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The effects of the station teaching model of co-teaching on students with learning disabilities

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THE EFFECTS OF THE STATION TEACHING MODEL OF CO-TEACHING ON STUDENTS WITH LEARNING DISABILITIES

by
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Dedication

I would like to dedicate this thesis to my colleagues and peers in the education field. In a field that is constantly evolving, we must educate ourselves and learn from each other in order to best serve the new population of students.

Acknowledgment

I would like to express my sincere appreciation and gratitude to Dr. Amy Accardo for her consistent encouragement and flexibility when I needed it most. Without her, I would not have been able to fulfill this accomplishment.

Abstract

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The purpose of this study was: (a) to examine the effects of using the station teaching model of co-teaching to improve academic performance of students with learning disabilities, (b) to examine the effects of using the station teaching model of co-teaching to improve attention and engagement of students with learning disabilities, and (c) to evaluate student satisfaction of the station teaching intervention. Eight elementary students, five second graders and three fourth graders participated in the study. All eight students, three males and five females, were eligible for special education services as classified with varying learning disabilities. A single subject ABAB design was used. During the baseline phases, students were instructed in writing using a traditional workshop model where instruction was provided whole-group and then students were provided independent writing time. During the intervention, instruction in writing was provided in small-groups using stations among two teachers in the classroom. Students' academic performance and attention/engagement was assessed throughout all baseline and intervention phases. Results indicate that students' academic performance and attention/engagement increased when the intervention was provided. The student satisfaction survey suggests that students overall enjoyed using the station teaching model. Further research is suggested to investigate the effects of station teaching for students with learning disabilities.

Table of Contents

Abstract v

List of Figures ix

List of Tables x

Chapter 1: Introduction 1

Statement of Problem 1

Significance of Study 4

Purpose of Study 4

Research Questions 4

Hypothesis 5

Key Terms 5

Chapter 2: Review of the Literature 6

Least Restrictive Environment 6

Inclusion/Co-Teaching 7

Models of Co-Teaching 8

Small Group Teaching 9

Perceptions & Attitudes 9

Benefits of Co-Teaching 10

Drawbacks/Limitations 12

Conclusion 13

Chapter 3: Methodology 14

Setting 14

School 14

Table of Contents (Continued)

Classroom 14

Participants 15

Participant 1 16

Participant 2 17

Participant 3 17

Participant 4 18

Participant 5 18

Participant 6 18

Participant 7 19

Participant 8 19

Research Design 19

Materials 20

Procedures 20

Measurement Process 21

Engagement/Attention 21

Academic Performance 21

Satisfaction Survey 22

Data Analysis 23

Chapter 4: Results 24

Academic Performance 24

Attention and Engagement 33

Survey Results 42

Table of Contents (Continued)

Chapter 5: Discussion 45

Findings 45

Limitations 47

Implications and Recommendations 47

Conclusion 49

References 50

List of Figures

Figure Page

Figure 1. Student Satisfaction Survey 23

Figure 2. Student A Academic Performance Score 27

Figure 3. Student B Academic Performance Score 28

Figure 4. Student C Academic Performance Score 29

Figure 5. Student D Academic Performance Score 30

Figure 6. Student E Academic Performance Score 31

Figure 7. Student F Academic Performance Score 32

Figure 8. Student G Academic Performance Score 33

Figure 9. Student H Academic Performance Score 34

Figure 10. Student A Attention and Engagement Score 36

Figure 11. Student B Attention and Engagement Score 37

Figure 12. Student C Attention and Engagement Score 38

Figure 13. Student D Attention and Engagement Score 39

Figure 14. Student E Attention and Engagement Score 40

Figure 15. Student F Attention and Engagement Score 41

Figure 16. Student G Attention and Engagement Score 42

Figure 17. Student H Attention and Engagement Score 43

List of Tables

Table Page

Table 1. General Information of Participating Students 15

Table 2. Academic Performance Rates 26

Table 3. Student Attention and Engagement 35

Table 4. Student Satisfaction Survey Percentage Results 44

Chapter 1

Introduction

Students with learning disabilities can benefit from a number of strategies, approaches, and methods of teaching within diverse classrooms. Instructional locations considered to be effective for students with learning disabilities include inclusive classrooms (Tremblay, 2013) and resource pull-out models (Volomino & Zigmond, 2007). Though both models are considered to be effective, Will (1986) suggests that the pull-out approach fails to meet the needs of exceptional learners and creates obstacles to success. Inclusion provided within the general education classroom typically includes two co-teachers – a regular education teacher and a special education teacher (Tremblay, 2013). The model of inclusion lengthens beyond the physical location of students with learning disabilities and embodies the entire educational experience (Kirby, 2016). In an analysis of qualitative research regarding co-teaching, Scruggs, Mastropieri & McDuffie (2007) noted that despite the plethora of literature regarding co-teaching and inclusion, there is little research which evaluates the efficacy of co-teaching.

Statement of Problem

While the present research is divided about students' academic growth and how it corresponds to co-teaching, multiple studies summarize students' academic achievement in co-taught classrooms (Daniel, 1997; Kloo & Zigmond, 2008; Linnenbrook-Garcia et al. 1999). In a study by Scruggs et al. (2007), it was reported that out of 25 elementary and middle schools, a majority of the students showed growth and academic success. Additional studies concluded academic growth for students with learning disabilities when some model of co-teaching was utilized (Scruggs et al., 2007; Kirby, 2016; Ledford

& Wolery, 2016). Further research and studies surrounding academic performance by use of station-teaching and other specific co-teaching models should be conducted.

In public education, class sizes range from small to large ratios of students to teachers. In co-taught classrooms, these ratios minimize, seemingly creating an environment which can promote engagement and attention of students. Murawski and Hughes (2009) identify co-teaching in an inclusive setting as having the benefit of maintaining a smaller student to teacher ratio, thus creating an environment with less disruptions. The decreased disruptions can lead to higher rates of attention. Furthermore, Scruggs et al. (2007) summarized student reports of their perceptions of co-teaching. Many students reported that having two teachers in the classroom supported their learning by minimizing distractions and wait time for support (Scruggs et al., 2007). Though not identified specifically, we may deduce that these minimized distractions can support student attention to tasks and learning.

In today's educational society, many can walk into a general education classroom and face students with learning disabilities. In December 2015, Congress amended the Individuals with Disabilities Education Act (IDEA) through Public Law 114-95. As published on the government's IDEA website, Congress states: "Disability is a natural part of the human experience and in no way diminishes the right of individuals to participate in or contribute to society. Improving educational results for children with disabilities is an essential element of our national policy of ensuring equality of opportunity, full participation, independent living, and economic self-sufficiency for individuals with disabilities." Daniel (1997) stated that the passing of IDEA, which

mandates integration of students with learning disabilities whom were historically segregated, is the topic of much debate.

With the passing of IDEA, comes the term, 'least restrictive environment' (LRE). To date, there is some differing views of the meaning of LRE. LRE is often referenced with the terms 'mainstreaming' and 'inclusion.' Daniel (1997) defines mainstreaming as the placement of students with special needs into regular education settings and defines inclusion as the placement in which all services are provided in the regular education setting. Daniel (1997) goes on to report that inclusion should not be seen as a mandate of the law, but as a philosophy of instructional practice.

With the terms mainstreaming and inclusion at the forefront of education, comes the delivery practice for instruction through co-teaching. Co-teaching is another term which is loosely defined among educators and researchers. For the purpose of this study, co-teaching can be defined as a specific instructional deliver method in which two educators jointly deliver instruction to an inclusive group of students at the same time (Murawski & Hughes, 2009). Scruggs, Mastropieri, and McDuffie (2007) designated five models of co-teaching as one teach, one assist, station teaching, parallel teaching, alternative teaching, and team teaching. Team teaching, also known as interactive teaching, involves both co-teachers sharing responsibilities equally and sharing full responsibility in the delivery of instruction (Scruggs et al., 2007). Station teaching is when students in a class are split into groups and each group receives their core instruction from a separate teacher (Indrisano et al., 1999). In their study, this instructional model was effective in showing growth in the areas of empowering students to learn and to provide guidance to students in their learning (Indrisano et al., 1999).

Significance of Study

While LRE, inclusion, mainstreaming and coteaching are the current buzz words in education, we must consider the effectiveness of these practices and methodologies. Scruggs et al. (2007) declared that though a large amount of research has been conducted in the area of co-teaching, there is little research which concludes the effectiveness of the different co-teaching models. The present study may be significant as it aims to fills a gap in the literature by investigating the effect of a station-teaching approach to co-teaching model on the academic achievement and attention/engagement of individuals with disabilities in an elementary school inclusion classroom.

Purpose of Study

The purpose of this study is to investigate the effect of the station-teaching model of co-teaching model on the academic performance and level of engagement/attention of students with learning disabilities in a regular education classroom.

