SELF-MONITORING OF ON-TASK BEHAVIOR IN GENERAL EDUCATION CLASSROOMS BY A STUDENT WITH INTELLECTUAL DISABILITIES

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CERTIFICATION OF APPROVAL

I certify that I have read Self-Monitoring Of On-Task Behavior In General Education Classrooms By A Student With Intellectual Disabilities by Elise Dora Louise Schaffer, and that in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of the requirement for the degree Master of Arts in Special Education at San Francisco State University.

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This paper reviewed literature on self-monitoring behavior systems with a variety of modalities. The goal of the research was to determine if self-monitoring systems benefit students with moderate disabilities by increasing on-task behaviors within three different classroom settings in a public elementary school. The study expands the current research to include students with Down Syndrome and students who use picture-based self-monitoring behavior systems. The results of this study found that the self-monitoring behavior checklist allowed the student to increase his on-task behaviors. Furthermore, social validity results found that the checklist was perceived by the student as being helpful and enjoyable.

I certify that the abstract is a correct representation of the content of this thesis

Pam Hurst 12/14/15

Chair, Thesis Committee Date

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Chapter 1

Introduction

Living an independent life is a goal of most people while growing-up. However, for people who have moderate to severe disabilities, this is a goal that is sometimes difficult to reach. The design of the self-monitoring intervention investigated in this study was based on previous research that focused on self-determination interventions with students who are identified as having severe disabilities (Agran et al., 2005; Mithaug, Martin, & Agran, 1987; Ward, 2005), students with disabilities setting and reaching their goals (Lee, Palmer, & Wehmeyer, 2009; Rafferty, 2010), and prompt-fade instructional systems (Cooper, Heron, & Heward, 2007; Harris & Delmolino, 2002; Leach & Mary, 2009; MacDuff, Krantz, & McClannahan, 2001). Self-monitoring behavior systems have been found to help people with disabilities generalize their skills from school to work or school to home settings (Hume & Reynolds, 2010). They have also been shown to be effective with students in different age groups and with different disabilities (Harris et al., 2005; Holifield et al., 2010; Selznick & Savage, 2000). The following literature review provides an overview of the importance of the independent use of self-monitoring behavior systems with people who experience moderate to severe disabilities.

It is important for students who experience disabilities to develop different strategies for overcoming difficulties in making their own decisions, speaking up for themselves, and knowing how to self-advocate for their needs and wants (Agran et al., 2005; Mithaug, Martin, & Agran, 1987; Ward, 2005). This skill, also known as self-determination, is important for students to learn in order to become more successful adults. Several studies have explored the importance of increasing self-determination in order to create more independent behaviors. Self-determination is important for people with disabilities in order to have a successful quality of life (Powers, 2005; Wehmeyer & Schwartz, 1998). When students have established self-determination, then they are more likely to be better able to live independently, get better jobs, and have more opportunities for growth (Ward, 2005; Wehmeyer & Palmer, 2003). It is important for educators to develop tools and strategies to help students with these skills.

There have been studies on self-determination that have focused on setting and achieving goals. A central component to self-determination is having the ability to set and achieve goals (Lee, Palmer, & Wehmeyer, 2009). One such study, conducted by Devlin (2008) investigated goal setting in jobs with people with moderate intellectual disabilities. The participants in this study developed goals, with the assistance of job coaches, related to their custodial jobs. They then used checklists to track progress in order to recognize when their goals had been met. This research found that by self-

monitoring, people with moderate intellectual disabilities achieved their goals more easily and effectively than if they were not using self-monitoring systems. Goal setting provides a structure that allows individuals to set the goal, develop a plan, and assess when they have reached the goal (Devlin, 2008).

It has also been found that when students set their own goals, rather than having a teacher facilitating, they are more likely to be actively engaged in achieving their goals (Mithaug et al., 2003). In addition, goals that are personal or have high value to the individual are more likely to be achieved when using a monitoring system (Doll & Sands, 1998). This is an important factor to consider when developing a system for a specific student. The more the self-monitoring system appeals to students, the more likely they will use it consistently.

There is a large amount of research conducted on self-monitoring behavior systems that involve specific types of disabilities. One example of this is self-monitoring systems and their effectiveness with people who have the diagnosis of autism. Self-monitoring behavior systems have been effective with students with autism because of the visual structure in which they are presented (Hume & Reynolds, 2010). Many students are able to gain information about expectations and task completion by using the self-monitoring systems. The visual structure allows the student to know what they need to do, how much they need to do, and when they are finished (Schopler et al., 1995).

Many people with autism respond well to structure with a well-defined beginning and ending to a task. The use of self-monitoring systems by students with autism have been investigated in many different situations. One study investigated changes in academic accuracy associated with students' use of a self-monitoring system to increase on-task behavior in the classroom by nine and ten-year-old students with autism (Holifield, Goodman, Hazelkorn, & Heflin, 2010). The results of the study demonstrated that the more the participants used the self-monitoring system, the more accurate their academic work was.

