teacher equally scored both interventions as acceptable for each student with equal perceived disadvantages. The first factor, teacher willingness, the teacher had an overall mean for all nine students of 29 out of a possible 35, indicating an overall willingness to implement the interventions. For the second factor, the mean score was 21 out of a possible 28 indicating that the teacher favorably scored the effectiveness of the interventions. The final factor, perceived disadvantages, the mean rating for the teacher was 19 out of 25 indicating that disadvantages for the interventions were low.

Discussion

This study sought to replicate and extend the current body of research in choice-making interventions for students with E/BD. For the majority of participants in the study, providing choices in the classroom increased their overall task completion and accuracy and reduced disruption. The effectiveness of the function-based choice-making interventions are discussed as well as the maintenance of the intervention and social validity. Future directions for choice-making interventions are proposed as well as limitations for the current study.

Function-Based Choice-Making

All participants of the study had a history of well-established chronic behavioral problems to the extent that they required residential care. Kauffman (2005) indicated that class-wide behavioral interventions were often not effective in changing behavior and this was reflected in the data collected to determine the function of behavior. In addition, these students participated in positive behavioral interventions and supports throughout the facility yet still engaged in low levels of task completion and accuracy as well as high

levels of disruptive behaviors in the classroom. In particular, Coach, Coby, Rupert, and Jerri engaged in disruptive behaviors more than 90% of the time during baseline. As well, Sondra, Amanda, Parvati, JT, and Russel engaged in disruptive behavior nearly 50% of the time in the classroom. With the exception of JT, all participants completed fewer than 40% of the tasks in the math classroom with less than 30% accuracy. Umbreit et al. (2007) indicated that academic variables could sometimes be the antecedent to problem behaviors. The participants also all performed a minimum of two grade levels below their academic grade level. Often, for students with E/BD problem behaviors function as a means to avoid classroom task demands (Filter & Horner, 2009). However, access-maintained behavior also contributes to disruptive behaviors in the classroom and interferes with task completion and accuracy (Filter & Horner, 2009). Broussard and Northup (1995) reported that students with E/BD often engaged in disruptive behaviors to gain access to teachers and peers.

What effect does choice of task sequence and choice of where linked to the function of behavior have on class disruption, task completion, and accuracy? Upon completion of the FBA six participants: Sondra, Amanda, Parvati, Russel, Coach, and JT exhibited access-maintained problem behaviors during math and independent math activities. The hypothesized intervention match to access-maintained behavior was choice of where to complete assignments (Sigafoos, 1998). Sondra, Amanda, and JT all had higher means of task completion and accuracy, with lower means of disruption during this intervention. However, Sondra also improved in the choice of task sequence intervention as well. Results indicate that when choice of where to complete assignments was offered these students decreased disruption more than 10% over baseline. These

results though small numerically, anecdotally translated to a significant reduction of disruption in the classroom. Sondra had gains of more than 50% for task completion and 37% for accuracy. Her disruption levels, based on notes taken during the observational period, indicated that peer interactions increased when Sondra was given an opportunity to choose where to complete assignments by choosing to sit near selected peers. JT also displayed similar behaviors as Sondra by engaging in peer conversation, which may have influenced task-completion, accuracy, and disruption. Amanda displayed higher levels of disruption during both interventions over baseline. On sessions with the higher percentages of disruption, Amanda made various negative statements regarding prior events on the unit related to her. Russel and JT responded better to choice of task sequence over choice of where. Overall, both improved their task completion and accuracy and reduced disruptive behaviors when given opportunities to choose the order in which they completed tasks. Interestingly, JT stated that he preferred to choose where in the classroom he could complete work but he often engaged in more disruption by talking to his peers or staff without permission and completed less work due to his talking. In the Romanuik et al. (2002) study, choice of task sequence was the only intervention provided to the participants. In this study students whose behavior was avoidance-maintained exhibited lower rates of disruption across phases than those participants with access-maintained behaviors. In the present study, the researchers extended the Romanuik et al. (2002) study by matching access-maintained behavior to choice of where, a functional access-maintained behavior as described by Sigafoos (1994).

