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The Self-Determined Student: Teaching Students With Exceptional Needs Self-Determination Through Class-Wide Self-Monitoring

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Abstract

Self-determination is one of the greatest indicators of post school success for all students. It encompasses a range of abilities such as self-regulation, choice making, goal attainment and autonomy. Students with exceptional needs have a significantly lower level of self-determination than typically developing peers. These students struggle to stay on-task, complete tasks, ask for help, and lack the prerequistory skills needed to possess self-determination. Self-monitoring through a class-wide approach has been a successful method in teaching and improving some of the skills of self-determination and promoting on-task engagement. The purpose of this study was to determine if self-monitoring of assessment (SMA) for students with disabilities in middle school would have a positive impact on a student's ability to stay on-task during instruction or independent work time. The participants were four eighth grade students with Individualized Education Plans (IEP) and spent 86% of the school day in the general education classroom. On-task behavior was defined as (a) a student sitting in one's seat or at standing desk, (b) looking at student's work instructional area or at the teacher, or (c) asking for help when necessary. This study used a single-case withdrawal design or A-B-A-B design. The results from this study indicate SMA is an effective tool to use in teaching students with exceptional needs how to better stay on-task to promote the acquisition of self-determination.

Keywords: self-determination, exceptional needs, special education, self-monitoring, middle school, self-regulation, on-task behavior

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This project is dedicated to my son Colin, who is the reason I pursued this degree. You are and will always be my greatest teacher. You are beautiful inside and out. You shine your beautiful light on the world and have shown so many how to truly love. You are beautiful. You are valuable. You are capable. You are strong. You. Are. Love. Your presence in my life is an honor and a blessing. This one is for you bud. I love you.

Love, Mom.

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Literature Review

Self-determination, the ability to make choices and take responsibility for those choices, is multifaceted and encompasses skills that allow an individual to independently participate in goal directed and self-regulatory behavior (Deci & Ryan, 1985; Field, Martin, Miller, Ward, & Webmeyer, 1998). Students who possess self-determination skills are better equipped to have higher achievement in school, resulting in better career and life outcomes as adults (Campbell-Whatley, 2006). In addition, students who possess self-determination are more likely to set goals, assess and modify their behavior, remain task-focused, and make personal choices that promote a fulfilling life (Campbell-Whatley, 2006).

Self-determination has positive impacts on all students; however, students with exceptional needs (e.g., students in special education) generally possess a lower level of self-determination when compared to typical peers (Chao & Chou, 2017). Students with exceptional needs have to work harder than typical peers to receive the same outcomes in the school setting. Explicitly teaching strategies such as choice making, self-regulation, motivation, and self-advocacy to students with exceptional needs can be effective in promoting the improvement of self-determination in conjunction with academic skills (Buzza & Dol, 2015; Schloss, Alper, & Jayne, 1994; Sinclair et al., 2017). The majority of self-determination skills require teachers to identify specific qualities of self-determination and build upon those skills. For example, self-monitoring has been found beneficial in increasing student academics and self-determination level (Schunk, 1983). Self-regulation is crucial in a student's ability to learn because it forces

students to assess, reassess, and analyze input based on their own behavior in the classroom (Harris, Friedlander, Saddler, & Graham, 2005). Therefore, the acquisition of self-monitoring and self-regulation skills is needed to allow students to monitor behavior and choices to improve learning outcomes.

The skills included in self-determination are important for students to possess, because the culmination of these skills is one of the greatest indicators of whether or not a person will be employed or unemployed as an adult (Konrad, Fowler, Walker, Test, & Wood, 2007). The educational setting is an optimal environment to promote and teach the acquisition of these skills to improve post-school success. Furthermore, understanding the facets of self-determination are imperative in recognizing the importance of these skills for students.

Self-determination Theory

Self-determination may be the most integral skill students learn during their time in school (Denny & Daviso, 2012). Self-determination is a type of internal motivation and includes three psychological needs: competence, autonomy, and relatedness (Schunk, 2016). Research by White (1959) defines competence as a need to master one's environment. In other words, people feel a need to be engaged in social and task oriented activities. Autonomy refers to a sense of self-control in an environment, which relates to our inner need of self-control and independence. This is the skill to self-regulate one's actions in order to attain goals and make choices. And lastly Deci and Ryan (1985) define relatedness as the need to belong. Humans have an innate need to belong to a group. In order to belong, people need to have an understanding of the difference between controllable situations and uncontrollable situations. In the classroom setting, this is important for students because each student has the ability to control behavior and learn to

take the initiative in learning. For this reason, self-determination is essential in education because it stresses the importance of a student's ability to independently learn (Deci & Ryan, 1985).

Self-determination is multifaceted and includes skills and beliefs that allow an individual to participate in goal directed, self-regulatory, and autonomous behavior (Field et al., 1998). It is important for an individual to have a consideration of personal strengths, weaknesses, and possess the belief in oneself to attain self-determination skills. Students who are able to function as a personal support system will have the ability to manage choices, behaviors, and lifestyle (Campbell-Whatley, 2006).

The qualities of self-determination can have long-term benefits for students. For example, Konrad and colleagues (2007) conducted a study measuring the post school success of students with exceptional needs two years after high school. Results indicate that self-determination has a positive impact on employment, post-secondary education, and vocational training rates in adulthood. This demonstrates self-determination skills are essential in promoting a student's independence in adult life after high school. Self-determination skills such as self-awareness, perseverance through tasks, emotional strength, goal setting, and seeking help are skills that set apart successful adults from less successful adults (Konrad et al., 2007). Self-determination also promotes positive self-esteem and self-perception resulting in the ability to manage and change one's environment (Campbell-Whatley, 2006). This is beneficial for students because it promotes confidence and instills a positive image that is needed to be successful in school. Recent studies have highlighted the connection between self-determination and academic achievement of students with exceptional needs (Chao & Chou, 2017; Konrad et al., 2007). It is imperative to apply these skills in an academic setting at a young age so students can carry these skills over into adulthood.

Students with Exceptional Needs and Self-Determination

Studies on self-determination demonstrate positive benefits for all students; however, in students with exceptional needs, research has shown these students have less self-determination than typically developing peers (Chao & Chou, 2017). Students with exceptional needs are defined in the Individuals with Disabilities Education Act (IDEA) as a student or child who possesses one or more of the following impairments "an intellectual disability, hearing impairment, speech or language impairments, visual impairment, emotional disturbance, orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disability who therefore require special education services" (IDEA, 2004). Students qualify for special education services because the disability has a direct effect on academic performance. Students can qualify for special education under the criteria Specific Learning Disability (SLD); this encompasses a plethora of conditions that affect one of the main psychological processes required to use language, spoken or written. This can result in a student's inability to listen, think, speak, write, spell or do mathematical calculations (IDEA, 2004). Students who qualify as SLD fall into the Mild/Moderate category under the federal requirements for students with exceptional needs (California Commission on Teacher Credentialing, 2013). In addition, Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD) also fall under this category.

Students with ADHD or ADD possess significant inattentiveness that affects their ability to focus during class. These students often have trouble completing assignments, producing quality work, and staying on-task. For example, 80% of students with ADHD or ADD have been found to show a difficulty in academic performance and require special education services

(Harris et al., 2005). Furthermore, the majority of students with exceptional needs struggle to make a successful transition from school-life into adult-life.

There are a number of indicators, which continue to show students with exceptional needs do not possess the skills to be successful after high school. Many students with exceptional needs remain unemployed and do not maintain enough income to become independent (Schloss et al., 1994). Furthermore, Wagner and colleagues (2005) conducted a study and found students with exceptional needs are also more likely to fall into the criminal justice system. This shows there are skills related to independence this population is not acquiring in the school setting in order to become independent in adult-life.