Cihak, Wright, and Ayres (2010) conducted a study involving participants who were three young men aged eleven to twelve-years-old who also had the diagnosis of autism. All three participants were fully included at school alongside their general education peers. This study investigated the use of self-monitoring systems using electronic handheld computers that displayed pictures of on-task behaviors. Every thirty seconds a new picture would be displayed on the handheld computer. The results of this study found the self-monitoring systems to be effective in increasing on-task behaviors across multiple settings. Although these two studies show the effectiveness of self-monitoring behavior systems among students with the diagnoses of autism, there is a lack of research available that involves students who experience other disabilities such as Down syndrome.

Much of the research studying the effectiveness of self-monitoring systems involved participants who were in middle school, high school, and adult school programs, rather than early childhood or primary grade levels. One such study was conducted by Harris et al. (2005), and involved students who were diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) who were in third, fourth, and fifth grades. In this study a timed audio tone was implemented to prompt the participants to self-record their behavior. The targeted behavior was on-task behaviors, which were defined as the student (a) focusing her or his eyes on the spelling list, practice paper, or self-monitoring tally sheet; (b) executing any step in the spelling study procedure; or (c) asking for help. All six students increased these on-task behaviors when using their self-monitoring lists.

A further study that included adolescent-aged participants with varying types of brain injuries was conducted by Selznick and Savage (2000). This team also used an audio cue to signal the participants' use of their checklists to self-monitor their on-task behaviors which included the following: (a) orienting head/eyes to paper (looking at assigned work), (b) using a pencil to write on paper or make erasures, (c) counting on fingers, (d) looking ahead or diagonally for 3s or less, (e) raising hand, (f) asking a question regarding content, (g) head oriented to paper or teacher when she answers questions of content, and (h)sharpening pencil for 30 s or less.

The results of this study were that the self-monitoring systems decreased the need for teacher prompts, increased on-task behavior, and were effective with adolescent students who had brain injuries. Although the results of these studies are promising, they do not address the use of self-monitoring systems by students in early education and primary grades or students with moderate to severe disabilities. For students with moderate to severe disabilities, creating opportunities to learn independence is a high priority because of the amount of support from adults that they are exposed to daily (Giangreco, Edelman, Luiselli, & MacFarland, 1997).

There is a large amount of research that shows that prompt-fading instructional strategies are important in teaching new skills to students with intellectual disabilities, including teaching the students to independently use self-monitoring systems. Students must learn to complete tasks independently and without the need for adult prompting if the skills are to maintain over time. According to McClanahan and Krantz (1999), prompts are defined as, "instructions, gestures, demonstrations, touches, or other things that we arrange or do to increase the likelihood that children will make correct responses" (p. 37). Furthermore, MacDuff, Krantz, and McClannahan (2001) defined prompts as, "antecedent stimuli that are effective in getting responses to occur" (p. 37). There is a wide variety of prompts including the following: verbal prompts, textual prompts, modeling prompts, physical prompts, and gestural prompts (Cooper, Heron, & Heward,

2007; Harris & Delmolino, 2002; Leach & Mary, 2009; MacDuff, Krantz, & McClannahan, 2001). Selected prompts are systematically faded over time to achieve the goal of independent performance. Studies focusing on self-monitoring interventions often incorporate prompt-fade strategies as the instructional tool (Albert et al., 2012; Odom et al., 1992).

Hughes et al. (2002) used prompt-fade procedures to teach students with intellectual disabilities to use a self-monitoring system to participate independently in the routines of a general education classroom. This is an important study because many students with disabilities tend to receive more support than they might need in order to complete a task or classroom routine. Self-monitoring systems hold students accountable for their own behavior. Fading out prompts is a systematic way of slowly teaching independence with students who experience disabilities. In addition, when there is an increase in on-task behavior because a student is responsible for monitoring their own behavior, there is more opportunity for generalization of skills into more independent situations (Hume & Odom, 2007; Coughlin et al., 2012; Selznick & Savage, 2000).

As discussed above, self-monitoring behavior systems are a structured way to aid in students being responsible for their own behavior (Rhode, Morgan & Young, 1983) through systematic teaching of the system. A study conducted by Loftin, Gibb & Skiba outlined the steps to developing a systematic self-monitoring behavior system (2005).

This study laid out five essential steps in teaching a self-monitoring system. These steps included the following: a) identifying the behavior to be worked on, b) designing an appropriate system to monitoring behavior, c) picking a reinforcer and planning how the student will earn it, d) systematically teaching the student how to use the system and when they know they have earned a reward, and e) fading out prompting and teaching from an adult. These steps are crucial in making sure that the student using the self-monitoring system develops independence in using the system. The structure of any self-monitoring system gives the student information about what is expected of them, how they know if they are meeting expectations, and what they will earn if they are correct in their behavior.

Although there may be agreement on a general set of procedures to teach students with intellectual disabilities to use a self-monitoring system, individualized adaptations are often needed to make the systems accessible to a broad range of students. An adaptation that is used to facilitate the use of self-monitoring systems by students who are emerging or beginning readers is to use picture symbols to represent the desired on-task behaviors (Coughlin et al., 2012; Hughes et al., 2002). Coughlin et al., (2012) conducted research on self-monitoring along with the use of a visual stimuli with three participants who were all seven-years-old. The visual stimulus was a card with a highly motivating picture on it (e.g., spongebob squarepants or a Disney princess). When it was time for

the participant to self-monitor, the researcher would show the student the card and then the student was expected to record if they were on-task. The researchers found that with the use of a self-monitoring system, in tandem with a visual stimulus, all three participants increased their occurrences of on-task behaviors. In addition, there was a decrease in adult verbal prompting, and increased independence.