Answering the first research question of the current study, the researchers replicated and extended studies by: Jolivette et al. (2001), Kern et al. (2001), Romanuik et al. (2002), and Ramsey et al. (2010) for participants with avoidance-maintained behaviors. Coby, Rupert, Jerri, and Randy all exhibited behaviors during math and independent math activities that were maintained by avoidance. Of the four participants, one participant, Randy, withdrew his consent to participate in the study after 16 sessions. Choice of task sequence was the more effective intervention for Coby reducing his disruptive behaviors by approximately 30%. Coby's behavior anecdotally in the classroom appearred to be a socially valid change from his previous behavior of leaving the classroom and/or sleeping for the duration of the class period. Choice of task sequence was effective in reducing Rupert's avoidance-based behaviors. In addition, Rupert increased his task completion from 0% to 57%. Though his accuracy did not improve to a passing average, he continued to make steady progress in increasing his task completion and accuracy. During the FBA, Jerri demonstrated avoidance-maintained behaviors, often verbally stating she was not going to complete work. Only during the baseline phase of data collection did Jerri engage in task completion but with 100% disruptive behavior. Jerri's avoidance behaviors ranged from sleeping to verbally refusing to complete classwork to continuous vocalizations which increased in intensity when presented with a task to complete. Jerri's behavior did not improve during either of the choice-making interventions.

Overall, based on the oberservations of students and anecdotal notes, several future research directions were noted. First, it is speculated that setting events may have played a role in the variability of student behavior in the two math classes. Within

residential facilities school behavior may be negetavily affected by setting events which occur on the unit (Swoszowski, Jolivette, Fredrick, Heflin, & Gagne, in review). Research regarding the role of setting events is needed for future function-based choice-making interventions. Second, furture researchers may investigate the role various student characteristic and classroom variables effect function-based interventions (e.g., comorbid psychiatric disorders). Dunlap et al. (1993) indicated that various classroom variables (e.g., class subject) may affect the function of students' behavior throughout the class time. Third, only two of the possible ten types of choices were slected for this study. Jolivette et al. (2002) indicated that choice-making opportunities were more limited for students who exhibited high rates of behavior with the teacher using redirection and prompts rather than choice making. Future researchers may compare behavioral function with the other types of choices to see if specific types are more effective within classroom environments. Fourth, generalizability and replication with a larger population of students with E/BD should be investigated, as well as using other single-subject designs, such as alternating treatments design to examine the functional relation of function-based choice-making and the demonstration of task completion, accuracy, and disruptive behaviors in the classroom. Limitation of the Ramsey et al. (2010) investigation of choice-making included the adverse affect of study length and complexity of student behavior on the reversal design used. Fifth, future researchers should also look into the generalization of choice-making interventions into other environments and different age groups. For example, researchers should examine the efficacy of choice-making interventions in collaborative classrooms and with high school students.

Maintenance

To what extent will the effect on the dependent variables be maintained without intervention? Maintenance probes were collected for Sondra, Parvati, Russel, Rupert, and JT at one-week intervals for three weeks after the intervention was withdrawn. Amanda's maintenance data indicated she had higher levels of disruption and lower levels for task completion and accuracy than during the intervention phases. Anecdotal notes did indicate that Amanda was exhibiting overall higher levels of problem behaviors throughout the school and unit environments during this time. Coach exhibited the highest levels of disruption during the maintenance intervals with a steady increase over the three weeks. Based on reports from staff, Coach's typical staff were changed, which he verbally protested and this change coincided with the beginning of the maintenance period. No maintenance data were collected on Jerri or Randy because of the lack of any behavioral change for Jerri and because of Randy's withdrawal of his consent to participate in the study. Based on the overall results of the participants, overall reduced levels of disruption and increased task completion and accuracy were maintained without the intervention. Yet, Kennedy (2005) indicated that maintenance of interventions is best established with longer time spans of maintenance data collection. Future researchers may investigate the maintenance of choice-making with longer periods of time between maintenance probes. In addition, future research into the factors that support the maintenance of choice-making interventions by teachers is recommended.