In a study conducted by Konrad and colleagues (2007) forty adults with exceptional needs were tested twenty years after leaving a school for students with learning challenges. The study looked to identify predictors of post-school success for students with exceptional needs; one predictor was the student's level of self-determination. The students who were considered to have success possessed the following attributes: self-awareness, proactivity, emotional stability, perseverance, self-regulation, goal setting, and seeking the use of help (Konrad et al., 2007). These skills are reflected in the definition of self-determination. This study reiterates the need to focus on self-determination skills in order to improve the quality of life for individuals with exceptionalities.

There is a correlation between the self-determination level a student possesses and a student's achievement in the academic setting (Chao & Chou, 2017). However, students do not gain these skills without explicit instruction (Campbell-Whatley, 2006). Furthermore, students with exceptional needs have to work harder than typical peers to learn and self-examine personal

capabilities and are often unable to master these skills without the guidance from teachers (Campbell-Whatley, 2006). These skills should be taught just as persistently as any other academic subject because of the importance and impact these skills have on the student (Campbell-Whatley, 2006). Not only does lack of time provide a barrier in this acquisition, but also the classroom support system put into place has been found to have a negative impact on self-determination.

Barriers

There are many reasons why students with exceptional needs are not acquiring self-determination skills. Some of these reasons were highlighted in the results of a national survey by Wehmeyer, Agran, and Hughes (2000) that asked special education teachers their opinions regarding self-determination. Special educators identified many reasons that interfered with teaching these skills such as limited amount of time, lack of support from administration, and some did not know how to incorporate these skills into the classroom setting. This study shows teachers have inadequate time and training to devote to teaching self-determination (Wehmeyer et al., 2000).

In-class support barriers. Another barrier which interferes in the acquisition of self-determination is the classroom support for students with exceptional needs. According to Ward (2011), students with exceptional needs are often supported by a paraprofessional or aide to assist in the classroom setting. Paraprofessionals typically have a range of responsibilities with minimal guidance, training, and supervision to fulfill daily roles (Carter, Lane, & Sisco, 2012). Students who require a one-on-one aide often receive the majority of support from the paraprofessional rather than from peers or teachers. This can result in the student's overreliance

on the paraprofessional (Ward, 2011). While this is often unintentional, paraprofessionals can inadvertently hinder the acquisition of self-determination by offering too much support for students with exceptionalities (Carter et al., 2012). Furthermore, many special education classroom settings can be overly structured which also inadvertently hinder this acquisition of skills (Whitman, 1990). This over supported environment interferes with the student's potential in becoming independent and result in a lack of experiential opportunity for the student.

Opportunity barriers. Furthermore, teaching self-determination has mainly been targeted to students who are in upper grades and even more so to students who are transitioning out of special education and entering the real-world (Campbell-Whatley, 2006). This results in students not making a successful transition from school into adult-life fluidly. Many students with exceptional needs do not possess the decision-making skills to make independent living possible (Schloss et al., 1994). Further research by Schloss and colleagues (1994) suggest this is because students with exceptional needs are not given the opportunity to fail or the opportunity to make simple choices throughout the day. This is especially true for students with higher needs whose day is often very regimented and structured with little opportunity to make even the simplest choices like what to eat, or what to wear.

Allowing students to make independent decision does not come unwarranted. Schloss and colleagues (1994) state there are some risks involved in allowing students with exceptional needs to make choices independently. For example, if a student is trying to acquire the skill to use the bus to travel home and rides the wrong bus this could potentially be very dangerous for the student. In some situations, the risks outweigh the reward and educators teaching these skills need to find interventions that provide balance between allowing students to acquire

responsibility without inflicting potential long-term harm. As a matter of fact, there are many interventions available to help teachers integrate these skills into their classroom setting.

Interventions

According to a study by Wood and Test (2001), the majority of self-determination interventions have focused on teaching one skill of self-determination to students with exceptional needs. Studies have targeted promoting choice-making decisions to students who possess severe needs, and self-advocacy to students with mild or moderate needs. Few studies exist in regard to goal acquisition, self-regulation, self-evaluation, and problem solving (Wood & Test, 2001). However, self-regulation, self-advocacy, choice making, and goal setting skills all may be required of an individual to be successful in the workforce (Wood & Test, 2001). Self-determination curriculum has been implemented in the school setting with a focus on intervening by addressing choice making, self-regulation, and motivation.

Choice making interventions. According to Schloss and colleagues (1994) there has been an increase in research studies supporting the significance of choice making for students with exceptional needs. Agran, Storey, and Krupp (2010) refer to choice making as the most important facet of self-determination. Components of self-determination emphasize the importance of allowing individuals to make appropriate choices regarding personal life preferences such as housing, leisure, and employment. Allowing such choices can increase the meaning and quality of life for individuals with exceptionalities. Schloss and colleagues (1994) teach choice making by changing and measuring the level of input the student can have in making decisions. Students can have a great level of input or minimal level of input depending on the potential of risk the choice would have on the individual. This study also measured the

degree to which the student accepts support from others in decision-making. This intervention is based on the natural occurrences of the student in low-risk environments and the ability to make appropriate choices.

The freedom to allow students with exceptional needs to make personal choices is a philosophy gaining support (Schloss et al., 1994). Students with exceptional needs have a universal right to voice opinions and seek personal desires based on those opinions. This allows students the power to make choices based on what is important and meaningful to each individual (Agran et al., 2010). Incorporating choice making curricula into the classroom will help motivate student engagement by allowing students to choose daily tasks and classroom responsibilities which best appeal to the individual's abilities (Agran et al., 2010).

Self-regulation interventions. Self-regulation is closely related to acquiring the skills of self-determination. Buzza and Dol (2015) define Self-Regulated Learning (SRL), as the ability for students to set goals and monitor those goals throughout the learning process. It involves the ability to self-observe and self-react to a person's surroundings (Whiteman, 1990). This will empower students to increase academic success as well as have a positive impression of self-determination skills.

Buzza and Dol (2015) applied SRL to a group of 10th grade students with varying needs in an alternative education program called Fast Forward. Students were asked to set goals at the start of each class and monitor personal set goals at the end of class. The students were scored based on four criteria; quality of daily goals, perceived significance of writing daily goals, motivational beliefs, and learning skills and engagement (Buzza & Dol, 2015). Results from this intervention showed the greatest significance and improvement in the quality of the goals

students wrote. This is an important because goal writing quality showed an increase in the student's ability to self-regulate emotions and behavior. This also showed a positive relationship with students' ability to describe the content of what was learned. The qualities of self-regulation may be the most important for students to learn in the realm of self-determination because it requires students to understand how to behave and perform academically in order for learning to take place. Finally, self-regulation requires the ability to self-monitor and teaches students to have awareness of academic behavior (Harris et al., 2005; Whitman, 1990).

Self-monitoring. In order for self-regulation to be truly attained a student with exceptionalities needs the ability to self-monitor choices, behavior, and progress in the academic setting (Wehmeyer, 1992). Self-monitoring is a type of self-management strategy, which teaches students to record and observe the occurrences of a target behavior (Cooper, Heron, & Heward, 2007). The principals of self-management and self-determination are closely related in the sense that both promote the development of autonomy. Self-determination is the accumulation of many skills where self-management focuses on the personal application of skills that results in a self-determined student. Furthermore, self-monitoring can be beneficial to provide a range of important life skills such as social awareness, appropriate behavior, and listening ability (Boswell, Knight, & Spriggs, 2013). These skills need to be explicitly taught and because there are so many components and qualities which define and allow a person to become self-determined; teaching these skills needs to be a focus of each individual skill set within the self-determination parameters. According to Harris and colleagues (1994) self-monitoring and recording by students has been shown to increase the amount of time students stay on-task in the classrooms as well as increase academic performance.