Research Questions

Research questions investigated in this study follow:

1. Does the station-teaching model of co-teaching positively affect the academic performance for students with learning disabilities?
2. Does the station-teaching model of co-teaching positively affect the engagement/attention of students with learning disabilities?
3. Are students satisfied with the instructional strategies presented through station-teaching?

Other considerations: Does station-teaching in an inclusion class lend itself to more success for students with learning disabilities or their typically achieving peers?

Hypothesis

I hypothesize that the academic performance of students with learning disabilities will increase when the station-teaching approach to co-teaching is applied.

I hypothesize that the level of engagement and attention of students with learning disabilities will increase when the station-teaching approach to co-teaching is applied.

Key Terms

For the purpose of this study, “co-teaching” can be defined as a specific instructional deliver method in which two educators jointly deliver instruction to an inclusive group of students at the same time (Murawski & Hughes, 2009).

Chapter 2

Review of the Literature

Students with learning disabilities have been educated in a variety of classroom settings using multiple methods to ensure educational success. When reviewing inclusive classrooms, those that include a combination of typically achieving students and students with learning disabilities, the co-teaching models must be reviewed for efficacy. Many models of co-teaching have been identified, including: one teach, one assist, station teaching, parallel teaching, alternative teaching, and team teaching (Scruggs et al., 2007). Kloo and Zigmond (2008) designate co-teaching as the most likely channel for students with learning disabilities to have access to grade-level content and to demonstrate achievement similar to their typically achieving peers.

Least Restrictive Environment

The Individuals with Disabilities Education Act (IDEA) is a legislation that mandates children with learning disabilities have access to a "free appropriate education which emphasizes special education and related services designed to meet their unique needs" (IDEA, 2004). With the passing of IDEA, each state must establish practices to guarantee students with learning disabilities are educated "to the maximum extent appropriate" (IDEA, 2004). Daniel (1997) reviews legal cases regarding LRE and inclusion. As a result of the case of Sacramento City Unified School District vs. Rachel H., the US Court of Appeals for the Ninth Circuit developed a four-part component to identify appropriate educational settings. These four parts include: the opportunities for educational success, opportunities for social-emotional development and non-academic skills, the impact of disabled students on the education of others, and identifying the

effects of the cost of inclusion and services (Daniel, 1997). The term 'least restrictive environment' was developed from advocacy movements after the passing of IDEA, though it does not appear in the IDEA statute or its regulations (Daniel, 1997). The term LRE is most used in conjunction with mainstreaming and inclusion, as it requires that students with learning disabilities be placed in an educational environment where they can be most successful while receiving a free appropriate public education (Daniel, 1997).

Inclusion/Co-Teaching

Special education teachers' roles have shifted over time from removing students from the general education setting for instruction to now providing supports within a regular education classroom (Tremblay, 2013). Kirby (2016) identifies inclusion as a placement in which students with learning disabilities are fully immersed in a regular education classroom. Though inclusion has been closely identified with the mandates of IDEA, it should be seen as a philosophy of educational instruction and not as an element of the law (Daniel, 1997).

Co-teaching is when two teachers (one special education, and one regular education) share classroom responsibilities for students with and without disabilities in a general education setting (Cook & Friend, 2017). Cook and Friend (2017) identify four components of co-teaching which include two educators present, shared delivery of substantive instruction, a diverse group of student learners, and a shared physical space. Similarly, Murawski and Hughes (2009) report that co-teaching involves two teachers who plan, instruct, and assess a diverse group of learners within a shared space.

Cook and Friend (2017) justify the rationale for co-teaching as a positive service delivery model by discussing the potential increased instructional options for students with varying needs, improving rigor and continuity of programs, reducing stigma of students with special needs, and increased support from educators and specialists.

Models of Co-Teaching

Though there are a number of co-teaching variations that have been identified, Scruggs et al. (2007) identify five major variations of co-teaching which include: one teach, one assist; station teaching; parallel teaching; alternative teaching; and team teaching. Daniel (1997), coins co-teaching the interactive model, which includes two teachers who participate, plan, share, and implement instruction evenly.

Station teaching, the focus of the present study, is a subtype of co-teaching in which teachers distribute the instructional material into two or more sections and instruct simultaneously to small groups of students (Cook & Friend, 2017). Within these small groups, the students will learn part of the material before moving to another group which may or may not be teacher-led (Cook & Friend, 2017). Students with disabilities often benefit from this model as it provides a lower student to teacher ratio and builds integration of students with learning disabilities with their typically achieving peers (Cook & Friend, 2017). Stuller (1975) identifies station teaching as a method to individualize instruction for diverse learners as it enables students to review material, work independently or with others, progress at his or her own developmental rate, and to gain feedback from teachers. Additionally, Stuller (1975) explains that the use of station teaching allows teachers to consult with struggling students in a more effective way.

Small Group Teaching

In a study of observational learning of academic behaviors, Ledford and Wolery (2015) found that students with and without learning disabilities learned all of their target academic behaviors when instructed in small groups containing heterogeneous groupings. Walsh and Jones (2004), noted that the implementation of small groups or small learning communities has significantly increased in inclusive classrooms as a means for instruction**.**

Similarly, observational and incidental learning by children with autism was studied to determine the difference in efficacy between individual (1:1) instruction versus small group instruction (Ledford et al., 2007). This study concluded that instruction provided to children with autism was at least as effective as individual instruction (Ledford et al, 2007).

Another purpose for utilizing small group instruction is to engage and promote social learning opportunities (Linnenbrink-Garcia et al., 2011). Linnenbrook-Garcia et al. (1999) also concluded that engagement in small group learning opportunities corresponded to students' feelings of being happy or calm. Through station-teaching, students may be provided the opportunity to work in smaller groups, rather than the larger whole-group setting that many are used to as the primary learning environment (Indrisano et al., 1999).

Perceptions & Attitudes

In order for co-teaching to be a successful model of instruction, co-teachers must maintain active and consistent communication with regards to their beliefs of teaching and routines (Cook & Friend, 2017). Cook and Friend (2017) report an example scenario

where one teacher prefers that students are seated and listening during whole group instruction while the other allows students to move around the room and/or sharpen their pencils. While neither teacher is correct or incorrect, something so simplistic as this scenario could become an issue with disciplining and effective routines (Cook & Friend, 2017).

In a study conducted by Dugan & Letterman (2008), perceptions were collected from students enrolled in co-taught courses and found to be similar to those perceptions of students enrolled in classes which a single teacher. When rating preferences of the different models of co-teaching, the two-teacher models were more favorable than models which incorporated three or more instructors (Dugan & Letterman, 2008). When analyzing their study results of different collaborative teaching models, Dugan and Letterman (2008) identified that the most preferred method of delivery involved two teachers who shared full responsibility for the class.

Benefits of Co-teaching

Co-teaching can be branded as a method to deliver instruction which joins the strengths of two educators with different areas of expertise to best meet the needs of a diverse population of students (Cook & Friend, 2017). Although co-teaching is primarily driven by the inclusion of students with learning disabilities and IEPs, students with exceptional needs, such as those identified as gifted, can benefit from the increased opportunity to differentiate and individualize instruction (Cook & Friend, 2017). Cook and Friend compare the service-delivery methods of pull-out instruction to co-teaching. In their comparisons, they identified that the transition process of moving to a resource room for pull-out services causes students with learning disabilities to lose approximately

15 minutes of instruction per day, or 75 minutes each week (Cook & Friend, 2017). Johnson et al. (2000) studied the effects of collaborative teams and found positive improvements in academic achievement, social skills, and greater retention in co-taught classes. Students with learning disabilities are provided the opportunity to participate with students with diverse backgrounds, including ethnic, racial, and cultural backgrounds, and to build a positive, inclusive community in their classrooms – regardless of cultural background or level of ability (Dugan & Letterman, 2008).

In a review of assumptions about inclusion, Kirby (2016) reports that excluding students from a regular education classroom for special education services presents barriers for becoming a societal member later in life. Kirby (2016) explains that by excluding students at a young age in education, our current society is reinforcing stereotypes and inequality of those with disabilities.

When reviewing high school graduation rates of students with disabilities, Kirby (2016) reported that rates should be similar if current services for special education are effective. In reviewing the rates, Kirby (2016) found that high school graduation rate of students with learning disabilities was at 63%, while the national graduation rate was 81%. Kirby (2016) assumes that lower graduation rates may be a result of many different factors including ineffective services provided, complexities of navigating school as a special education student, and the efficacy of students' IEPs.

Students at the elementary level with learning disabilities who were taught in co-taught classrooms had higher reading and writing scores than students with learning disabilities who were instructed in a self-contained classroom (Tremblay, 2013). As reported by Kirby (2016), students who were transitioned from a resource room setting to

an inclusive co-taught classroom increased their scores in reading and math. Murawski and Hughes (2009) indicate that some of the benefits of co-teaching include active engagement, the ability to differentiate more easily, and the ability to implement multiple strategies. Furthermore, they illustrate that improvements in behavior, academics, social skills, and self-esteem have been reported as benefits to all students (Murawski & Hughes, 2009).