Social Validity

To what extent is functioned-based choice-making socially acceptable to teachers? One week after the termination of the study the teacher completed the TARF-R

to address the social validity of the two choice-making interventions. With the exception of one student, the teacher rated the two interventions positively across the three factors. Jerri was the one student for whom the teacher did not rate the interventions as acceptable. Based on conversations with the teacher a few weeks after the termination of the study, the lack of effectiveness of the interventions on Jerri's behavior influenced the teacher's rating. One factor of the TARF-R, perceived disadvantages, did have some variations in scoring acceptability by student, which was positively or negatively associated with the overall effectiveness of the choice-making interventions on the disruptive behaviors of the participants in the classroom. As with many of the other choice-making studies and students with E/BD (e.g., Jolivette et al., 2001), the TARF-R was used as the social metric. Future researchers may want to investigate the social validity of choice-making with other metrics as well.

Limitations and Future Directions

As with most studies, the conclusions of the present study should be interpreted with caution. First, sample size was a limitation for this study. Due to the small sample size (n=9) results of this study may not be generalized to all students with E/BD in a residential setting. In addition, study participant data were variable. Future researchers may want to increase the number of students with E/BD included in function-based choice-making interventions to add to the choice-making literature with this population, as well as extend the study settings (e.g., general education settings, alternative schools), types of classroom/academic areas, and ages (e.g., high school) for further generalizability.

Second, limitations in the studies of Jolivette et al. (2001), Romanuik et al. (2002), and Ramsey et al. (2010) of nonresponders whose behavior was too variable to determine a functional relation were also present in the current study. For Coach, Jerri, Randy, and Amanda, variability in the intervention data could not be explained simply through observations in the classroom. Other factors, such as comorbid psychiatric diagnosis, setting events, and issues related to family function, may explain the variability in the data. The participant data of Amanda, Russel, and Coach in the current study were variable within intervention phases. Future researchers, especially in regards to students with E/BD served in residential facilities, should study the possible interfering aspects of these factors on the effects of function-based interventions related to choice-making. In addition, the topography of disruptive behaviors of the study participants were different, which may have influenced the data. The participants of the current study exhibited a wide range of disruptive behaviors from talking to peers to physical aggression. This variation in disruptive behaviors may account for the variability of participant intervention data. Future reserchers may want to limit the types and topography of disruptive behavior when selecting future participants.

Third, future research should investigate the types of choices provided to participants which would be less likely to become the antecedent to problem behaviors. In the current study, when Russel was given the choice of where to complete assignments, he chose to move near specific peers and his talking increased thus increasing his disruptive behaviors. Sigafoos (1998) indicated ten types of choices and Jolivette et al. (2002) found that some of these types of choices naturally occur in the classroom, but others are constructed by teachers, especially when offered to students

with disabilities. When choosing the types of choices to be offered in the classroom, the teacher and researcher discussed numerous choices available in the classroom. However, based on the questions asked in the current study choice of task sequence and choice of where were determined to be parsimonious. Morgan (2006) also indicated that the types of choices in the current line of research have been limited to a few of the possible choices available in the classroom and other choice-making opportunities should be investigated.

Fourth, the types of choices in relation to intervention effectiveness should be explored. Romanuik et al. (2002) and Ramsey et al. (2010) suggested that a mismatch of the type of choice and function of behavior may have accounted for ineffectivenes of choice-making interventions for participants in their studies. In the present study, the types of choice-making opportunities were chosen by the teacher with the assistance of the investigator; other teachers may have chosen other choice types based on their individual classrooms. Of the ten types of choices, it also is important to take into account how the type of choice, such as termination, may effect task completion and accuracy negatively. Future researchers should investigate other choices which match aviodance and access-maintained behavior to potentially effect task completion and accuracy more positively.