Another study using a visual stimulus was conducted by Hughes et al., (2002) and involved high school students with intellectual disabilities. This study used highly motivating visual stimuli that differed between each of the students. Examples of the visual stimuli used were a picture prompt card, a picture of money, and a picture of two people talking. Each visual stimulus was selected in order to prompt the participant to self-monitor their behavior. The results of the study documented that a self-monitoring system that incorporated picture symbols increased the targeted behavior goals for each of the participants. Both of these studies provide evidence that self-monitoring systems that use visuals can be used to decrease adult-prompting and increase the independence of students with intellectual disabilities.

The last factor to consider in developing a successful self-monitoring system is participant interest in the system being used. Many systems are developed in order to be user friendly and motivating (Coughlin et al., 2010). This can be achieved, for example, through using television show characters or by using favorite colors or designs. Other

systems are designed to facilitate the participant's participation and engage them in problem solving for future problem behaviors (Gureasko-Moore, DuPaul, & White, 2007).

The purpose of the proposed study was to further the current research by investigating how a self-monitoring behavior checklist aided in increasing appropriate classroom behaviors with a student impacted by Down syndrome. Many teachers struggle with maintaining appropriate classroom behavior during a school day while teaching the content of a lesson. The potential for a more independent educational experience makes this research a worthwhile endeavor. There was also further examination of the use of a checklist that incorporates real pictures and line drawings to represent the desired behaviors. This was an important adaptation because many students with intellectual disabilities are at the emergent reading level. Finally, the participant in this study was impacted by Down syndrome, while the majority of participants in the existing research on self-monitoring systems were diagnosed with autism spectrum disorders (e.g., Holifield et al., 2010; Hume & Odom, 2007; Hume & Reynolds, 2010; Marshall & Mirenda, 2002).

Chapter 2

Method

Participant

The student, Cole, was a 5-year-old boy who experienced Down's Syndrome as diagnosed by the DSM 5. The student had difficulties with appropriate classroom behavior (e.g., being easily distracted, noncompliant, and disruptive to his fellow classmates). He was integrated for an hour every day into a transitional kindergarten classroom along with para-professional support to help him with socialization, academic tasks, and learning appropriate play behaviors. Cole had symbolic understanding, adequately followed prompting from a staff member, and spoke English. While completing academic tasks he required a moderate level of accommodations in order to have success in completing them. He did not have a history of using a self-monitoring behavior system in the past. Finally, he had a history of noncompliant behaviors as reported by his mother and documented in previous Individualized Education Plans (IEPs).

Cole's noncompliant behaviors manifested throughout the day and across different tasks. These behaviors included Cole laying under a table, poking students, running away on the playground, putting his head down on the desk, and refusing to clean-up his area. Cole's behaviors were difficult to redirect, and he would sometimes

engage in them for up to fifteen minutes at one time. Using positive reinforcement within Cole's day would greatly decrease the noncompliant behaviors, but, in turn, increased Cole's prompt dependency with staff in the classroom.

Cole was very social and had many school friends. He was often invited to play with his peers in the general education classroom, but he did not possess appropriate behavioral skills to be independent in these interactions. His favorite activity during the day was cleaning the classroom. This was when he participated in vocational tasks including wiping tables, vacuuming, sweeping, emptying the trashcan, and pushing in chairs. Because these types of activities were motivating for Cole, the staff would use them as a reinforcer for good behavior.

Setting

This research was conducted three days a week, across three general education and special education classroom settings in which Cole exhibited difficulties in maintaining appropriate classroom behavior. The activities in each setting lasted up to 30 minutes with intermittent breaks and included small group work and independent work tasks.

The study was conducted at an elementary school in the San Francisco Bay Area that included grades from transitional kindergarten through fifth grade. Four-hundred-fifteen students were enrolled with 5.8% of those students identified as students with

disabilities and 27.5% as English language learners. The main student groups were Asian at 52.8%, white at 22.4%, and Latino at 10.1% of the total school population.

Independent Variable

The independent variable for this research was teaching the student to use the self-monitoring behavior system. The considerations taken into account when designing the behavior checklist were what non-compliant behaviors were preventing Cole from being able to learn, Cole's level of symbolic understanding, and what would motivate him to improve his behaviors.

The behavior checklist included six observable behaviors that Cole often did not perform appropriately; however he did not require more than verbal prompting to complete each behavior. Cole was not yet able to read, but did possess an understanding of pictures including both line drawings and photos. Therefore, the checklist was composed of pairs of pictures. One picture showed Cole behaving appropriately, and the other showed him behaving inappropriately in the same context. Next to the picture of him behaving appropriately was a large line drawing of a happy face; next to him behaving inappropriately was a large line drawing of a sad face. The pictures were large to account for his vision difficulties. There were three pairs of photos on each side of a double-sided paper, totaling six different behaviors. A short description of the behavior was also included. It was located at the top of each picture in order to help a staff

member know what behavior was being depicted in the pair of photos. The behavior checklist conveyed two pieces of information. These two pieces of information included the following: (a) what Cole should and should not be doing, as shown in the photos of him demonstrating behaviors, and (b) whether staff members were happy or sad with Cole's behavior, as shown with the large line drawings of happy and sad faces. The behavior checklist is presented in Figure 1 below.