An added benefit, as reported by Murawski and Hughes (2009) is the ability to group students and maintain a smaller student to teacher ratio. Providing opportunities for small group instruction allows students to engage in more individualized, intense instruction in a natural way (Murawski & Hughes, 2009).

Drawbacks/Limitations

Classes which include students with varying abilities and needs may pose a difficult environment to instruct (Cook & Friend, 2017). Additionally, Cook & Friend (2017) highlighted class size, scheduling, and competing professional duties as being the debate between ideal co-teaching and what may be realistic. Currently, students with learning disabilities spend a majority of their day in regular education classrooms (Kirby, 2016). Though this supports the progressive move toward inclusion, there are still students who spend time in alternate special education classrooms which implies that alternate locations or self-contained settings are the most effective means to teach students with disabilities (Kirby, 2016).

Murawski and Hughes (2009) state that a drawback to the collaborative approach to teaching is that it is difficult to measure success. For this reason, little research has been collected identifying the positive effects of co-teaching (Scruggs et al., 2007).

Additionally, Tremblay (2013) noted that few studies addressing co-teaching in the elementary education classroom have been reviewed and much of the co-teaching research focuses on secondary education.

Conclusion

Due to the increase of students with disabilities being included in the general education classroom, there is much debate about the efficacy of inclusive classrooms and co-teaching (Daniel, 1997). While there is much research about co-teaching as a method of instruction (Scruggs et al., 2007; Daniel, 1997; Murawski & Hughes, 2009; Cook & Friend, 2017; Indrisano et al., 1999; Kirby, 2016) very little focuses on the efficacy of the models and which models seem to be most successful for students with learning disabilities. This study aims to examine the effect of station teaching as a method of small group instruction in an inclusive classroom. Effects studied are focused around academic performance, attention and engagement, and student perceptions.

Chapter 3

Methodology

Setting

School. This study was conducted in a public elementary school in a southern New Jersey school district. The school district is comprised of six elementary schools with students separated by where they live in town, as well as two middle schools. Each elementary school has students with learning disabilities who receive instruction in the following settings: in class support, resource support, extended resource support, or self-contained.

The elementary school in which the study was conducted consists of approximately 400 students in grades PreK through 4. Approximately 24% of these students have an IEP and receive special education services. The school's demographics are diverse. According to the schools PowerSchool report generated on Dec. 14, 2018, 37.6% of the students are Caucasian, 6% are Hispanic, 14.3% are Asian, 23.7% are African American, 17.6% are Multiracial, and less than 1% are Alaskan Native, American Indian, Hawaiian Native, or Other Pacific Islander.

Classroom. This study was conducted in two classrooms – one second grade and one fourth grade classroom. Classroom A consists of 21 student desks and two small group tables, which the teachers utilize for instruction. Classroom A has one general education teacher and one special education teacher who comes to the classroom to provide support for 30 minutes per subject. There are two teacher laptops that connect to an interactive Smartboard. Each student in the classroom has access to a personal Google Chromebook.

Classroom B is similarly set up. There are two small group tables which the teachers utilize. Instead of desks, there are five tables, containing four student work stations at each table. Classroom B has one general education teacher and one special education teacher who comes to the classroom to provide support for 30 minutes per subject. There are two teacher laptops that connect to an interactive Smartboard. Each student in the classroom has access to a personal Google Chromebook.

Participants

This study included three fourth grade students, two females and one male, and five second grade students, three females and two males. Eight of the students in the study were classified with a learning disability. Of the eight students, three are classified as communication impaired, three are classified as having a specific learning disability, one is classified under the category of autism, and one student is classified under the category of other health impaired.

Table 1

General Information of Participating Students

Student	Age	Grade	Classification
A	8	2	CI
B	8	2	CI
C	7	2	SLD
D	7	2	SLD
E	8	2	SLD
F	9	4	OHI
G	10	4	CI
H	10	4	Autism

Participant 1. Student A is an eight-year-old African American male in second grade. He is classified as communication impaired and eligible for special education services. Academically, this student performs at a lower threshold than his peers and grade level expectations. He requires constant redirection, prompting, and rephrasing from teachers and classroom aides. Student A is able to verbalize responses to reading comprehension with more success than on formative assessments. He appears to exude confidence in the classroom, though he does not recognize his weaknesses and struggles. Socially, he is confident in his interactions with peers and adults in the school. He often requires redirection to remain on task and to pay attention to the task at hand. Student A's work ethic is inconsistent. At times he appears to avoid tasks, as well as has little to

no attention to activities in the classroom. Student A reported that he enjoys school and likes spending time with his friends and classmates.

Participant 2. Student B is an eight-year-old Caucasian female in second grade. She is eligible for special education services under the classification of communication impairment. This student is extremely polite and respectful to her classmates and teachers. She reports that she loves coming to school and spending time with her teachers. She benefits from support in executive functioning, specifically in the area of working memory. Academically, she requires constant support from a teacher or aide in order to be successful in the classroom. This student has parents in the military and has attended four schools in the past two years. The students' teachers and parents are curious if the inconsistency in her schooling has had an effect on her academic weaknesses.

Participant 3. Student C is a seven-year-old African American female in second grade. She was recently classified during the present school year and is eligible for special education services under the classification of specific learning disability. Her sub-classifications include written expression, reading fluency, reading comprehension, and mathematical problem solving. Student C often appears to understand directions and able to work independently, however, she is frequently distracted or claims that she did not understand what she needs to be doing. She benefits from teachers allowing her to restate the directions before beginning an assignment. She is most successful when working in a small group with teacher or aide guidance. She is a kind and happy student who enjoys working with teachers and peers in school.

Participant 4. Student D is a seven-year-old Caucasian male in second grade. He is eligible for special education services under the classification of specific learning disability. His sub-classifications include reading fluency, reading comprehension, and written expression. This student struggles to pay attention and is easily distracted by other students in the classroom. He is frequently given verbal prompts to get back to task when working independently. He shows strength in Math, and reports that it is his favorite subject because there are no letters for him to read. This student is frequently absent from school for multiple days at a time.

Participant 5. Student E is an eight-year-old African American female in second grade. She is eligible for special education services under the classification of specific learning disability. Her sub-classifications include written expression, reading comprehension, and reading fluency. She is a confident student learner in the classroom and is able to work independently with minimal support necessary for her success. This student is easily distracted by her peers and is frequently talking to others and walking around the classroom. With prompting, she is able to get back to task quickly. She reported that she enjoys second grade more than first grade because her friends are in her class.

Participant 6. Student F is a nine-year-old Caucasian male in fourth grade. He is eligible for special education services under the classification of other health impairment. He was diagnosed with Lyme Disease in 2015 which has negatively impacted his academic performance. He shows strength in Math and was tested into the accelerated Math class and the GAP program. Student F's weaknesses are in the areas of reading and writing, specifically with reading fluency and written expression. Student F

benefits from receiving an alternate reading program which focuses on decoding and encoding skills. Student F enjoys playing all sports with his friends outside of school.

Participant 7. Student G is a ten-year-old Hispanic female in fourth grade. She is eligible for special education services under the classification of communication impaired. She is a quiet and shy student, but seemingly enjoys being in school. She was new to the school this year and has made many friendships within the classroom. Her weaknesses are in the area of written expression, reading fluency, and reading comprehension. She benefits from tasks being broken into smaller chunks and frequent teacher check-ins. She does not often raise her hand to participate in class discussions for fear of being wrong. She reported that she likes working in small groups with teacher guidance because she feels more successful.

Participant 8. Student H is a ten-year-old Asian female in fourth grade. She is eligible for special education services under the classification of autism. This student requires a structured, easy-to-follow routine in order to be successful in the classroom. Socially, she does not have many friends but gets along well with everyone in the classroom. She tends to gravitate to the same two or three students. Academically, she enjoys Math which is a strength of hers. She does well when concepts are explicit and rote. She struggles with open-ended responses, deeper level thinking, and abstract concepts.

Research Design

A single subject design with ABAB phases was used throughout the course of this study. This study explored the effects of the independent variable, station teaching, on the dependent variables of academic achievement and engagement/attention. During

Phase A, baseline data was collected daily over the course of two weeks. During this phase, instruction was delivered in a traditional writing workshop model. Students engaged in a whole-group mini-lesson and then worked independently during the workshop time. Data was collected in the form of a rating scale. Students were rated by the teacher on their ability to apply the skill from the mini-lesson into their writing.

During Phase B, the intervention of station teaching was introduced. Instruction was delivered through teacher stations. Data was again collected daily over the course of the two weeks. At the end of each work session, students completed an exit slip. The exit slip asked students to identify one thing they learned and one question they still had. Rating scale data was also collected by the teacher.

During the second Phase A, students returned to the traditional writing workshop model. This phase lasted for two weeks and data was collected daily. During the second Phase B, students returned to instruction using station teaching. Data was collected daily.