Last, Rupert increased his task completion from 0% to 57%. Rupert is not atypical in terms of the academic characteristics of students with E/BD, who often exhibit high levels of academic failure and low task completion (Lane, Barton-Arwood, Nelson, & Wehby, 2008). Though his accuracy did not improve to a passing average he continued to make steady progress in increasing his task completion and accuracy. This also was

evident in the Ramsey et al. (2010) study as three of the five participants did not increase the percent accuracy to an overall passing rate. Rupert also responded well to the choice of where intervention, often choosing to move near staff where he would ask for help appropriately. Future researchers should investigate the role of poor academic performance over a long period of time and the link to avoidance-maintained behavior. In addition, future researchers should investigate other positive behaviors, such as appropriate help-seeking behaviors and academic behaviors, which may improve academic performance and reduce task avoidance during choice-making interventions.

Conclusion

Overall, the results of this study indicate that function-based choice-making interventions positively affected task completion, accuracy, and disruption for many of the participants in a residential middle school mathematics classroom. Choice-making interventions offer flexibility, cost effectiveness, and ease of use (Jolivette et al., 2001; Kern et al., 1998). As well, choice-making historically has been a socially acceptable, antecedent-based intervention for classroom use (Morgan, 2006). Students in residential facilities exhibit complex behaviors though there was no functional relation between the two choice-making interventions the student's behavior improved in the classroom. Additionally, the topography of the student's behavior improved (i.e. verbal aggression to talking out). This study investigated two types of choices; Sigafoos (1998) specified ten types of choices. There are numerous opportunities for future studies given these ten types of choices and their link to behavioral function. Providing choice-making opportunities was manageable for the teacher and students stated their support and

fondness for the opportunity to make choices when completing work and often asked to make choices during other times in the classroom and throughout their school day.

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APPENDIXES

Appendix A

Functional Assessment Checklist for Teachers and Staff (FACTS-Part A)

Step 1

Student/ Grade: _____ Date: _____
Interviewer: _____ Respondent(s): _____

Step 2

Student Profile: Please identify at least three strengths or contributions the student brings to school.

_____

Step 3

Problem Behavior(s): Identify problem behaviors

___ Tardy	___ Fight/physical Aggression	___ Disruptive	___ Theft
___ Unresponsive	___ Inappropriate Language	___ Insubordination	___ Vandalism
___ Withdrawn	___ Verbal Harassment	___ Work not done	___ Other _____
	___ Verbally Inappropriate	___ Self-injury	

Describe problem behavior: _____

Step 4

Identifying Routines: Whe With Whom Problem Behaviors are Most Likely.

Schedule (Times)	Activity	Likelihood of Problem Behavior	Specific Problem Behavior
	Before School	Low 1 2 3 4 5 6 High	
	Math	1 2 3 4 5 6	
	Transition	1 2 3 4 5 6	
	Language Arts	1 2 3 4 5 6	
	Recess	1 2 3 4 5 6	
	Reading	1 2 3 4 5 6	
	Lunch	1 2 3 4 5 6	
	Science	1 2 3 4 5 6	
	Transition	1 2 3 4 5 6	
	Block Studies	1 2 3 4 5 6	
	Art	1 2 3 4 5 6	

Step 5

Select 1-3 Routines for further assessment: Select routines based on (a) similarity of activities (conditions) with ratings of 4, 5 or 6 and (b) similarity of problem behavior(s). Complete the FACTS-Part B for each routine identified.

Functional Assessment Checklist for Teachers & Staff (FACTS-Part B)

Step 1

Student/ Grade: _____ Date: _____
Interviewer: _____ Respondent(s): _____

Step 2

Routine/Activities/Context: Which routine (only one) from the FACTS-Part A is assessed?