Self-monitoring interventions can be used individually or teachers can implement these as a class-wide approach. A study by Kern and colleagues (1994), implemented a class-wide approach to improve classroom behavior. Students were asked in intervention phases to keep track or self-monitor on-task or off-task behavior. Results showed the use of self-monitoring as a class-wide approach was effective and successful (Kern, Dunlap, Childs, & Clarke, 1994).

Additionally, self-monitoring is best done in combination with self-recording. Some researchers have focused on two different methods: self-monitoring of performance (SMP) and self-monitoring of attention (SMA). SMP requires students to assess, evaluate and record specific qualities of academic performance. This can be shown by the number of problems on a worksheet attempted or the number correct and time spent on each problem. SMA concentrates on evaluating and recording attention-based behavior and focuses on increasing on-task behavior (Harris et al., 1994). While each are focusing on self-assessment SMP focuses on performance and SMA focuses on on-task behavior; both aim to increase academic performance.

Furthermore, in a study by Harris and colleagues (2005) researchers compared the results of SMP and SMA to six elementary students with exceptional needs. The results yielded SMA to have more of an effect on the academic performance of students than SMP. SMA can be done alone but is most effective when students are asked to take part and self-record on-task behavior. Students with exceptional needs have been shown to be passive learners and lack the ability to have a task-focused approach when in the classroom setting. Task completion or the ability to stay on-task asks the students to take the initiative in learning and move from being a passive learner to one who is more motivated to take responsibility. Research continues to show SMA as an effective and accepted intervention to help increase on-task behavior in the classroom.

Conclusion

Self-determination is referred to as one of the most critical concepts students can learn in the educational experience (Denny & Daviso, 2012). Students who possess self-determination are better equipped to have positive adult outcomes, have the ability to make life decisions, and increase a student's self-perception (Campbell-Whatley, 2006; Konrad et al., 2007). There continues to be a concern with the lack of self-determination for students with exceptional needs in comparison to typically developed peers (Chao & Chou, 2017). Applying self-determination curricula and interventions into the classroom has been shown to have positive effects on students with exceptional needs. Furthermore, Field and colleagues (1998) emphasize the importance of explicitly teaching these skills to students with exceptional needs in order for students to acquire self-determination. There is still a need to teach students a larger variety of these skills in the academic setting which are both explicit and individualized based on student need (Wood & Test, 2001). In addition, teachers recognize the acquisition of self-determination for students with exceptional needs is a direct result of allowing students the opportunity to practice these skills and the importance it has on a student's long-term life (Sinclair et al., 2017).

Method

The purpose of this study is to determine if the self-determination intervention of SMA can be implemented to increase on-task behavior for students with disabilities. SMA has been shown to have a positive impact on students' ability to stay on-task in the classroom setting. For the purpose of this research, on-task behavior is defined as (a) a student sitting in one's seat or at a standing desk, (b) looking at the student's work or at the teacher, or (c) asking for help when necessary (Boswell et al., 2013). Students who possess the ability to stay on-task are more likely

to have academic success because it allows students to monitor in-class behavior and teaches the self-regulation of choices and behaviors. By implementing the SMA into the student's classroom we will determine if the SMA has a positive effect on students with exceptional needs on-task behavior.

Research Question

Does giving middle school students with exceptional needs a SMA paired with student self-recording increase on-task behavior?

Hypothesis

It is hypothesized that explicit teaching of self-determination skills through self-monitoring for students with exceptional needs will increase on task behavior in the classroom setting. Evidence from numerous sources has shown that self-monitoring and self-recording strategies increase the amount of time students spend on-task and engaged in the classroom environment (Harris et al., 2005; Schunk, 1983; Sheppard & Unsworth, 2011; Wehmeyer, Yeager, Bolding, Agran, & Hughes, 2003).

Research Design

The research design used in this study was a single case withdrawal design or A-B-A-B design (Cooper et al., 2007). In this design, each participant was considered his/her own control. Furthermore, this design was chosen because the intervention phases were implemented and then were withdrawn in order to see if the intervention was effective in promoting on-task behavior in the participants. The four participants chosen received the treatment in the general education class and monitored on-task behavior. Due to the Coronavirus-19 (COVID-19) school instruction was shifted to an online distance learning (DL) model during the initial baseline phase. The phases of this research were baseline (i.e., Phase A), intervention (i.e., Phase B), withdrawal (i.e.,

Phase A), and return to intervention (i.e., Phase B). During baseline, the class was instructed as usual and participants who were off-task for one consistent minute were re-directed by a verbal prompt. The phase change from baseline to intervention was based on on-task behavior (i.e., in-seat or standing desk, eyes on work, instructional area or the teacher or asking questions regarding assignment; Boswell et al., 2013). Stability was reached when three data points were consistent within +/- 10% or showed a nontherapeutic trend. The intervention was implemented after a stable baseline was established (Wills & Mason, 2014).

During the intervention phases, participants were given the SMA and data collection began (Hallahan & Sapona 1983; Harris et al., 1994). The SMA was paired with a recording of low tone sounds, which was distributed at timed intervals throughout the period. A momentary time sampling (MTS) was used to collect data during the intervention phases. MTS is a form of direct observational data collection and requires the observer to visually see, observe, and record the target behavior (Boswell et al., 2013). MTS records whether the behavior is occurring at the precise moment each interval ends, and is used primarily to measure on-task behavior because such behaviors are easily observable. This differs from other forms of time sampling methods such as Whole-interval or Partial-interval recording methods where the observer records whether the targeted behavior took place throughout the entire interval or during any portion of the interval, respectively (Cooper et al., 2007). Once stability was reached in the intervention phase, withdrawal of the intervention was implemented (i.e., no changes in the classroom routine or schedule, absence of SMA, student self-recording and only verbally prompting when participants were off-task) until stability was again reached before moving to the last intervention phase (Wills & Mason, 2014).

Independent variable. The intervention or independent variable used in this study was a method of SMA. SMA (Hallahan & Sapona, 1983) is a self-monitoring technique that requires students to assess, evaluate and record in-class attentiveness and engagement by targeting on-task behaviors (see Appendix A). The participants were trained by the teacher on how to monitor on-task behavior by a self-monitoring log, which was used to record on-task behavior. The SMA was prompted by a recording of low tone sounds at 3-minute timed interval times throughout the period. When the sound was disbursed, participants were asked to record on-task behavior for the moment the sound occurred. The researcher and inter-rater also collected this data at the same time as the students; the researcher's data was the only data used for analysis (Harris et al., 2005).

Dependent variable. The dependent variable in the study was on-task behavior. On-task behavior is conceptually defined as: (a) a student sitting in one's seat or at standing desk, (b) looking at student's work, instructional area or at the teacher, or (c) asking for help when necessary (Boswell et al., 2013). On-task behavior was measured by a MTS where the observer recorded on-task behavior by making a check mark for "yes" or "no" to represent each participant's on-task behavior (see Appendices A & B).

Setting & Participants

The school where the current study took place is a middle school in Central California. The school serves approximately 575 students enrolled in the 6th, 7th and 8th grade. The school is predominantly Caucasian 64%, Hispanic 20.5%, two or more races 8%, Asian 3.9%, Black or African American 0.5%, and Native Hawaiian or Pacific Islander 0.5%. Furthermore, 9.2% are English Language Learners and 15.9% come from socially economic disadvantaged homes.

Students who possess an Individualized Education Plan (IEP) make up 7.5% of the population and are receiving special education services (School Accountability Report Card, 2017).