Materials

During the entire study, two sets of materials were utilized. During Phase A, materials used included writer's workshop notebooks, Smartboard, turn & talk sticks, exit slips, Chromebooks, and Google Classroom. During the intervention phases, materials used included writer's workshop notebooks, dry-erase boards, exit slips, Chromebooks, and Google Classroom.

Procedures

This study took place over eight weeks. During weeks 1 and 2, baseline data was collected on the students' ability to incorporate writing skills taught into their work during independent writing time. The teacher used a rating scale and kept note every

time a student was engaged and participated. Weeks 3 and 4 were the intervention weeks. The method of instruction shifted to station teaching. Students participated in small groups led by teachers as the primary source of instruction. The teacher continued to utilize the rating scale to track students' ability to incorporate writing skills into their work. Additionally, students completed an exit slip where they were asked to record something they learned and a question they still had. Weeks 5 and 6 of the study returned to the baseline conditions where instruction was delivered using the traditional writing workshop method. Weeks 7 and 8 returned to the intervention and utilized station teaching for the delivery of instruction. At the end of week 8, students were asked to complete a voluntary, anonymous student survey regarding their satisfaction with the station teaching model.

Measurement Process

Engagement/Attention. Throughout the study, student engagement and attention was monitored and tracked by the teacher. If students were not engaged at all, off-task, or avoiding the tasks, they were given a 0. If a student appeared to be engaged for 10-30 percent of the session, they were given a 1. Students who appeared to be engaged for 40-70 percent of the session were given a 2. Students who appeared to be engaged for 80 percent or more of the session were given a 3. Scores were determined at the discretion of the teacher leading the lesson.

Academic Performance. Students' academic performance was monitored using a rating scale. Students who received a 0 were identified as not using the writing skill or strategy from the mini-lesson. A score of 1 was earned if students were attempting to integrate the writing skill or strategy. Students who were integrating the skill or strategy

with support earned a 2. Students who were effectively integrating the skill or strategy taught independently were given a 3.

Satisfaction Survey. At the conclusion of the study, the participants were asked to fill out a survey regarding their satisfaction with the intervention using a Likert scale. The researcher distributed the survey to each student and provided ample time to read and evaluate their response honestly with regards to their participation in station teaching groups. Participants scored each statement using a scale of 1-5. A score of 1 represented strongly disagree, 2 representing disagree, 3 representing undecided, 4 representing agree, and 5 representing strongly disagree. Participants were directed not to put their names on the surveys so that their answers remained anonymous. Figure 1 shows the survey participants were asked to complete.

Station Teaching - Small Group Survey

Directions: Read each sentence below and place an **X** in the column you feel most accurately indicates your feelings.

Statements	Strongly Agree 5	Agree 4	Undecided 3	Disagree 2	Strongly Disagree 1
1. I felt supported as a learner in Writing when using small groups.					
2. I enjoyed participating in small groups.					
3. I would prefer to work independently in Writing.					
4. I would prefer to work with a partner in Writing.					
5. From participating in small groups, I felt as though I learned more about the topics we were discussing about in class.					
6. I felt being pulled to small group was negative.					
7. I enjoyed working in a small group with my teacher.					
8. I felt as though I did not need to be pulled to small group.					
9. I hope we use small groups more in the future and other classes.					
10. I think I will do better on as a writer, due to my experience in working in small groups.					

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Figure 1. Student satisfaction survey

Data Analysis

Survey results were compiled and reported in a table. The scores collected from students engagement and academic performance were converted into percentages. The data were displayed in visual line graphs and analyzed for patterns, with results from Phase A and Phase B compared.

Chapter 4

Results

The single-subject design study utilized ABAB phases to examine the effect of a station-teaching model of co-teaching on academic performance and attention/engagement of students with learning disabilities. Eight students, five second-graders and three fourth-graders, receiving writing instruction in a co-taught class, participated in the study. The research questions investigated are as follows:

1. Does the station-teaching model of co-teaching positively effect the academic performance for students with learning disabilities?
2. Does the station-teaching model of co-teaching positively effect the engagement/attention of students with learning disabilities?
3. Are students satisfied with the instructional strategies presented through station-teaching?

Data was collected throughout all phases. The researcher completed a rating scale daily for the level with which students were able to integrate the writing skill or strategy taught. A rating scale was also utilized to collect data regarding the engagement and attention of students. At the end of the study, students completed a Likert scale survey regarding their satisfaction with using the station-teaching model for instruction in writing.

Academic Performance

Students' academic performance rates were obtained through a teacher developed rating scale. The scale range was from zero to three and assessed students' ability to integrate and apply the skill or strategy taught during writing.

Table 2

Academic Performance Rates

	Baseline 1		Intervention 1		Baseline 2		Intervention 2	
Student	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
A	0	0	2.3	0.6749486	0.8	0.421637	2.6	0.5163978
B	0.1	0.3162278	2.3	0.6749486	1	0.4714045	2.5	0.7071068
C	0.2	0.421637	2.3	0.8232726	0.8	0.421637	2.8	0.421637
D	0	0	2.3	0.6749486	1	0.6666667	2.8	0.421637
E	0.4	0.5163978	2.4	0.843274	0.8	0.421637	2.6	0.6992059
F	1	0	2.3	0.6749486	1.1	0.3162278	2.7	0.4830459
G	0.4	0.5163978	2.6	0.6992059	1.4	0.5163978	2.9	0.3162278
H	0.2	0.421637	2.3	0.8232726	1.1	0.3162278	2.8	0.421637

Student A is an eight-year-old African American male in second grade. He is classified as Communication Impaired and eligible for special education services. During the first baseline phase Student A's mean score on his academic performance was 0. Student A's mean score increased to 2.3 during the first intervention phase. During the second baseline phase, Student A's mean score decreased to 0.8 and then increased with the second intervention phase to 2.6. Student A's daily data is shown in Figure 2. When the station-teaching model was utilized for writing instruction, Student A's scores increased in both intervention phases.

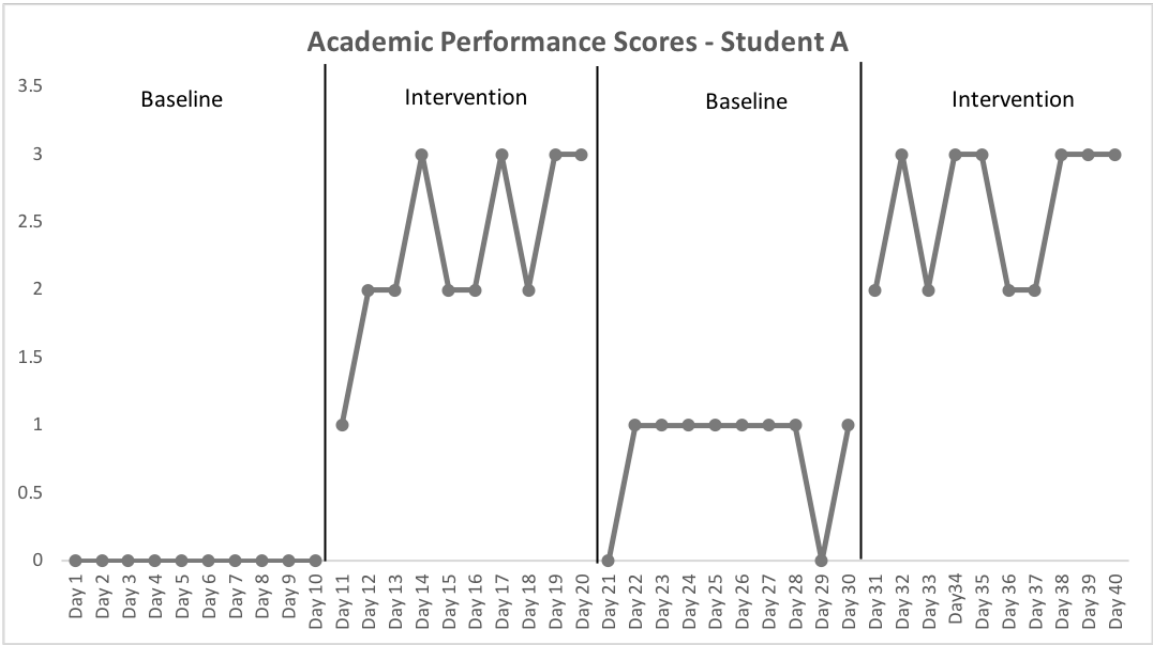

Figure 2. Student A academic Performance Score.

Student B is an eight-year-old Caucasian female in second grade. She is eligible for special education services under the classification of Communication Impairment. During the first baseline phase Student B's mean score on her academic performance was a score of 0.1. Student B's mean score increased to 2.3 during the first intervention phase. During the second baseline phase, Student B's mean score decreased to 1 and then increased with the second intervention phase to 2.5. Student B's daily data is shown in Figure 3. When the station-teaching model was utilized for writing instruction, Student B's scores increased in both intervention phases.