Routine/Activities/Context	Problem Behavior(s)

Step 3

Provide more detail about the problem behavior(s):

What does the problem behavior(s) look like?

How often does the problem behavior(s) occur?

How long does the problem behavior(s) last when it does occur?

What is the intensity/level of danger of the problem behavior(s)?

Step 4

What are the events that predict when the problem behavior(s) will occur? (Predictors)

Related Issues (setting events)	Environmental Features
___ illness Other:_____	___ reprimand/correction ___ structured activity
___ drug use _____	___ physical demands ___ unstructured time
___ negative social _____	___ socially isolated ___ tasks too boring
___ conflict at home _____	___ with peers ___ activity too long
___ academic failure _____	___ Other ___ tasks too difficult
	_____ _____

Step 5

What consequences appear most likely to maintain the problem behavior(s)?

Things that are Obtained	Things Avoided or Escaped From
___ adult attention Other: _____	___ hard tasks Other: _____
___ peer attention _____	___ reprimands _____
___ preferred activity _____	___ peer negatives _____
___ money/things _____	___ physical effort _____
	___ adult attention _____

SUMMARY OF BEHAVIOR

Identify the summary that will be used to build a plan of behavior support.

Step 6

Setting Events & Predictors	Problem Behavior(s)	Maintaining Consequence(s)

Step 7

How confident are you that the Summary of Behavior is accurate?

Not very confident					Very Confident
1	2	3	4	5	6

Step 8

What current efforts have been used to control the problem behavior?

Strategies for preventing problem behavior	Strategies for responding to problem behavior
___schedule change Other: ____None___	___ reprimand Other: _____None_____
___ seating change _____	___ office referral _____
___ curriculum change _____	___ detention _____

March, Horner, Lewis-Palmer, Brown, Crone, Todd, & Carr (2000) 4/24/00

Appendix B

Problem Behavior Questionnaire

Student: _____ DOB:_____ Grade: _____ Sex: M F Date:_____

Teacher: _____School:_____

STUDENT BEHAVIOR: (*Briefly describe the problem behavior; use the reverse of this page if necessary*)

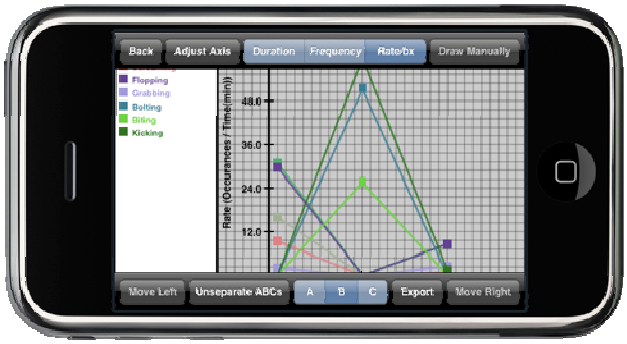
Directions: Keeping in mind a typical episode of the problem behavior, circle the frequency at which each of the following statements are true.

		PERCENT OF THE TIME						
		Never	**10%**	**25%**	**50%**	**75%**	**90%**	**Always**
1.	Does the problem behavior occur and persist when you make a request to perform a task?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
2.	When the problem behavior occurs do you redirect the student to get back to task or follow rules?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
3.	During a conflict with peers, if the student engages in the problem behavior do peers leave the student alone?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
4.	When the problem behavior occurs do peers verbally respond or laugh at the student?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
5.	Is the problem behavior more likely to occur following a conflict outside of the classroom? (e.g., bus write up)	**0**	**1**	**2**	**3**	**4**	**5**	**6**
6.	Does the problem behavior occur to get your attention when you are working with other students?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
7.	Does the problem behavior occur in the presence of specific peers?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
8.	Is the problem behavior more likely to continue to occur throughout the day following an earlier episode?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
9.	Does the problem behavior occur during specific academic activities?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
10.	Does the problem behavior stop when peers stop interacting with the student?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
11.	Does the problem behavior stop when peers are attending to other students?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
12.	If the student engages in the problem behavior do you provide one-on-one instruction to get the student back on-task?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
13.	Will the student stop doing the problem behavior if you stop making requests or end an academic activity?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
14.	If the student engages in the problem behavior, do peers stop interacting with the student?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
15.	Is the problem behavior more likely to occur following unscheduled events or disruptions in classroom routines?	**0**	**1**	**2**	**3**	**4**	**5**	**6**