The participants selected for this study were in the 8th grade. The type of sampling used to select participants was purposeful convenience. Purposeful sampling was used to ensure the participants chosen for the study had the needed characteristics for the study to be successful. All participants attend middle school and were selected based on teacher recommendations. All participants needed to possess an Individualized Education Plan (IEP) and were receiving special education services. Four students were selected to participate in this study. The study took place in a general education language arts class with 24 students that started face to face and was moved to a DL setting via Zoom video chat meetings. There was a general education teacher and two instructional assistants in the classroom. Each participant was assigned a pseudonym for confidentiality and to provide anonymity.

Student 1. Lucy is a 12-year-old Caucasian girl who has qualified for special education services under Specific Learning Disability. She is in the general education setting 86% of her day and 14% (one period) she is enrolled in a study skills class which is designated for students with IEP's to offer extra support and re-teaching.

Student 2. Wendi is an 11-year-old Hispanic girl who has qualified for special education services under Specific Learning Disability for ADD. She is in the general education setting 86% of her day and 14% (one period) she is enrolled in a study skills class which is designated for students with IEP's for them to have extra support and re-teaching.

Student 3. Henry is an 11-year-old Hispanic boy who has qualified for special education services under Specific Learning Disability for Attention Deficit Hyperactivity Disorder

(ADHD). He is in the general education setting 86% of his day and 14% (one period) he is enrolled in a study skills class which is designated for students with IEP's for them to have extra support and re-teaching.

Student 4. Grace is a 12-year-old Hispanic girl who has qualified for special education under Specific Learning Disability for visual processing disorder. She is in the general education setting 86% of her day and 14% (one period) she is enrolled in a study skills class which is designated for students with IEP's for them to have extra support and re-teaching.

Measures

In order to measure on-task behavior (i.e., in-seat or standing desk, eyes on work or the teacher or asking questions regarding assignment) the raters were recording on a data log sheet to measure the MTS for each 3-minute time interval. The SMA only occurred in the intervention phases and MTS was used to measure on-task behavior. The researcher and inter-rater observer recorded a check mark next to "yes" or "no" to represent on-task during the MTS (see Appendix A and B). The participants only recorded a checkmark on their daily logs if they were on-task representing a "yes" for on-task behavior. During the baseline and withdrawal phases (i.e., Phase A) the recorders used a silent vibration to signal when to start recording on-task behavior for each participant. In the intervention phases (i.e., Phase B), an auditory sound signaled the students and recorders to record on-task behavior. The MTS was recorded in three-minute intervals for 20-30 minutes of a class period. MTS can be done in different increments and has been shown to be effective from 20-second intervals to three-minute intervals. The older the students the more time can pass in-between prompt intervals. The start time of the data collection period will be determined based on when the teacher starts instruction for the day. This is

because observation periods need to fall within lecture or independent work to measure on-task behavior (Cook, 2014).

Percent of intervals with on-task behavior was calculated using the following formula: number of intervals with on-task behavior divided by number of intervals with on-task behavior plus number of intervals without on-task behavior, multiplied by 100% (Boswell et al., 2013). The participants' data was checked for accuracy with the recorders data each day to assess if further instruction on recording data was needed. For the duration of the study, the intervention and baseline phases were recorded. A sample form used to collect data can be found in Appendix A.

Reliability. Reliability was taken into consideration by ensuring a second person was collecting data 27% of the time during all phases for each participant. Before the phases began, the second rater was trained by the researcher to collect data regarding on-task behavior (i.e., in-seat, eyes on work or teacher or asking questions regarding assignment). The raters also were trained as to how to collect and record the data during the MTS during the observation period. Inter-rater reliability was calculated by the percentage of agreement divided by the percentage of agreement and disagreement, multiplied by 100. The results for data collection agreement was a mean of 88% agreement for Lucy, with a range of 80%-100%. The results for Wendi were a mean of 88% and a range of 85%-91% of agreement. Henry's range was 80%-86% of agreement and the mean was 82%. And Grace's range for agreement was 85%-89% with a mean of 87%.

Intervention

The intervention for this study was SMA, this is a self-assessment technique which asks students to assess their own in-classroom on-task behavior (Hallahan & Sapona, 1983). SMA is

most effective when students are asked to take part and self-record on-task behavior. This was done by using MTS which was recorded by the students and the raters on a data log sheet. All students in the classroom received the intervention as a class-wide approach but only the participants chosen for the study were monitored by the raters. All students recorded on-task behavior at the top of the instructional material that was used for the observation periods. The researcher asked each student the number of check marks recorded at the end of each observation session. The duration of the SMA lasted for 20-30 minutes broken down into three-minute intervals during lecture or independent work-time. When the sound of a tone was heard, this served as a prompt for students to record on-task behavior by making a check mark representing "yes" if the student was on-task. The students and raters recorded frequency counts for on-task behavior each time the sound of the tone occurred. Intervention phases were conducted during participants' DL class Monday, Wednesday and Friday at 2pm (Cook, 2014; Harris et al., 2005).

Procedures

Baseline. The baseline phase (i.e., Phase A) consisted of no changes to the participant's current class routine or schedule. Participants were verbally prompted by the teacher or paraprofessional to remain on-task when needed. Observations began when the students were seated or lecture began. During baseline, the raters used a silent vibration to prompt data collection instead of the auditory tone. This ensured the class could carry on instruction as usual and would not be affected by the SMA (Boswell et al., 2013). The silent MTS began and the rater recorded whether or not the participant was on-task at the time of the silent MTS prompt. Data collection occurred during baseline for 30 minutes of independent or instructional class time. During the baseline phase, school was transitioned to DL, at which point the observation sessions fluctuated from 20-30 minutes of online learning. The transition to the intervention

phase was initiated when three DL baseline data points were observed to be consistent within +/- 10% of the baseline data from the classroom or showed a nontherapeutic trend (Wills & Mason, 2014).

Intervention. For the intervention phases (i.e., Phase B) students were first trained on the SMA and how to record data. The participants were instructed to record on-task behavior at the top of their paper or instructional material for the session (Appendix A). This occurred when the sound of the tone was heard and students made a checkmark to represent "yes" for on-task behavior. In conjunction with this, the researcher took the same data as the students; the researcher's data was the only data logged for analysis at the end of each period. Students were not prompted or re-directed during the intervention phases to keep the authenticity of the intervention.

Data collection. Data was collected through both the intervention and baseline phases. Data was collected by the researcher and a second data collector was present 20% of the time for inter-rater reliability. Raters collected data on all 4 students individually. Data was collected Monday through Friday for 30 minutes during in-class observations and for 20-30 minute periods Monday, Wednesday and Friday during the DL observations. This happened during seat instruction, video conferencing or independent work time. This was done by MTS in which students were observed to be on-task, or not, when the auditory tone was heard. Percent of intervals with on-task behavior was calculated using the following formula: number of intervals with on-task behavior divided by number of intervals with on-task behavior plus number of intervals without on-task behavior, multiplied by 100% (Boswell et al., 2013; Gulchak, 2008). The researcher only collected data that was conceptually defined as on-task behavior: (a) a student sitting in one's seat or at standing desk, (b) looking at the student's work, instructional

area or at the teacher, and (c) asking for help when necessary (Boswell et al., 2013). This was ensured by the raters having prior training to account for reliability and validity.

Fidelity. In order to account for fidelity to the intervention, a fidelity checklist was implemented (see Appendix C). During each intervention period, the general education teacher and researcher were present to monitor fidelity of the intervention. This allowed for an analysis of the procedural fidelity to be conducted. Both the researcher and general education teacher filled out the checklist for 20% of the observation periods. The ratings were compared and scores were discussed. The intervention was delivered with 100% fidelity according to the fidelity checklist (See Appendix C).