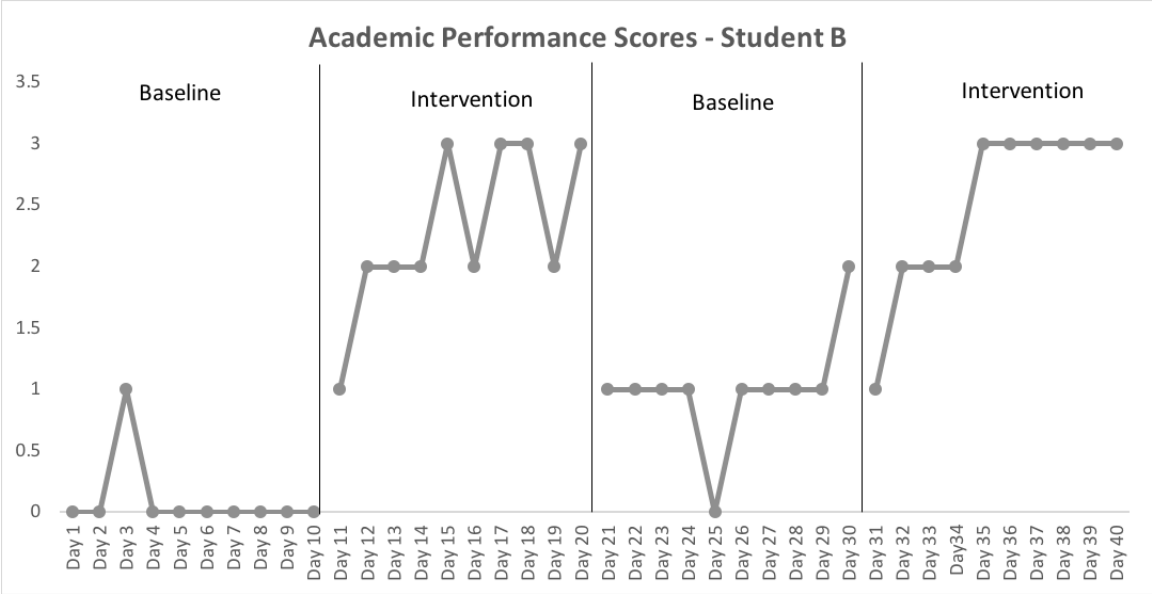

Figure 3. Student B Academic Performance Score.

Student C is a seven-year-old African American female in second grade. She was recently classified during the present school year and is eligible for special education services under the classification of Specific Learning Disability. Her sub-classifications include written expression, reading fluency, reading comprehension, and mathematical problem solving. During the first baseline phase Student C's mean score on her academic performance was a score of 0.2. Student C's mean score increased to 2.3 during the first intervention phase. During the second baseline phase, Student C's mean score decreased to 0.8 and then increased with the second intervention phase to 2.8. Student C's daily data is shown in Figure 4. When the station-teaching model was utilized for writing instruction, Student C's scores increased in both intervention phases.

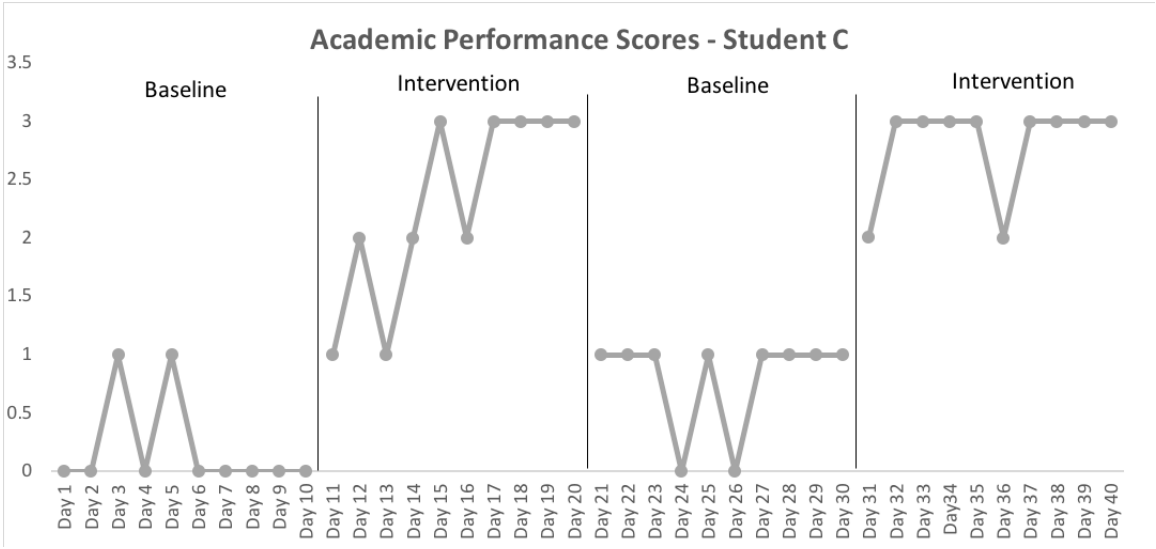

Figure 4. Student C's Academic Performance Score.

Student D is a seven-year-old Caucasian male in second grade. He is eligible for special education services under the classification of Specific Learning Disability. His sub-classifications include reading fluency, reading comprehension, and written expression. During the first baseline phase Student D's mean score on his academic performance was a score of 0. Student D's mean score increased to 2.3 during the first intervention phase. During the second baseline phase, Student D's mean score decreased to 1 and then increased with the second intervention phase to 2.8. Student D's daily data is shown in Figure 5. When the station-teaching model was utilized for writing instruction, Student D's scores increased in both intervention phases.

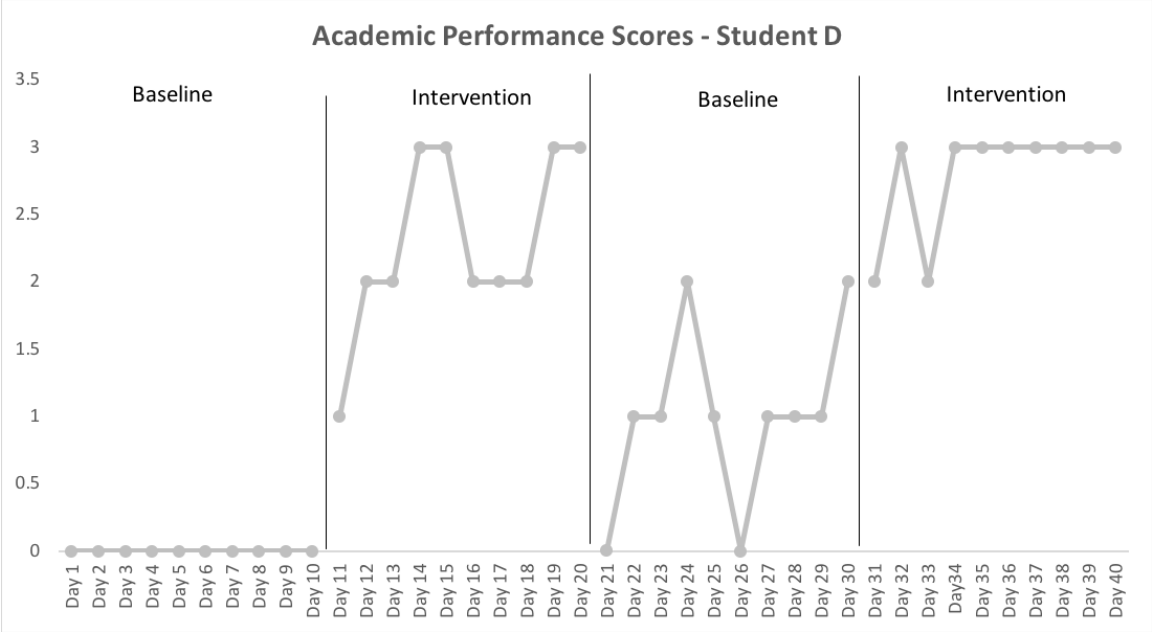

Figure 5. Student D Academic Performance Score.

Student E is an eight-year-old African American female in second grade. She is eligible for special education services under the classification of Specific Learning Disability. Her sub-classifications include written expression, reading comprehension, and reading fluency. During the first baseline phase Student E's mean score on her academic performance was a score of 0.4. Student E's mean score increased to 2.4 during the first intervention phase. During the second baseline phase, Student E's mean score decreased to 0.8 and then increased with the second intervention phase to 2.6. Student E's daily data is shown in Figure 6. When the station-teaching model was utilized for writing instruction, Student E's scores increased in both intervention phases.