(Lewis, Scott, & Sugai, 1994)

Appendix C

Behavior Tracker Pro



Appendix D

Procedural Fidelity Checklist

	YES	NO	N/A
Baseline Condition - The teacher:			
Prepared in advance the independent task choices			
Placed the task choices before the student			
Explained the tasks to the student			
Asked the students if there were any questions about the assignments			
Gave the student 2 tasks to complete			
Total yes	/5		
Choice of Task Sequence - The teacher:			
Prepared in advance the independent task choices			
Placed the task before the student			
Explained the tasks to the student			
Offered the participant two choices for completion order			
Asked the participant to make a choice			
Waited for the participant's response			
Gave the tasks to the student			
Reinforced with the option chosen by giving the participant the chosen item			
Asked the students if there were any questions about the assignments			
Total yes	/9		
Choice of Where to Complete Tasks - The teacher:			
Prepared in advance the independent task choices			
Placed the task before the student			
Explained the tasks to the student			
Offered the participant two choices for where to complete the task			
Asked the participant to make a choice			
Waited for the participant's response			
Gave the tasks to the student			
Asked the students if there were any questions about the assignments			
Reinforced with the option chosen by allowing the participant to move to the chosen area			
Total yes	/9		

Appendix E

Treatment Acceptability Rating Form – Revised (TARF-R)
(Reimers & Wacker, 1988)
Modified for the Function Based Choice-making Study

Directions: Please complete the items listed below as they pertain to the function-based choice-making intervention for the student. These items should be completed by placing a check mark on the line under the question that best indicates how you feel about the use of these reading/behavioral strategies.

Student Name: _____

1. How clear is your understanding of function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____
Not at all clear Neutral Very clear

2. How clear is your understanding of function-based where choice?

_____ _____ _____ _____ _____ _____ _____
Not at all clear Neutral Very clear

3. Regarding your concerns about the students you serve, how acceptable do you find function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____
Not at all acceptable Neutral Very acceptable

4. Regarding your concerns about the students you serve, how acceptable do you find function-based where choice?

_____ _____ _____ _____ _____ _____ _____
Not at all acceptable Neutral Very acceptable

5. How willing are you to use function-based choice of task sequence in the future?

_____ _____ _____ _____ _____ _____ _____
Not at all willing Neutral Very willing

6. How willing are you to use function-based where choice in the future?

_____ _____ _____ _____ _____ _____ _____
Not at all willing Neutral Very willing

7. Given the student's behavioral problems, how reasonable do you find function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

Not at all reasonable Neutral Very reasonable

8. Given the student's behavioral problems, how reasonable do you find function-based where choice?

_____ _____ _____ _____ _____ _____ _____

Not at all reasonable Neutral Very reasonable

9. How costly (e.g., resources, time) will it be to carry out function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

Not at all costly Neutral Very costly

10. How costly (e.g., resources, time) will it be to carry out function-based where choice?

_____ _____ _____ _____ _____ _____ _____

Not at all costly Neutral Very costly

11. To what extent do you think there might be disadvantages in using function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