Ethical Considerations

Ethical considerations were given careful attention in the process of this study to ensure the best interest of the participants. For example, the study did not take participants away from the classroom and minimal time was used to perform the interventions. All interventions were incorporated into the participant's general education or DL class. The incorporation of SMA was easily integrated into this curriculum without interruption to the participants' school day. All participants were given pseudonyms to protect the participant's identity and ensure the study would be completely confidential. The participants did not endure any physical or emotional harm during the process of the study. Furthermore, the benefits of the study could potentially have long-term lasting outcomes for the participants involved. For these reasons, the ethical risks were considered relatively low for the participants involved.

Validity threats. Validity threats were addressed by taking into consideration participant effects or reactivity to the study. This was done by not informing the participants when the study

would be taking place. This ensured participants did not change or alter on-task behavior during the data collection period. All students in the class were recording independent progress. Teacher bias was also a validity threat because the researcher was familiar with the participants and was aware of each student's needs and personality. In order to account for this, the researcher had a second observer collecting data to help ensure the established protocol was being followed for the study.

Social Validity

At the completion of the study, the general education teacher and researcher completed a four-point Likert scale (i.e., 1= strongly disagree to 4= strongly agree) social validity questionnaire (See Appendix D). Both teachers completed the survey because they were present in the classroom before and during the intervention phases. The questionnaire, adapted from Berger, Manston and Ingersoll (2016), consists of nine questions designed to understand the perceived usefulness, significance and satisfaction with the implemented intervention. Participant responses were kept confidential and descriptive statistics were conducted to gain insights regarding the intervention. Results indicated that all respondents felt the intervention was effective in increasing student's on-task behavior. However, due to the minimal time the intervention took place, respondents were not confident participants behavior would continue or have a lasting effect. Furthermore, respondents highly agreed the intervention was easily incorporated into the classroom and would be likely to use this intervention in the future.

Data Analyses

A visual analysis of the observation data was conducted to compare the baseline and intervention data for each participant in the general education classroom based upon observed changes in level, trend and variability of the data in each experimental phase. In addition, the

percentage of non-overlapping data (PND) procedure described by Scruggs and colleagues (1987) was used. The guidelines recommended by Asaro-Saddler (2010) were adopted, which identify a PND score of 90% as indicating the intervention points exceeding the extreme baseline value as being a very effective treatment; 70-90%, an effective treatment; 50-69%, indicating some effect, and less than 50%, a questionable treatment.

Results

Figures 1-4 display the results for each of the participants (also see Appendix E). The x-axis displays the days the data was collected and the y-axis displays the percentage of on-task behavior that was exhibited during the data collection periods. The vertical lines within the graph represent the phase changes from baseline (A) to intervention (B) to withdrawal or back to baseline (A) and intervention (B). Due to the Corona Virus-19 outbreak, school was shifted to a distance learning (DL) format during the middle of the baseline data collection. This is shown by the vertical line in the middle of the first baseline phase. This means instruction resumed via online video chat rooms versus in-class instruction.

Figure 1 displays the results for Lucy. In the first baseline phase, Lucy had exhibited on-task behavior ranging from 50% to 90% with an average of 64% for both face-to-face and online instruction. The range of on-task behavior for the in-class instruction alone was 50%-90% with an average of 70%. However, once the DL was implemented the range for the first baseline dropped to 50%-66% and the average on-task behavior was 58%. During the first intervention phase, the SMA was implemented and Lucy's range for on-task behavior was 50%-65% and the average for on-task behavior was 57%. During the withdrawal or second baseline phase her range for on-task behavior was 50%-55%. Her average for on-task behavior was 53% during a

20-30-minute instruction period in the DL setting. In the final intervention phase, Lucy's range for on-task behavior was 60%-82%. The average for on-task behavior was 74% for a 20-30-minute DL class session. Percentage of non-overlapping data (PND) across all phases was 0% and for strictly the DL class sessions the PND was 33%.

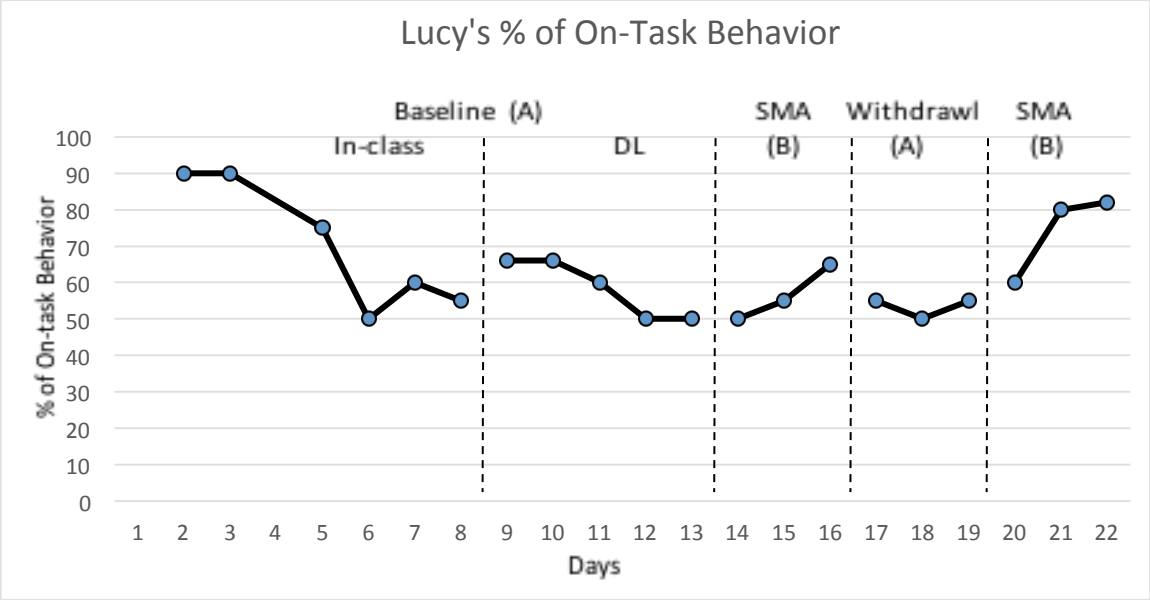

Figure 1. Baseline and SMA intervention (A-B-A-B) data for Lucy.

Figure 2 displays the results for Wendi. In the first baseline phase, Wendi exhibited on-task behavior ranging from 50% to 70%. The total average of on-task behavior in baseline was 59%. The range for the in-class instruction observations alone was 50%-70% of on-task behavior with an average of 62%. However, once the DL was implemented into the baseline the range for baseline dropped to 50%-60% and the average on-task behavior was 55%. During the first intervention phase, SMA was introduced and Wendi exhibited a range of 60%-70% of on-task behavior during a 20-30-minute DL class period. Her average was 65% for on-task behavior. In the withdrawal or second baseline phase, Wendi's range went down to 50%-60% for on-task behavior and averaged 55% for on-task behavior. During the final intervention phase, the range

for on-task behavior was 55%-80. The average was 68% of on-task behavior for a 20-30-minute DL class session. PND across all phases was 50% and for the DL class sessions alone the PND was 83%.