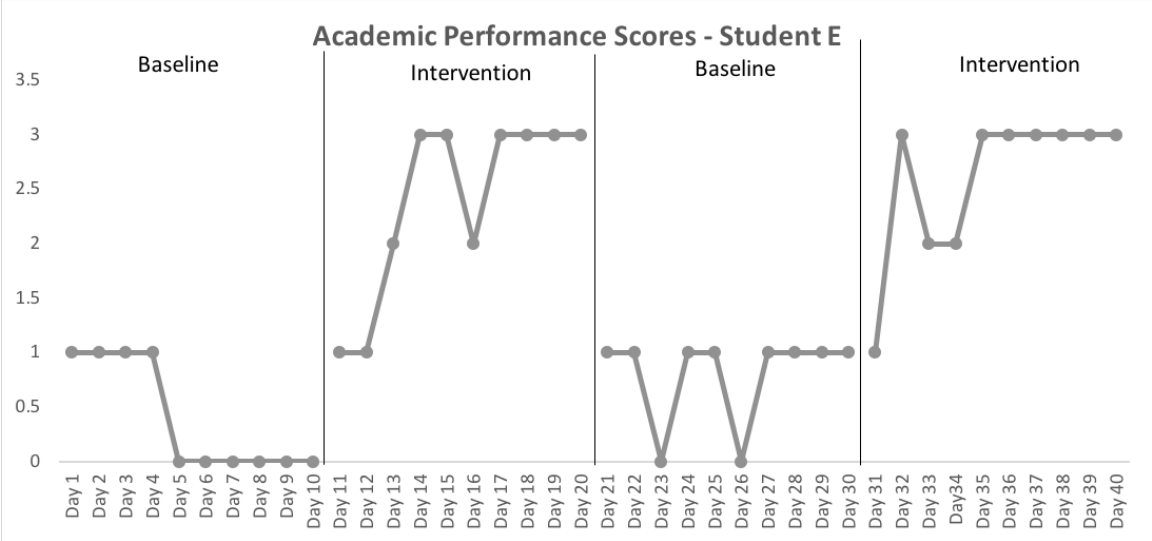

Figure 6. Student E Academic Performance Score.

Student F is a nine-year-old Caucasian male in fourth grade. He is eligible for special education services under the classification of Other Health Impairment. He was diagnosed with Lyme Disease in 2015 which has negatively impacted his academic performance. During the first baseline phase Student F's mean score on his academic performance was a score of 1. Student F's mean score increased to 2.3 during the first intervention phase. During the second baseline phase, Student F's mean score decreased to a score of 1.1 and then increased with the second intervention phase to 2.7. Student F's daily data is shown in Figure 7. When the station-teaching model was utilized for writing instruction, Student F's scores increased in both intervention phases.

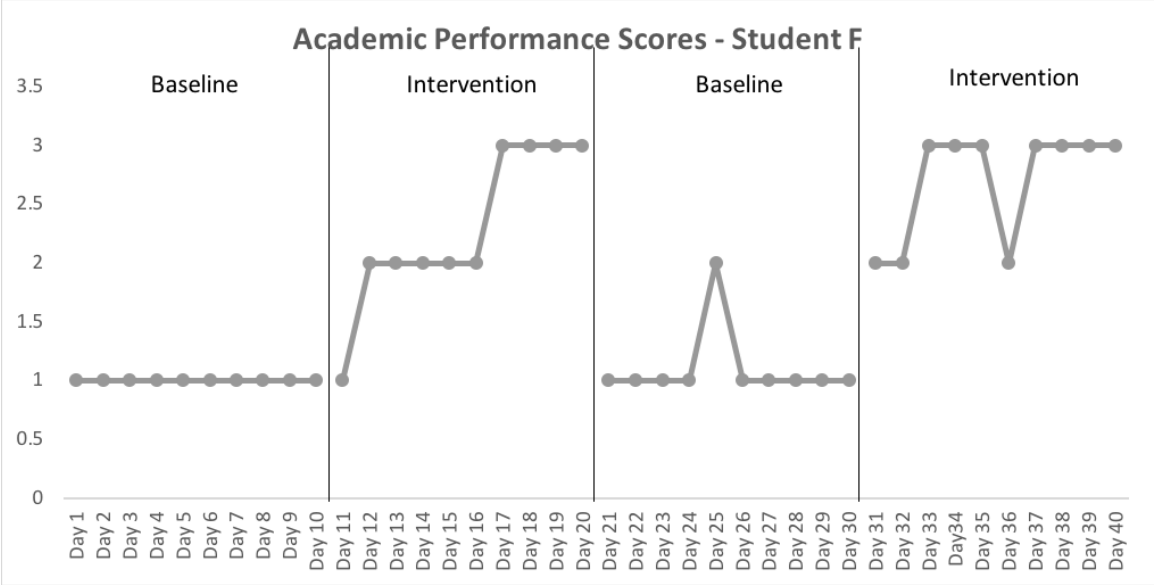

Figure 7. Student F Academic Performance Score.

Student G is a ten-year-old Hispanic female in fourth grade. She is eligible for special education services under the classification of Communication Impaired. During the first baseline phase Student G's mean score on her academic performance was 0.4. Student G's mean score increased to 2.6 during the first intervention phase. During the second baseline phase, Student G's mean score decreased to a score of 1.4 and then increased with the second intervention phase to 2.2. Student G's daily data is shown in Figure 8. When the station-teaching model was utilized for writing instruction, Student G's scores increased in both intervention phases.

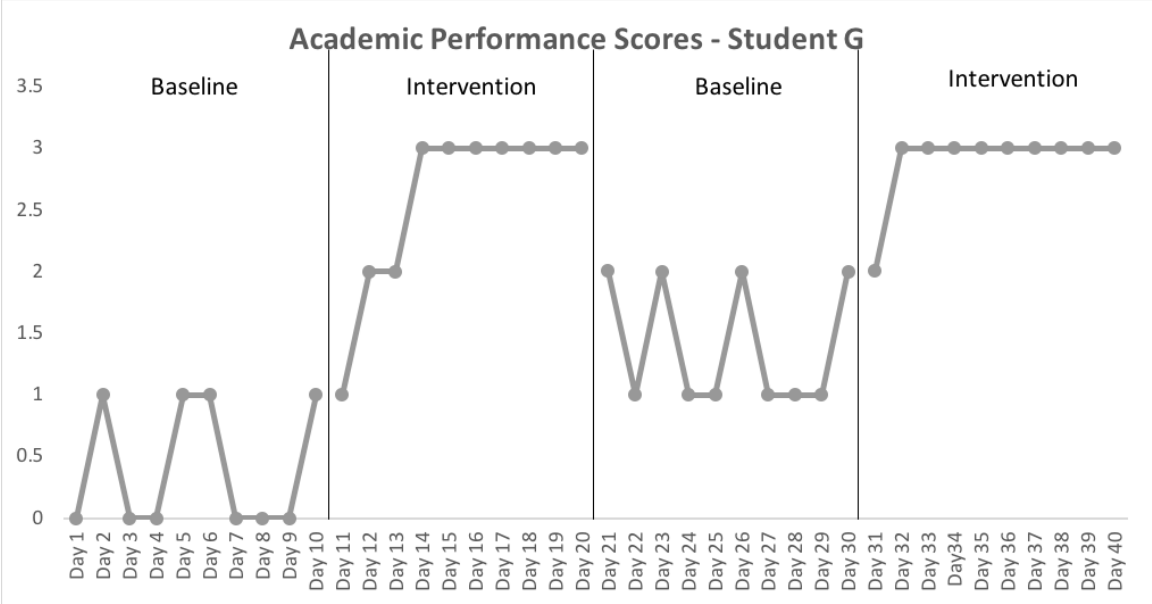

Figure 8. Student G Academic Performance Score.

Student H is a ten-year-old Asian female in fourth grade. She is eligible for special education services under the classification of Autism. During the first baseline phase Student H's mean score on her academic performance was a score of 0.2. Student H's mean score increased to 2.3 during the first intervention phase. During the second baseline phase, Student H's mean score decreased to 1.1 and then increased with the second intervention phase to 2.8. Student G's daily data is shown in Figure 9. The data shows that Student H's scores went down during baseline phases. When the station-teaching model was utilized for writing instruction, Student H's scores increased in both intervention phases.