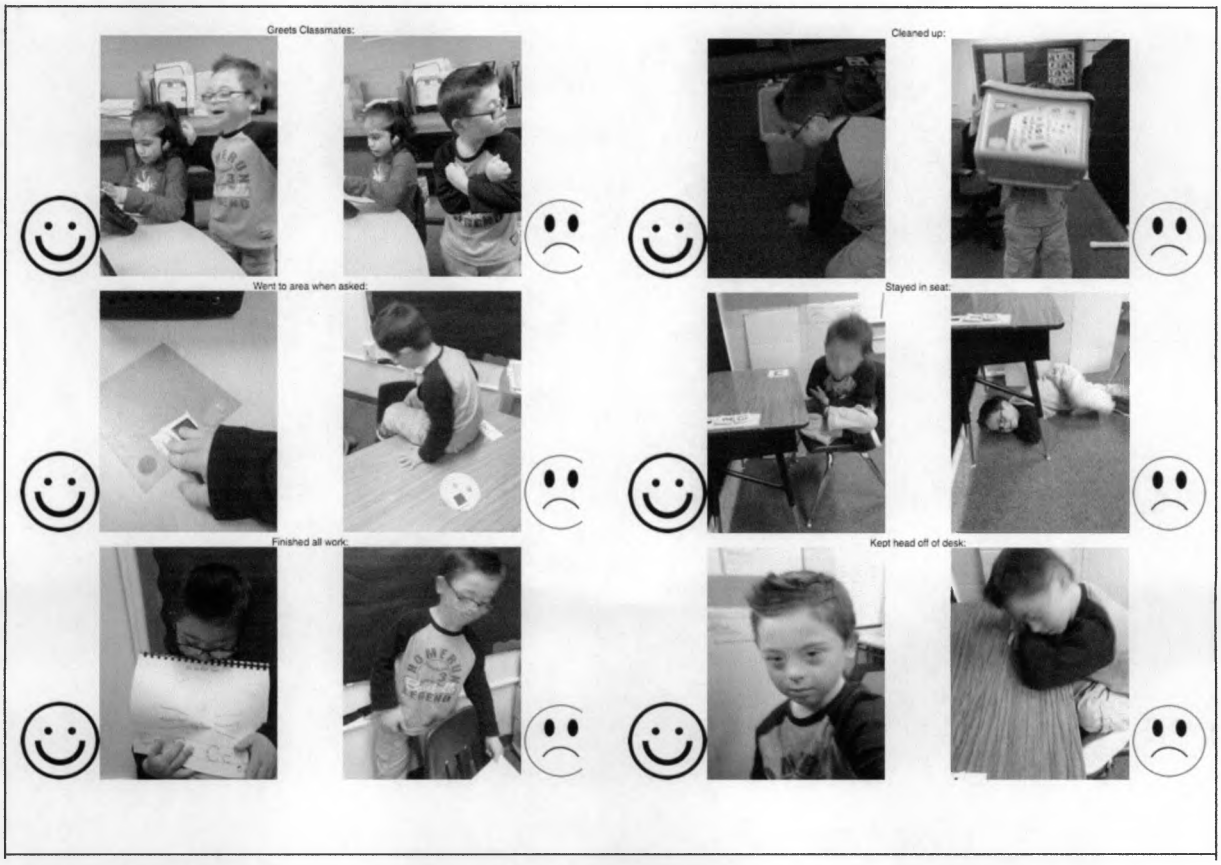

Figure 1. The self-monitoring behavior checklist used by Cole, including photos and line drawings of happy and sad pictures.

The systematic prompting procedure that was used to teach Cole how to use the checklist was implemented as a means of reducing prompt dependency. Prompt dependency is common among students with moderate to severe disabilities (MacDuff, Krantz, & McClannahan, 2001). Although there are many approaches to a prompt-fading procedure, the procedure used for this study was a most-to-least fading system. This system includes moving from the most restrictive prompt, which was verbal prompting in this study, to the least restrictive prompting, which was seen by the absence of a prompt. This type of prompt-fade system is successful in achieving and maintaining more independent behaviors in students with moderate to severe disabilities (Seaver & Bourret, 2014). The prompt levels and their descriptions can be seen in Figure 2 below.

Prompting Procedure	
Direct Verbal DV	• Explanation - Researcher tells the student what to do. • What this looks like - "Raise your hand and wait to be called on. Now you can circle 'yes' on your checklist." • What praise should sound like - "I like how you followed my directions." "You circled yes because you knew what to do!"
Indirect Verbal IV	• Explaination - Researcher suggests to the student what to do. • What this looks like - "What do you need to do so you can circle yes on your checklist?" • What praise should sound like - "Great job remembering what you should be doing in the classroom." "You really know how to fill in your checklist!"
Pointing P	• Explanation - Researcher does not speak to the student; they only point or gesture towards what they want the student to do. • What this looks like – Researcher points to the chair to remind the student to sit down. Researcher points to the checklist to remind student to circle 'yes'. • What praise should sound like - "I think you did a great job in the classroom without me having to tell you what to do." "Teacher is very happy"

Figure 2. The prompting procedure diagram including descriptions for a direct verbal prompt, an indirect prompt, and a pointing prompt.