None are likely Neutral Many are likely

12. To what extent do you think there might be disadvantages in using function-based where choice?

_____ _____ _____ _____ _____ _____ _____

None are likely Neutral Many are likely

13. How likely are function-based choice of task sequence to make permanent improvements in the student's behavior?

_____ _____ _____ _____ _____ _____ _____

Unlikely Neutral Very likely

14. How likely are function-based where choice to make permanent improvements in the student's behavior?

_____ _____ _____ _____ _____ _____ _____

Unlikely Neutral Very likely

15. How much time will be needed each day for you to carry out function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

Little time will be needed | Neutral | Much time will be needed

16. How much time will be needed each day for you to carry out function-based where choice?

_____ _____ _____ _____ _____ _____ _____

Little time will be needed | Neutral | Much time will be needed

17. How confident are you that function-based choice of task sequence will be effective?

_____ _____ _____ _____ _____ _____ _____

Not at all Confident | Neutral | Very confident

18. How confident are you that function-based where choice will be effective?

_____ _____ _____ _____ _____ _____ _____

Not at all Confident | Neutral | Very

19. Compared to other students with behavioral difficulties, how serious are problems in your classroom?

_____ _____ _____ _____ _____ _____ _____

Not at all serious | Neutral | Very serious

20. How disruptive will it be to your classroom (in general) to utilize function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

Not at all disruptive | Neutral | Very disruptive

21. How disruptive will it be to your classroom (in general) to utilize function-based where choice?

_____ _____ _____ _____ _____ _____ _____

Not at all disruptive | Neutral | Very disruptive

22. How effective is function-based choice of task sequence likely to be for your student?

_____ _____ _____ _____ _____ _____ _____

Not at all effective | Neutral | Very effective

23. How effective is function-based where choice likely to be for your student?

_____ _____ _____ _____ _____ _____ _____

Not at all effective Neutral Very effective

24. How affordable is function-based choice of task sequence for your classroom?

_____ _____ _____ _____ _____ _____ _____

Not at all affordable Neutral Very affordable

25. How affordable is function-based where choice for your classroom?

_____ _____ _____ _____ _____ _____ _____

Not at all affordable Neutral Very affordable

26. How much do you like the procedures in the function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

Not at like them at all Neutral Like them very much

27. How much do you like the procedures in the function-based where choice?

_____ _____ _____ _____ _____ _____ _____

Not at like them at all Neutral Like them

28. How willing will other teachers be to help carry out function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

Not at all Willing Neutral Very willing

29. How willing will other teachers be to help carry out function-based where choice?

_____ _____ _____ _____ _____ _____ _____

Not at all willing Neutral Very willing

30. To what extent are undesirable side-effects likely to result from the function based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

No side-effects are likely Neutral Many side effects are likely

31. To what extent are undesirable side-effects likely to result from the function based where choice?

_____ _____ _____ _____ _____ _____ _____

No side-effects are likely | Neutral | Many side effects are likely

32. How much discomfort is your student likely to experience during implementation of function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

No discomfort at all | Neutral | Very much discomfort

33. How much discomfort is your student likely to experience during implementation of function-based where choice?

_____ _____ _____ _____ _____ _____ _____

No discomfort at all | Neutral | Very much discomfort

34. How severe are the student's behavioral difficulties in your classroom?

_____ _____ _____ _____ _____ _____ _____

Not at all severe | Neutral | Very severe

35. How well would function-based choice of task sequence fit into your classroom curriculum?

_____ _____ _____ _____ _____ _____ _____

Not at all well | Neutral | Very well

36. How well would function-based where choice fit into your classroom curriculum?

_____ _____ _____ _____ _____ _____ _____

Not at all well | Neutral | Very well

37. How willing would you be to change your classroom routine to implement function-based choice of task sequence?

_____ _____ _____ _____ _____ _____ _____

Not at all willing | Neutral | Very willing

38. How willing would you be to change your classroom routine to implement function-based where choice?

_____ _____ _____ _____ _____ _____ _____

Not at all willing | Neutral | Very willing