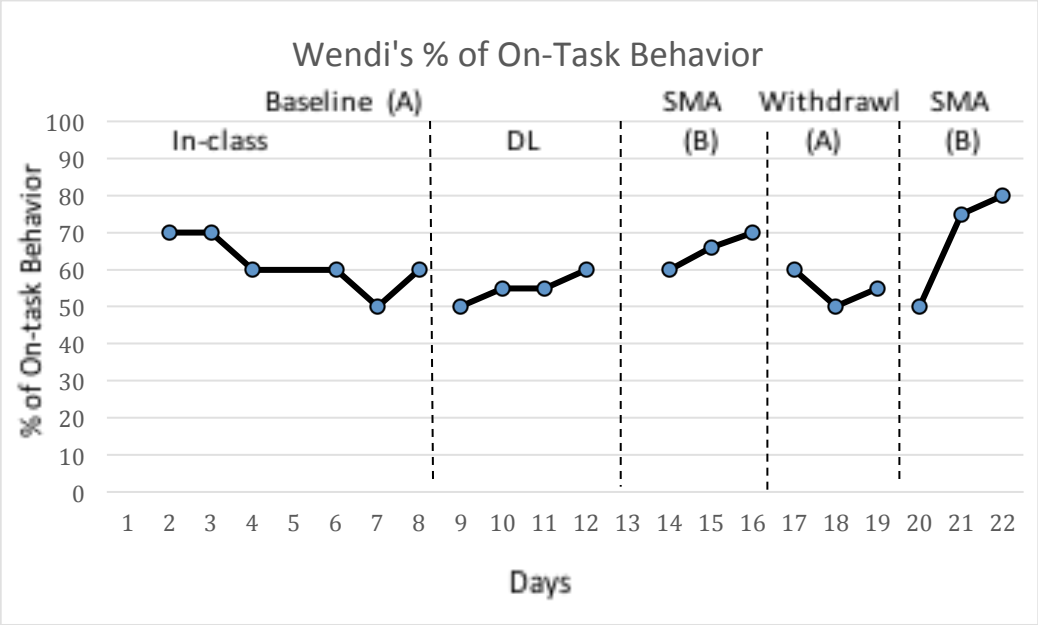

Figure 2. Baseline and SMA intervention (A-B-A-B) data for Wendi.

Figure 3 displays the results for Henry. In the first baseline phase, Henry exhibited on-task behavior ranging from 50% to 60%. The total average of on-task behavior in baseline was 51%. The range of on-task behavior for the in-class instruction alone in baseline was 50%-60%, with an average of 57%. However, once the DL was implemented the range for baseline dropped to 25%-50% and the average on-task behavior was 43%. During the first intervention phase, Henry had a range of 45%-55% of on-task behavior and his average was 50%. In the withdrawal phase or second baseline, he exhibited a range of 35%-50% of on-task behavior for a 20-30-minute DL class session. His average was 42% for on-task behavior. During the final intervention phase, the range of on-task behavior was 55%-65%. The average of on-task

behavior was 59% for a 20-30-minute DL class session. PND across all phases was 17% and for the DL class sessions alone the PND was 83%.

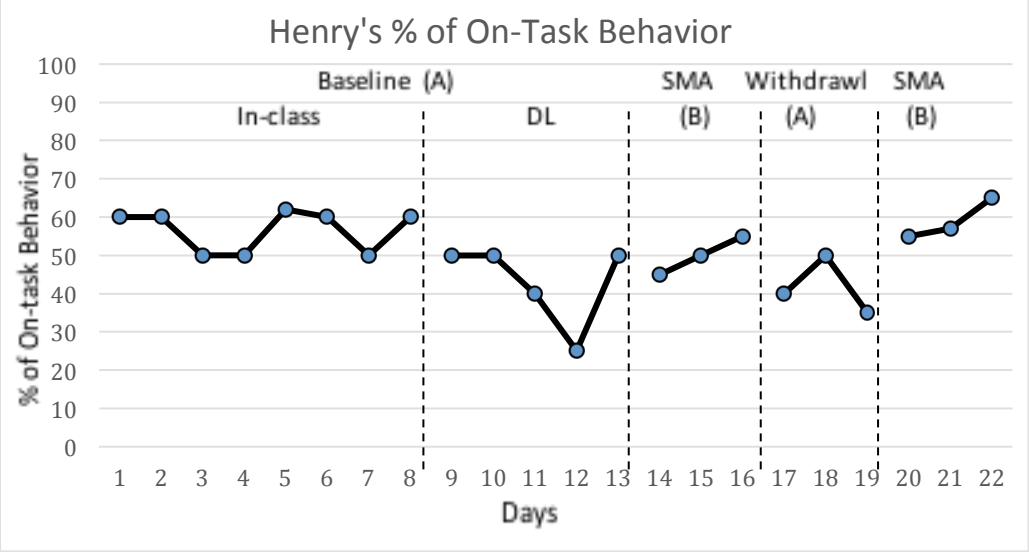

Figure 3. Baseline and SMA intervention (A-B-A-B) data for Henry.

Figure 4 displays the results for Grace. In the first baseline phase, Grace had exhibited on-task behavior ranging from 70% to 40%. The total average of on-task behavior in baseline was 51%. The range of on-task behavior for the in-class instruction alone was 40%-70%, with an average of 53%. However, once the DL was implemented the range for baseline dropped to 40%-50% and the average on-task behavior was 47%. During the intervention phase, the SMA was implemented and the range for on-task behavior was 45%-55%. Grace's average for on-task behavior was 52% for a 20-30-minute DL class period. In the withdrawal or second baseline phase the range for on-task behavior was 40%-45%. Grace's average for on-task behavior was 43%. During the final intervention phase, the range of on-task behavior was 55%-70%. The average for on-task behavior was 63% for a 20-30-minute DL class session. PND data across all phases was 17% and for the DL class sessions alone the PND was 83%.

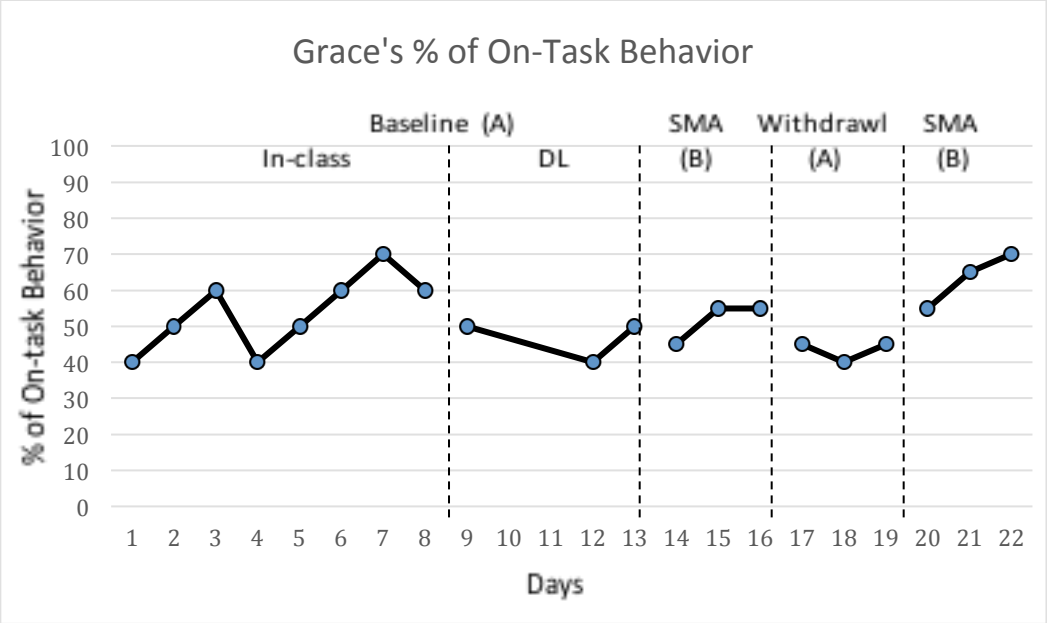

Figure 4. Baseline and SMA intervention (A-B-A-B) data for Grace.