Dependent Variables and Measures

The dependent variables were six observable behaviors that Cole was expected to complete in order to earn a happy face on his checklist. The observable behaviors included the following:

(a) *Greets the class:* Defined as greeting his classmates or teachers when walking into the classroom, going to small group, or going to his desk. This behavior was included to increase Cole's ability to socialize with peers without adult prompting.

(b) *Goes to an area when he is asked:* Defined as checking his schedule to go to the correct table or area. Cole had difficulty going to the correct area of the room when asked and would run away from staff or the room as means of avoidance or attention.

(c) *Finished all his work:* Defined as completing all work given to him by the teacher. Cole would often request to be "all-done" after completing very little to no work.

(d) *Clean-up:* Defined as Cole cleaning up his area when he finished his work. When the class would begin to clean-up, Cole would lay on his tummy and watch his peers clean-up, or he would run away from the area.

(e) *Stay in Seat:* Defined as staying in his seat while working or returning to his seat after a teacher asked him to sit. Cole would fall out of his seat and hide under tables or chairs to avoid doing his work or to gain attention.

(f) *Head off desk:* Defined as keeping head off of the desk while working. Cole would avoid work by putting his head onto the table and refusing to complete work.

Data Collection. The researcher had a data sheet listing all of the targeted on-task behaviors used to collect observational data during baseline, intervention and independence phases of the study (see Figure 3 on the next page). During baseline, the student participated in the classroom activities as normal without the use of the on-task behavior checklist. When the student did not engage in a targeted behavior, he received a prompt after 10 seconds from the researcher to engage in that missed behavior. This was done to allow time for the student to self-correct for the behavior. When the participant correctly completed an item on the checklist, the researcher checked that item off on their data sheet.

During the intervention phase, when the researcher implemented the prompting procedure, the student used the self-monitoring behavior checklist, and the researcher continued using their data sheet. When a behavior was correctly completed by the participant, the researcher would then mark the appropriate box on the checklist.

In the independence phase, the student was responsible for completing the on-task behavior checklist, without any prompting, to monitor their own on-task behavior. The researcher continued to use their observational data but only checked a correct completion of a behavior if the student independently engaged in the behavior without any prompting.

Independent Work: 3rd Intervention

Phase	Date	Prompt Type	Greets classmates	Went to area when asked	Finished all work	Cleaned up	Stayed in seat	Kept head off the desk	Number Corr
Baseline		--							
Baseline		--							
Baseline		--							
Baseline		--							
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Baseline		--							
Intervention		DV							
Intervention		DV							
Intervention		DV							
Intervention		IV							
Intervention		IV							
Intervention		IV							
Intervention		P							
Intervention		P							
Intervention		P							
Independence		--							
Independence		--							
Independence		--							

Figure 3. The data sheet including date, prompt level used, and each behavior being observed.

Intervention Fidelity. Intervention fidelity was measured during the baseline, intervention, and independence conditions. The fidelity checklist included the list of targeted behaviors, with the appropriate level of prompting designated for each session.

During baseline sessions, no prompts were provided to assist the student to engage in the targeted behaviors. During the training phase of the intervention condition, the appropriate prompt type for each session was designated on the data sheet and implemented by the researcher. During the independence phase of the intervention condition, no prompts were provided by the researcher.

On 33% of the sessions, an independent observer completed the fidelity checklist. The level of agreement between the ratings of the researcher and the independent observer was then calculated by directly adding the number of times the researcher used the wrong prompt and dividing that number by total opportunities for prompting.

Social Validity. The social validity of the intervention procedures and outcomes was examined using a questionnaire administered to the mother of the student. The mother was chosen because the family wanted to use the checklist in the following school year when Cole would be attending a new school. The mother volunteered in the school where Cole attended. She observed him a few times when using the checklist. There was also a small questionnaire verbally administered to the student himself. The questionnaire that the mother filled in was composed of two parts: a Likert scale and open-ended questions. The Likert scale had a 3-point scale with possible answer choices ranging from "strongly agree," "kind of agree," to "do not agree." The open-ended question section consisted of questions such as "did you notice any changes in your

child's behavior?" and "was this a good way to help you know what to do in class?" The purpose of this questionnaire was to determine if the study had a lasting effect on the parent's perception of their child's abilities (see Figure 4 below). The purpose of verbally administering the questionnaire to the student was for two reasons: a) the student was not yet capable of reading, and b) to determine the lasting effects of the checklist on his perception of ability (see Figure 5 below).