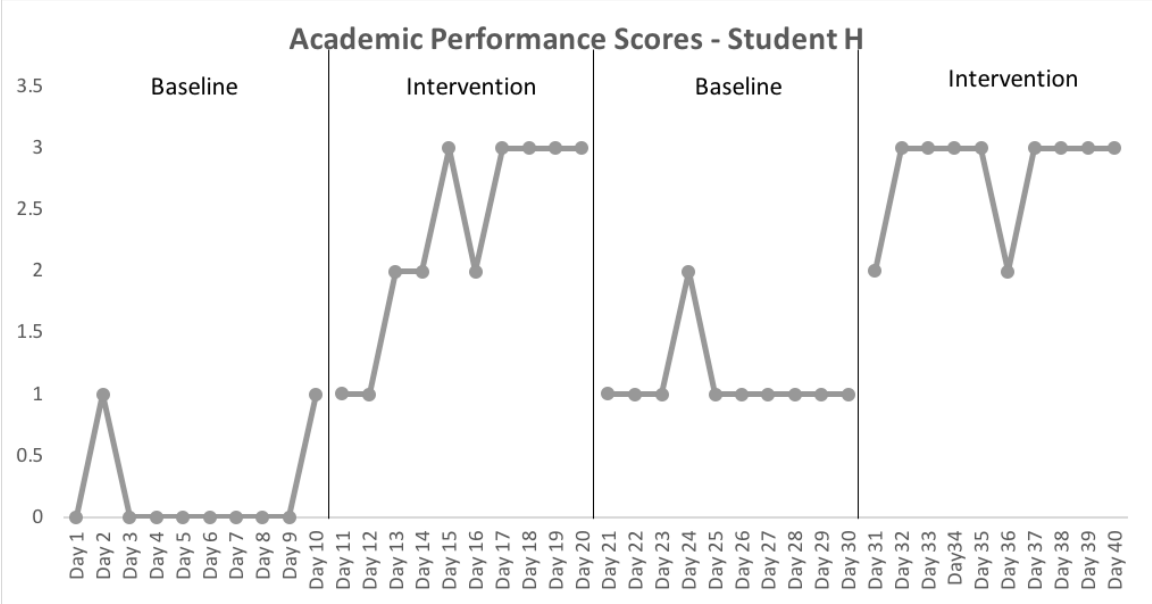

Figure 9. Student H Academic Performance Score.

Attention and Engagement

Attention and engagement scores were obtained through a teacher developed rating scale. The scale range was from zero to three and assessed students' attention and engagement during Writing lessons. Means and standard deviations of students' attention and engagement scores are shown in Table 3.

Table 3

Student Attention and Engagement

	Baseline 1		Intervention 1		Baseline 2		Intervention 2	
Student	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
A	0.7	0.483046	2.5	0.527046	0.8	0.632456	2.7	0.483046
B	0.6	0.516398	2.7	0.483046	0.9	0.567646	2.5	0.707107
C	0.5	0.527046	2.6	0.516398	0.9	0.316228	2.6	0.663325
D	0.6	0.516398	2.5	0.527046	0.9	0.567646	2.8	0.421637
E	0.7	0.483046	2.6	0.516398	0.9	0.316228	2.8	0.421637
F	0.9	0.316228	2.6	0.516398	1.1	0.567646	2.7	0.674949
G	1.6	0.516398	2.5	0.527046	1.4	0.516398	2.8	0.421637
H	1.6	0.516398	2.7	0.483046	0.8	0.421637	2.6	0.699206

During the first baseline phase, Student A's mean score for attention and engagement was a score of 0.7. Student A's mean score increased during the first intervention phase to 2.5. During the second baseline phase, Student A's mean score decreased to 0.8 and then increased again to 2.7 during the second intervention phase. Student A's data is shown in Figure 10. As shown in the figure, Student A's attention and engagement had a tendency to decrease during baseline phases and increase during the intervention phases when station-teaching was utilized.

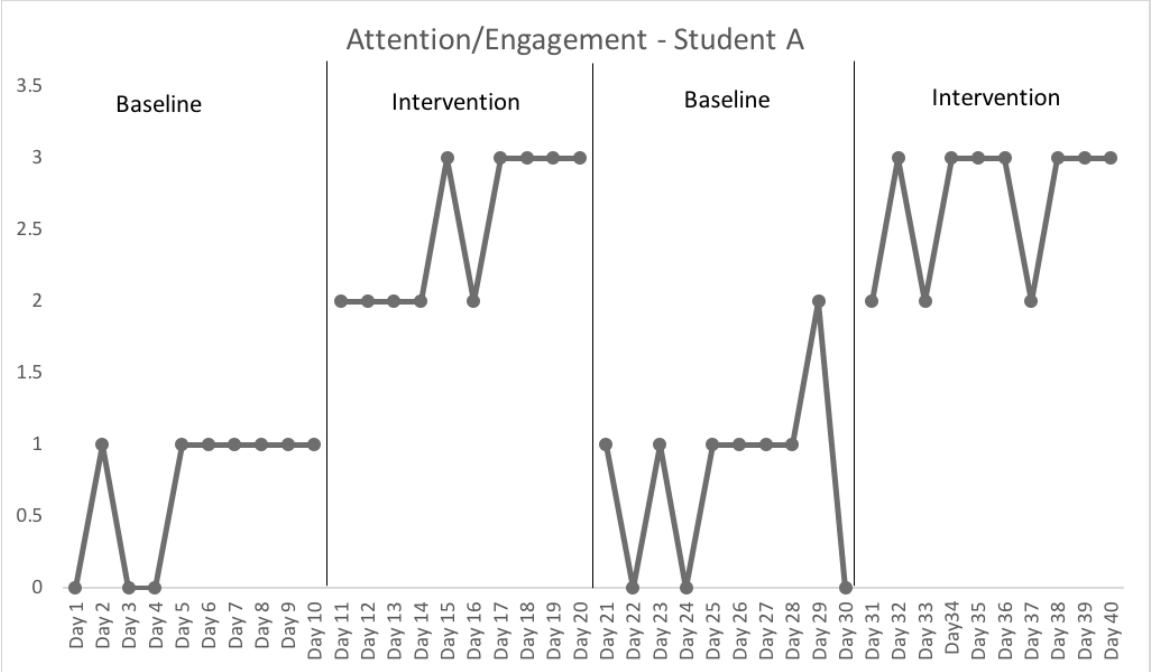

Figure 10. Student A Attention and Engagement Score.

During the first baseline phase, Student B's mean score for attention and engagement was a score of 0.6. Student B's mean score increased during the first intervention phase to 2.7. During the second baseline phase, Student B's mean score decreased to 0.89and then increased again to 2.5 during the second intervention phase. Student B's data is shown in Figure 11. As shown in the figure, Student B's attention and engagement had a tendency to decrease during baseline phases and increase during the intervention phases when station-teaching was utilized.

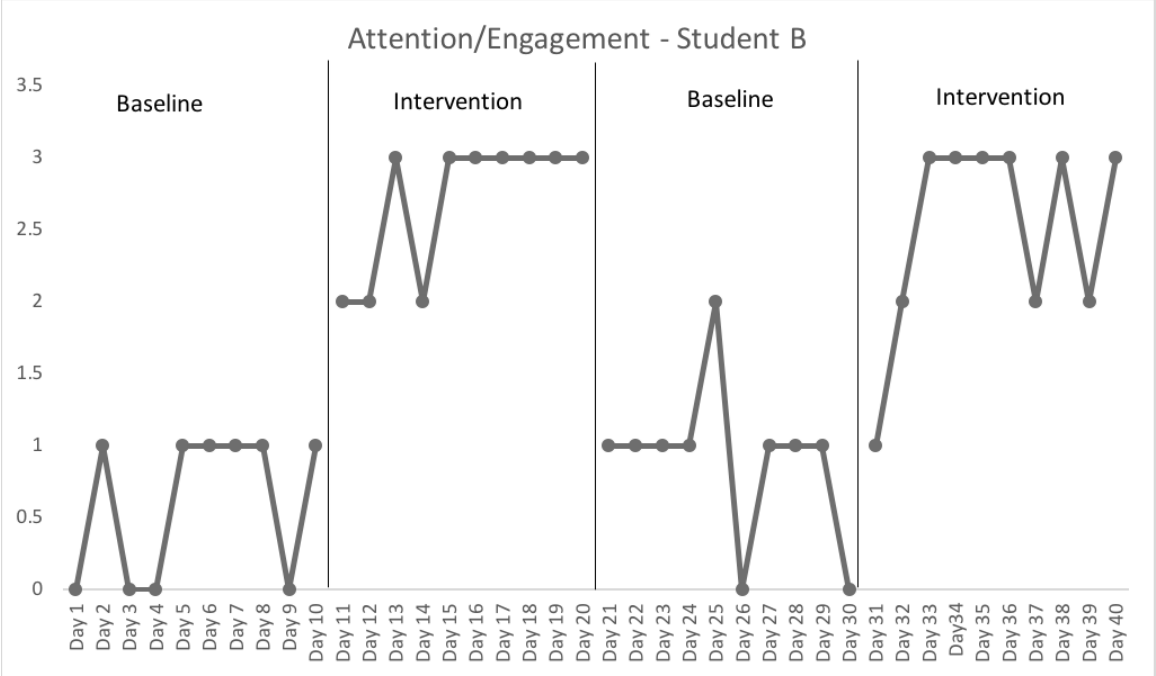

Figure 11. Student B Attention and Engagement Score.

During the first baseline phase, Student C's mean score for attention and engagement was a score of 0.5. Student C's mean score increased during the first intervention phase to 2.6. During the second baseline phase, Student C's mean score decreased to 0.9 and then increased again to 2.6 during the second intervention phase. Student C's data is shown in Figure 12. As shown in the figure, Student C's attention and engagement had a tendency to decrease during baseline phases and increase during the intervention phases when station-teaching was utilized.