Discussion

The purpose of this research was to determine if the use of SMA would increase on-task behavior for four middle school students with exceptional needs. It was hypothesized that implementing the specific self-determination skill of self-monitoring would increase on-task behavior for students with exceptional needs. Numerous studies have verified the implementation of self-monitoring to be an effective tool in increasing student on-task behavior (Harris et al., 2005; Schunk, 1983; Sheppard & Unsworth, 2011; Wehmeyer et al., 2003). Baseline data was collected and stability was reached when three data points were consistent within +/- 10% or showed a nontherapeutic trend. The intervention was implemented after a stable baseline was established (Wills & Mason, 2014). During all intervention phases, there is a consistent increasing trend for all participants, which indicates the intervention had a positive impact on the participants' on-task behavior. This was seen almost immediately and was visible

in participant's first or second data point after the intervention was introduced and continued on an upward trend.

Due to the Coronavirus-19 pandemic the initial baseline phase was interrupted and the classroom setting was shifted to the DL setting. The results from all participants in the initial baseline phase indicate a 10%-13% decrease in on-task behavior when the classroom setting changed to DL. The DL setting carried through the rest of the intervention and baseline phases to complete the study. Results for Henry show a 17% PND when the in-class session is included however, when calculated for only the DL setting the PND is 83%, which indicates an effective treatment. When looking at the trend in each intervention phase, Henry's on-task behavior is increasing which also indicates the intervention is having a positive impact on his on-task behavior. Furthermore, the PND results for Wendi and Grace are also similar to Henry's indicating an effective treatment when only the DL is calculated and both also showed an increasing trend during the intervention phases indicating a positive impact on on-task behavior.

The results for Lucy show the intervention was less effective; however, the trend in the intervention phases indicate the treatment is increasing her on-task behavior. The PND for Lucy was 0% when including in-class setting and 33% in the DL only setting representing a questionable treatment. Throughout the baseline phases, Lucy shows a decreasing or stable trend for on-task behavior when the SMA is absent. When the intervention phases were implemented and the SMA started, Lucy's on-task behavior shows an increasing trend for each intervention phase. While the PND does not indicate an effective treatment, the trend in each intervention phase demonstrations otherwise, indicating the SMA did have a positive impact on Lucy's on-task behavior.

Limitations and Further Research

Regardless of the results of this study, limitations for this research must be taken into consideration. A purposeful convenience sampling was used to identify the participants for this research and ideally a larger sample size would be preferred. Furthermore, the start of the research started with five students and dropped to four because of low attendance. This was due to the DL model where students had to login to class remotely and one student did not have consistent access to the Internet. For this reason, that student was taken out of the study.

This study was not designed to accommodate for the school setting change in format from in-class to DL and may have affected the data collection process and accuracy of data collection. The raters were unable to fully see the students' entire body and were not present with them in the room while the DL took place. This could account for some discrepancies in the accuracy of the rater's data collection, and the somewhat low inter-rater reliability data, because they could not see the student fully. In addition, the DL data collection could have affected the low IRR. The IRR range was 80%-100% for participants and the average mean was 86%. This is in the lower range for IRR data and could have been a result not having physical access to the students. Furthermore, the change in format affected other unforeseen aspects of the research. The DL format did not always allow for all data points to be collected because students could log on the class at any time during instruction. If students were late, all the data for each 30-minute period was not collected for that session. In addition, some DL sessions were 20 minutes thus affecting the ideal 30-minute session.

Furthermore, another limitation was the research did not have a check-in or out procedure to check the accuracy of the participant's data. This was due to the limited time students were able to spend in sessions during the DL setting. The purpose of a check-in or out procedure is often used along self-monitoring as an opportunity to reward students for producing data which

matches the data of an observer. This has been a successful method to increase students' accuracy in self-monitoring (Cooper et al., 2007). However, due to time constraints and the change to DL setting this method was not used.

Further research could focus more on upper grade students. Much of the research done to promote self-determination skills is done in lower grades and then again is addressed in transition programs for life skill planning. Further research could also introduce the use of technology to help engage and motivate the students in self-monitoring skills. There was also interesting data that came from the change in the learning environment from in-class instruction to DL instruction. While this was not what the research set out to measure, some students had a significant change in on-task behavior when the DL setting started. For example, Grace's average for the in-class instruction was 70% for on-task behavior and when the format changed to DL her on-task behavior went down to 58% indicating she was better focused when she was in the traditional in-classroom setting.

Conclusion

This study supports the use of SMA as an effective tool for changing on-task behavior for students with exceptional needs. Furthermore, teachers can implement this technique to help students who are frequently off-task and often need redirection to stay focused during the class period. The intervention was non-intrusive and students easily adapted to the SMA and MTS. In addition, students were able to see the progress made by self-recording which promoted the intrinsic and self-esteem producing benefits of attaining self-determination.

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Appendix A

Student Daily Recording Log Example

Name: **Date: _____**

On-task means:

- sitting in one's seat or at standing desk
- asking for help when necessary
- looking at work or at the teacher

Am I on-task?

"Yes" (on-task)

Appendix B

Inter-rater and Researcher Daily Log Sheet

Date:_____

Interval Length: Every 3 minutes for 20-30 minutes.

On-task Behavior: (a) a student sitting in one's seat or at standing desk, (b) looking at student's work or at the teacher, or (c) asking for help when necessary

Place a Check mark next to the phase: Baseline: _____ Intervention _____

Student Pseudonym	Activity during data collection	On-Task Frequency counts	Off-Task Frequency counts

Appendix C

Fidelity Checklist

*Place a checkmark as items are observed

	Yes	No
Students are asked to set up instructional material for SMA to start (i.e. "yes" at the top of paper and ample space to make checkmarks)		
Rater puts pseudo names for participants on their daily record log		
Timer is set for 3 minute intervals when teacher starts instruction		
Students are told the SMA has started and to record their on-task behavior when the sound is heard		
Teacher and aides conduct class and do not prompt students when they are off-task during the SMA		
Students and rater make frequency counts when the auditory sound is made		
Both teacher and students add up the overall number of frequency counts for the observation period		
Teacher collect the number of frequency counts for on-task behavior at the end of the period from the students		