Parent Questionnaire

Questions	Responses		
1. My child has become more independent since using their checklist	Strongly Agree	Kind of Agree	Do Not Agree
2. My child seems to like using the checklists	Strongly Agree	Kind of Agree	Do Not Agree
3. The checklist has helped my child complete their schoolwork on time	Strongly Agree	Kind of Agree	Do Not Agree
4. The checklist has helped my child keep track of their own homework assignment	Strongly Agree	Kind of Agree	Do Not Agree
5. I feel that the checklist has helped my child to become more organized	Strongly Agree	Kind of Agree	Do Not Agree
6. My child seemed to enjoy the checklist	Strongly Agree	Kind of Agree	Do Not Agree
7. Overall, my child benefited from the use of the checklist	Strongly Agree	Kind of Agree	Do Not Agree

8. What were some positive outcomes of your child using the checklist?

9. What would you change about the checklist?

10. Would you want your child to use checklists in the future? How?

11. Additional Comments:

Figure 4. The questionnaire administered to the mother of the participant.

Student Questionnaire

Questions	
1. Did you like your checklist?	Yes No
2. Are teachers happy when you use your checklist?	Yes No
3. Do you earn 'clean' when you get happy faces?	Yes No
4. Do you want to use your checklist at your new school?	Yes No
5. Does Cole like earning happy or sad faces?	Yes No

Figure 5. The questionnaire administered verbally to the participant.

Procedures

Design. A multiple baseline across settings design was used with one participant.

For each setting there was a baseline phase, intervention phase, and an independence phase. During the baseline phase, the student participated in class activities as usual and without the use of the behavior checklist. During the intervention phase, the student was given and taught to use the checklist. The primary researcher used a systematic prompting procedure to teach the student to monitor his behavior by using the checklist. The independence phase was conducted with the student using the behavior checklist without prompting. The research was done in all three settings, three days a week during the school day. Data was tracked on each of these days along with reliability and fidelity measures completed by an independent observer.

Baseline sessions. During baseline the self-monitoring behavior checklist was not administered. The target behaviors were observed and recorded without any prompting or intervention of any kind. If the student behaved appropriately (e.g., kept his head off of the desk without any prompting) then the staff would mark (+) on the data sheet in the corresponding box. If the student did not behave appropriately (e.g., eloped away from where he was supposed to be), then the staff would mark (-) on the data sheet and would then prompt the student to behave correctly.

Intervention sessions. The checklist was introduced during the intervention phase of the research. Systematic prompt-fade procedures were paired with specific praise during this phase. The intervention began with the staff using the most restrictive

prompt, a direct verbal prompt. A direct verbal prompt was defined as the researcher telling the student what to do. An example of this would be, "Look at your checklist Cole. You are earning a happy face by staying in your seat!" This prompt would then be paired with specific praise such as, "Good job staying in your seat; staying in your seat makes teachers happy!" After two weeks at this prompt level, the researcher faded the prompt to an indirect verbal prompt. This prompt is defined as the researcher suggesting what the student should do. An example of this would be, "What do you need to do to earn a happy face?" This prompt was directly followed with behavior specific praise (e.g., "Great job earning a happy face!"). This prompt was used for an additional two weeks. The last prompt used, before moving into the independence phase, was a pointing gesture. This was defined as the researcher not speaking but only pointing or gesturing towards the checklist and the picture of the expected behavior.

Independent sessions. During the independent sessions, the checklist was used by the student without prompting from the researcher. The student had the checklist placed within his visual field on the table, or it was held by the staff if he was transitioning through different activities within each setting. Data collection still occurred during the independence phase. If the student independently, without prompting, behaved correctly, then the researcher would mark (+) on the data sheet for that behavior. If the student refused to do his work, (e.g., saying "no" to a teacher or

running away), then the researcher would mark a (-) in the space next to the relevant behavior.

During this phase, no prompting was provided to the student. If the student did not correctly complete a behavior while being observed, then the staff would wait for ten to fifteen seconds before correcting the student with a indirect verbal prompt. The researcher marked the behavior as (-) even if the student behaved appropriately after the prompt.

Chapter 3

Results

This study investigated the effectiveness of a self-monitoring behavior system in decreasing inappropriate classroom behaviors with a student with a moderate intellectual disability. The results for this study, across all three settings, are reviewed below. Likewise, the results for the intervention fidelity and social validity measures are described.

Student Outcomes

Baseline Phase. Data collected via observations during the baseline phase have shown that Cole exhibited few on-task behaviors across all three of the settings. The average number of on-task behaviors for the small group setting was 1.6 of the 6 targeted behaviors across 6 sessions. For transitional kindergarten the average number of on-task behaviors was 1.5 of the 6 targeted behaviors across 12 sessions. For the independent work setting the average number of on-task behaviors observed were 1.7 of the 6 targeted behaviors over 14 sessions (see Figure 6 below).

Intervention Phase. During the intervention phase, the participant underwent training on how to use the checklist through a systematic prompt-fade procedure. In the small group setting, the average number of on task-behaviors increased to 4.6 of the 6 targeted behaviors across 14 sessions. For transitional kindergarten, the average number

of on-task behaviors increased to 5 of the 6 targeted behaviors across 11 sessions. Lastly, for the independent work setting, the average number of on-task behaviors increased to 5.3 of the 6 targeted behaviors across 12 sessions.