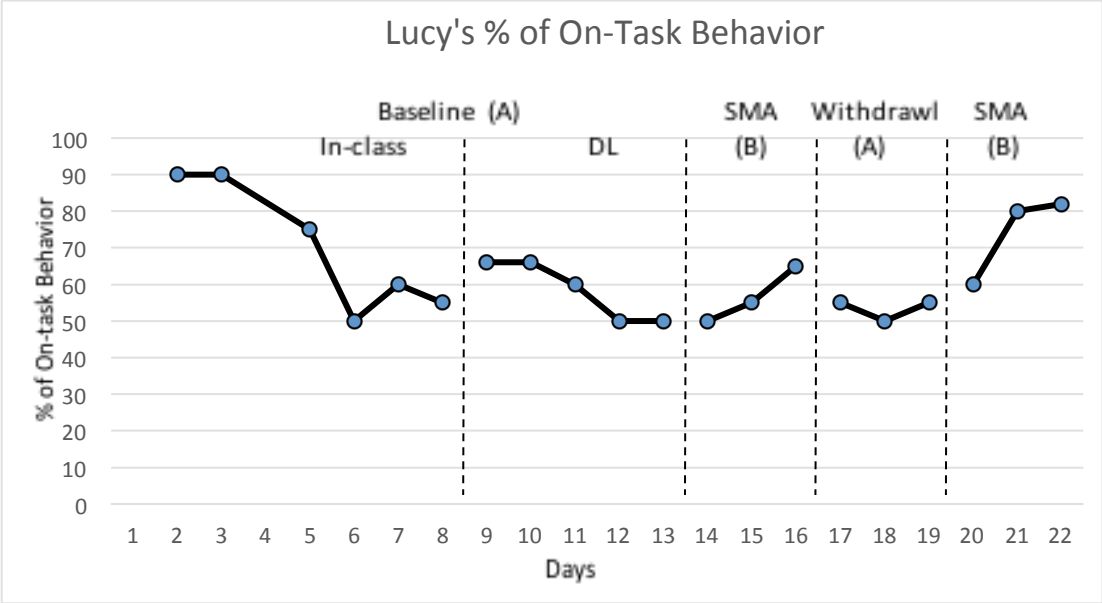
Appendix D

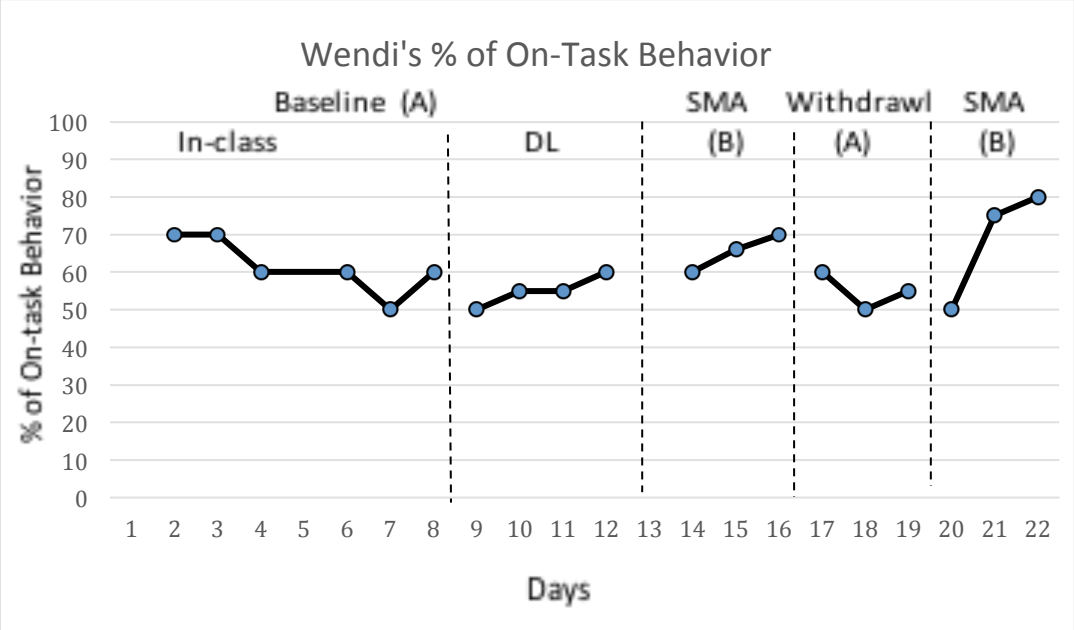
Social Validity Questionnaire

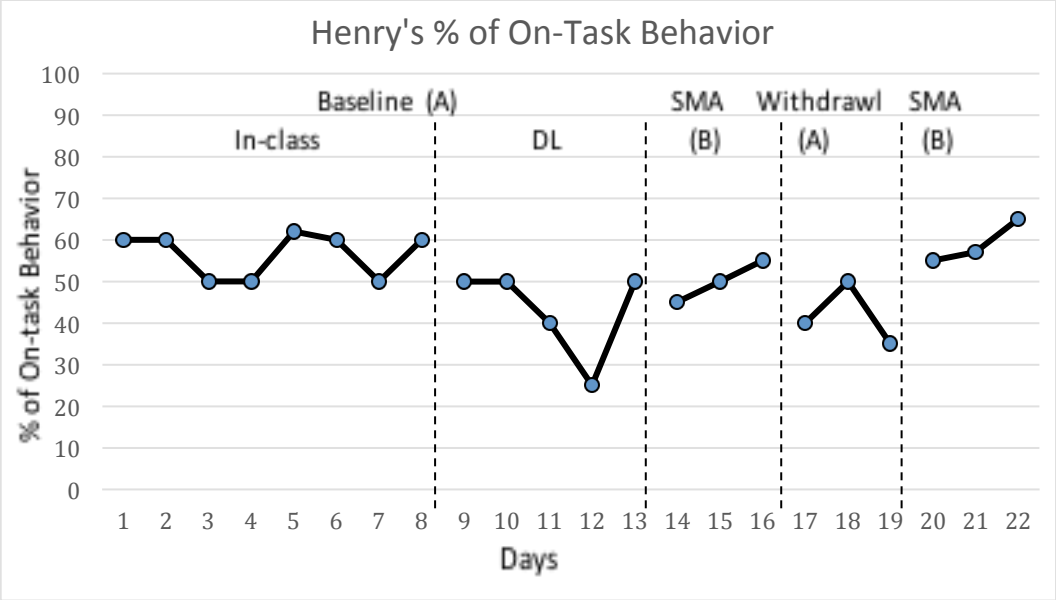
Questions:		1 Strongly disagree	2 Disagree	3 Agree	4 Strongly Agree
1	This treatment was effective				
2	I found this treatment acceptable for increasing the student's skills				
3	The intervention focused on important behaviors				
4	I think the student's skills would remain at an improved level even after the treatment ends				
5	The intervention was easily incorporated into the classroom				
6	This treatment quickly improved the student's skills				
7	I would be willing to carry out this treatment myself if I wanted to increase the student's skills				
8	I would suggest the use of this treatment to other individuals				
9	The time requirements of this intervention were reasonable				

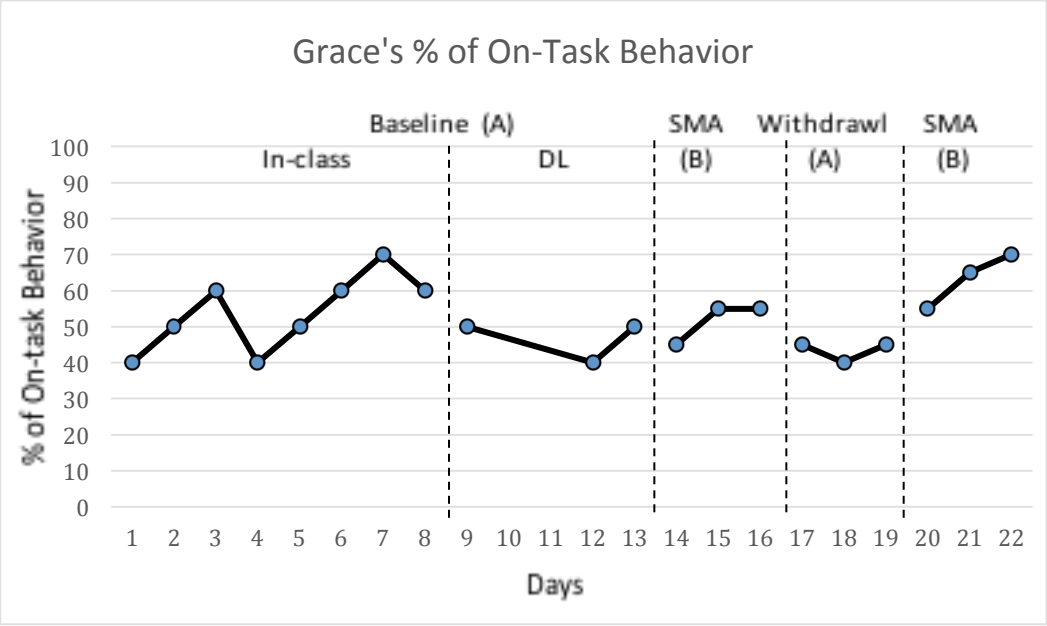
Appendix E

Graphs for Participant's On-task Behavior






Henry's % of On-Task Behavior
Baseline (A)
SMA (B)
Withdrawl (A)
SMA (B)
In-class
DL
% of On-task Behavior
Days


Grace's % of On-Task Behavior
Baseline (A)
SMA (B)
Withdrawl (A)
SMA (B)
In-class
DL
% of On-task Behavior
Days