Independence Phase. The independence phase allowed the researcher to determine if the student was capable of continuing to use the checklist without any prompting across settings. In the small group setting, the average number of on-task behaviors maintained at 5.4 of the 6 targeted behaviors across 9 sessions. During the transitional kindergarten setting, Cole maintained on-task behavior at an average of 5.3 of the 6 targeted behaviors across 6 sessions. For independent work the participant continued on-task behaviors at 5 of the 6 targeted behaviors across 3 sessions.

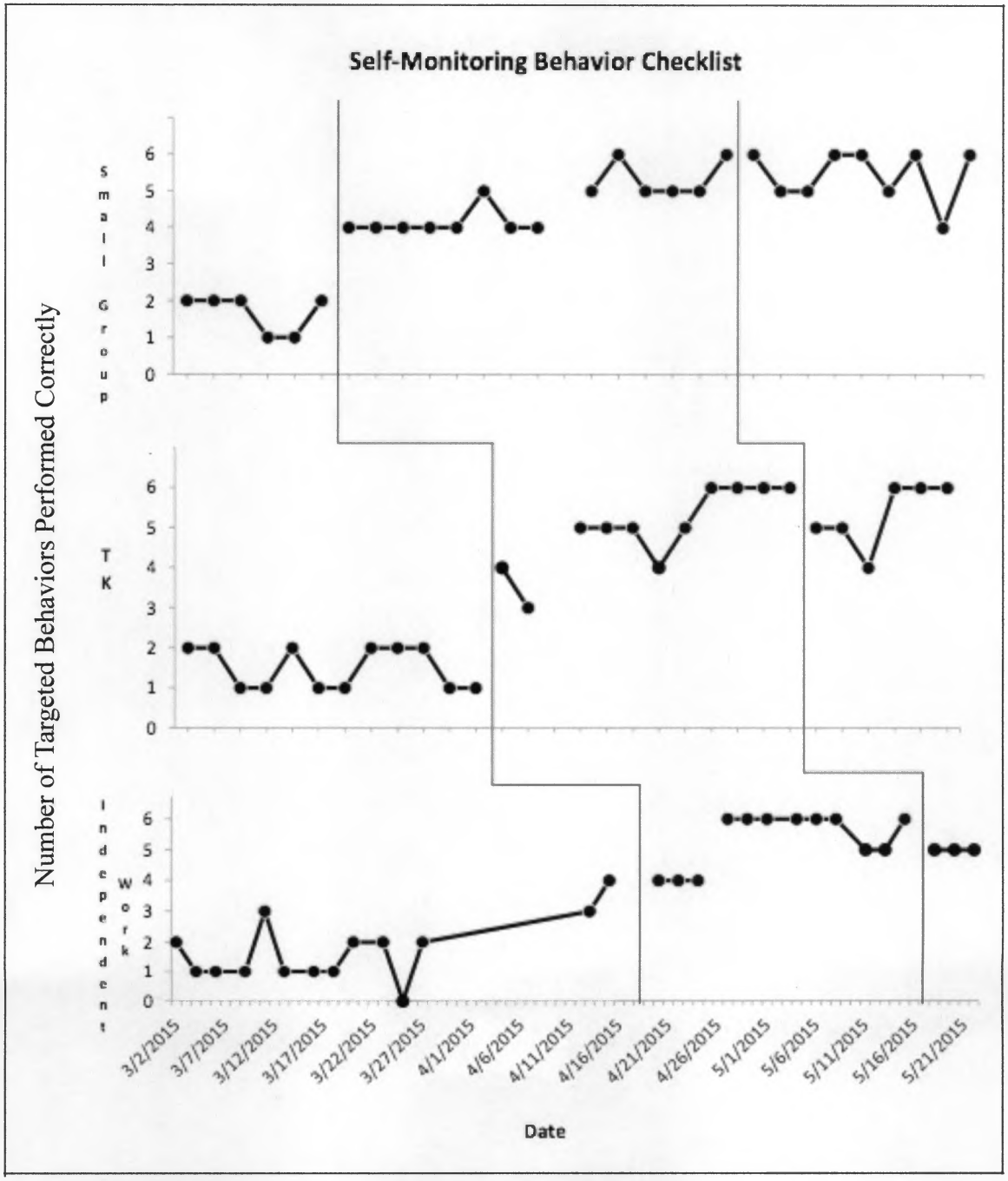

Figure 6. The total number of on-task behaviors per session.

Intervention Fidelity Outcomes

Intervention fidelity was measured for 33.3% of all sessions (see Figure 7). The percentages for the amount of time the staff correctly completed the prompting procedures during the baseline phases are as follows: 100% of the time for small group settings, 100% of the time for transitional kindergarten, and 100% for independent work. The percentages for the amount of time the staff used the correct prompts during the intervention phase is as follows: 100% of the time for small group setting, 75% of the time for transitional kindergarten, and 100% of the time for independent work. Finally, during the independent phase of this research, the percentages for the amount of time the staff correctly prompted are as follows: 100% of the time for small group setting, 100% of the time for transitional kindergarten, and 100% of the time for independent work.

Intervention Fidelity

	Small Group		Transitional Kindergarten		Independent Work	
Date	Prompt Type	Used Correct Prompt	Prompt Type	Used Correct Prompt	Prompt Type	Used Correct Prompt
3/2	--	Y	--	Y	--	Y
3/9	--	Y	--	Y	--	Y
3/16	DV	Y	--	Y	--	Y
3/23	DV	Y	--	Y	--	Y
4/13	IV	Y	DV	N	--	Y
4/20	IV	Y	IV	Y	--	Y
4/27	P	Y	IV	Y	DV	Y
5/4	--	Y	P	Y	IV	Y
5/11	--	Y	--	Y	P	Y
5/18	--	Y	--	Y	--	Y

Figure 7. The intervention fidelity checklist including prompt type, session date, and setting name

Social Validity Outcomes

The results, as reported by Cole's mother on the 3-point Likert scale questionnaire, (see Figure 4) were very positive. She responded to most of the questions with "strongly agree." Some of these questions included the following: "My child has become more independent since using their checklist," and "The checklist has helped my child complete his schoolwork on time." Cole's mother also reported that some of the positive outcomes from using the checklist were that Cole was becoming more helpful at home, he was happier when telling her about his day at school, and he asked less frequently if she was happy. She also reported that she would like a copy of the checklist to use at home and when he is at a family friend's house. The student's answers to his verbally administered questionnaire, (see Figure 5) were also positive. Cole reported that he thought teachers were happy when he used his checklist, that he was earning the opportunity to complete cleaning tasks when he got happy faces on his checklist, and, most importantly, he reported that he liked earning happy faces the most.

Chapter 4

Discussion

The purpose of this study was to investigate the effectiveness of a self-monitoring behavior checklist on increasing on-task behaviors. The identified behaviors on the checklist were six classroom expectations that were identified as problem areas for Cole. The results of this study found that, with the use of the checklist, Cole significantly increased his on-task behaviors. This increase was seen across all three settings in which the study occurred. Likewise, Cole was able to continue the increase of on-task behaviors from the intervention to the independence phase. Social validity results revealed that the checklist helped Cole to become more helpful at home, happier throughout his day, and ask his mother less often is she was happy with him.

The self-monitoring behavior checklist was found to be an effective intervention. This was seen through Cole's increase of on-task behaviors between the baseline phase and the intervention phase. During baseline, Cole struggled with staying on-task and appropriately behaving across the three settings in which he was being observed. Within the first two sessions of the intervention phase, Cole significantly increased his on-task behaviors. Cole received no prompting or teaching during the independence phase and, even so, he maintained a blend of the six on-task behaviors during this phase. Cole found his self-monitoring behavior checklist to be a positive experience. He reported that he

thought teachers were happy when he used his checklist, that he enjoyed earning the opportunity to complete cleaning tasks, and that he enjoyed earning happy faces by properly earning happy faces on his checklist.

Throughout the study Cole completed two on-task behaviors more often than others. These behaviors included Cole staying in his seat and cleaning up. The other on-task behaviors were more difficult for Cole to complete correctly on a consistent basis. The difficult behaviors required more prompting than the others to complete. By the end of the study Cole was completing five on-task behaviors on average. Cole enjoyed carrying his checklist around, and while he would complete an on-task behavior, he would point to the corresponding picture on the checklist. While pointing, he would excitedly ask, "happy?" to the teacher closest to him. Cole reportedly enjoyed filling in his happy faces as he correctly performed on-task behaviors.

Although this study had positive outcomes, there are still limitations that should be discussed. One limitation in particular is that this was a single-case study. Although the results demonstrated a functional relationship between implementation of the intervention and a decrease in off-task behavior because the data was collected in the context of a multiple-baseline study over three separate settings. There was also a limitation on the accessibility of the checklist while in different settings. Cole had to access the checklist in different spots throughout his day. It would be important to

expand this by creating a mobile checklist that Cole could utilize when even out in the community.

It would be useful to expand this study to multiple participants while still utilizing a multiple baseline approach. This would account for learning differences as well as including participants with different ethnic backgrounds, disabilities, and grade levels. Additionally, this researcher had difficulty in finding previous studies that used self-monitoring systems that did not use words. This study was developed to include a checklist that primarily used color photographs and line drawings so that self-monitoring systems could be used by a broader group of students with intellectual disabilities and autism. Additional research is needed for participants who do not read. For these studies the checklists would be primarily in pictures, photographs, and line drawings.

This study utilized a most-to-least prompting system, however, additional prompting procedures could be used (e.g., a "least-to-most" or "time delay" procedure). Another expansion that should be considered is for students to have a peer helping to teach the system rather than an adult. Peer supports have been found to engage students with autism in general education academic settings (McCurdy & Cole, 2014). This expansion would aid more students with disabilities in seeking out help from peers and to develop friendships. Lastly, this study could be expanded to include structured and unstructured settings during a school day. This study looked at academic settings and did

not address play or social settings. It would be important to address both types of settings in order to expand research.

Finally, students with disabilities sometimes have more structure in school environments rather than in the home. Cole's mother reported that she hoped to expand the checklist to be used in the home. She reported that it would benefit Cole more if home and school environments more closely replicated each other. Partnering with families to develop self-monitoring systems that can be used across home and school settings is an important area for future research.

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