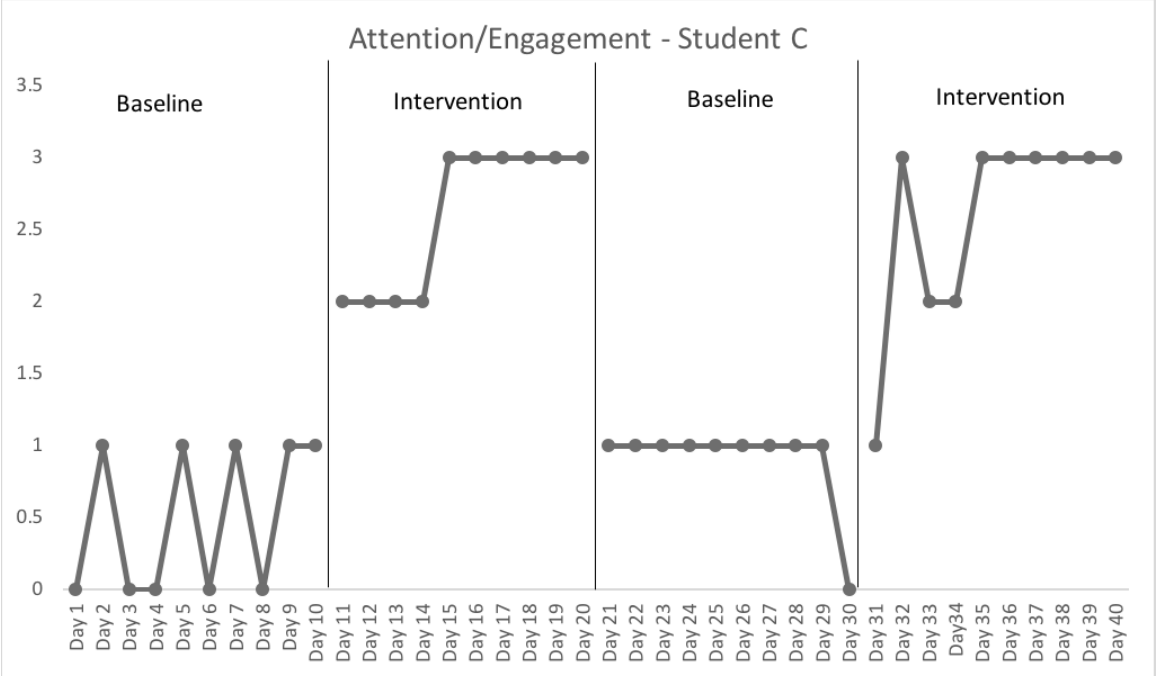

Figure 12. Student C Attention and Engagement Score.

During the first baseline phase, Student D's mean score for attention and engagement was a score of 0.6. Student D's mean score increased during the first intervention phase to 2.5. During the second baseline phase, Student D's mean score decreased to 0.9 and then increased again to 2.8 during the second intervention phase. Student D's data is shown in Figure 13. As shown in the figure, Student D's attention and engagement had a tendency to decrease during baseline phases and increase during the intervention phases when station-teaching was utilized.

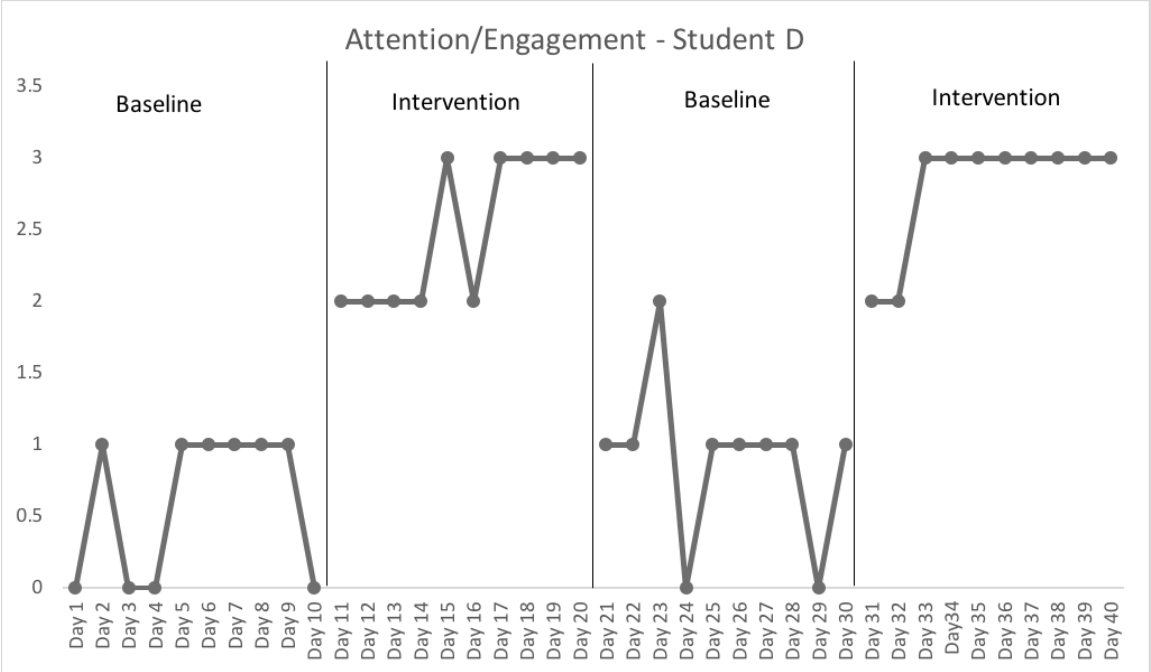

Figure 13. Student D Attention and Engagement Score.

During the first baseline phase, Student E's mean score for attention and engagement was a score of 0.7. Student E's mean score increased during the first intervention phase to 2.6. During the second baseline phase, Student E's mean score decreased to 0.9 and then increased again to 2.8 during the second intervention phase. Student E's data is shown in Figure 14. As shown in the figure, Student E's attention and engagement had a tendency to decrease during baseline phases and increase during the intervention phases when station-teaching was utilized.

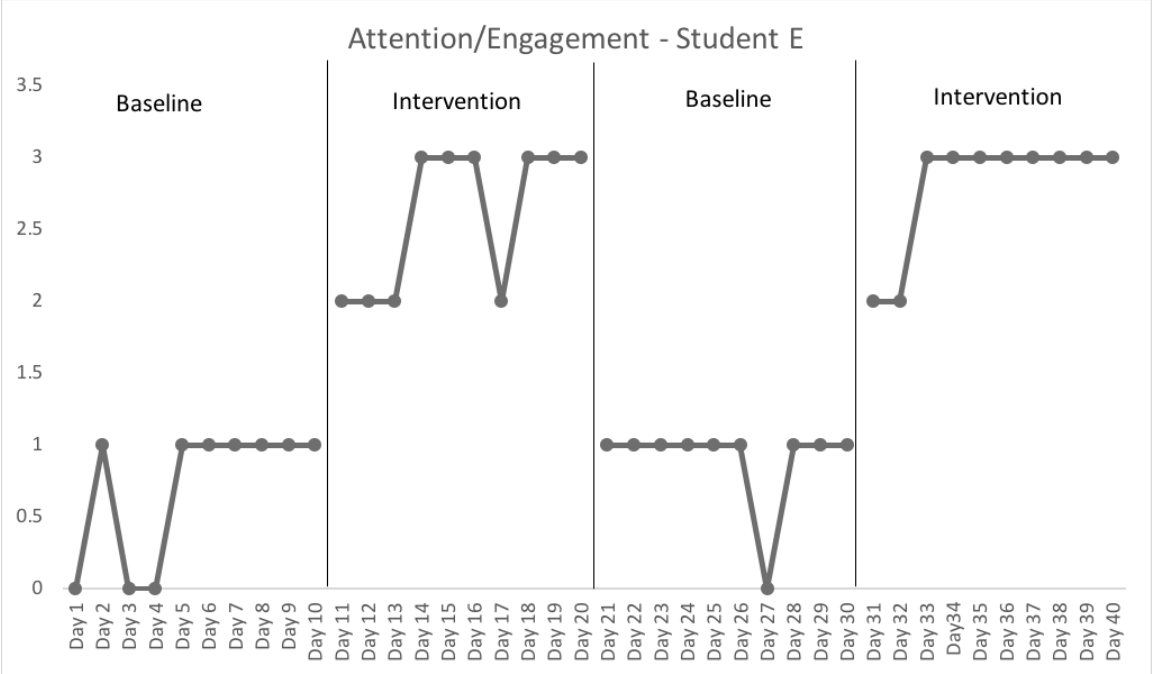

Figure 14. Student E Attention and Engagement Score.

During the first baseline phase, Student F's mean score for attention and engagement was a score of 0.9. Student F's mean score increased during the first intervention phase to 2.6. During the second baseline phase, Student F's mean score decreased to 1.1 and then increased again to 2.7 during the second intervention phase. Student F's data is shown in Figure 15. As shown in the figure, Student F's attention and engagement had a tendency to decrease during baseline phases and increase during the intervention phases when station-teaching was utilized.

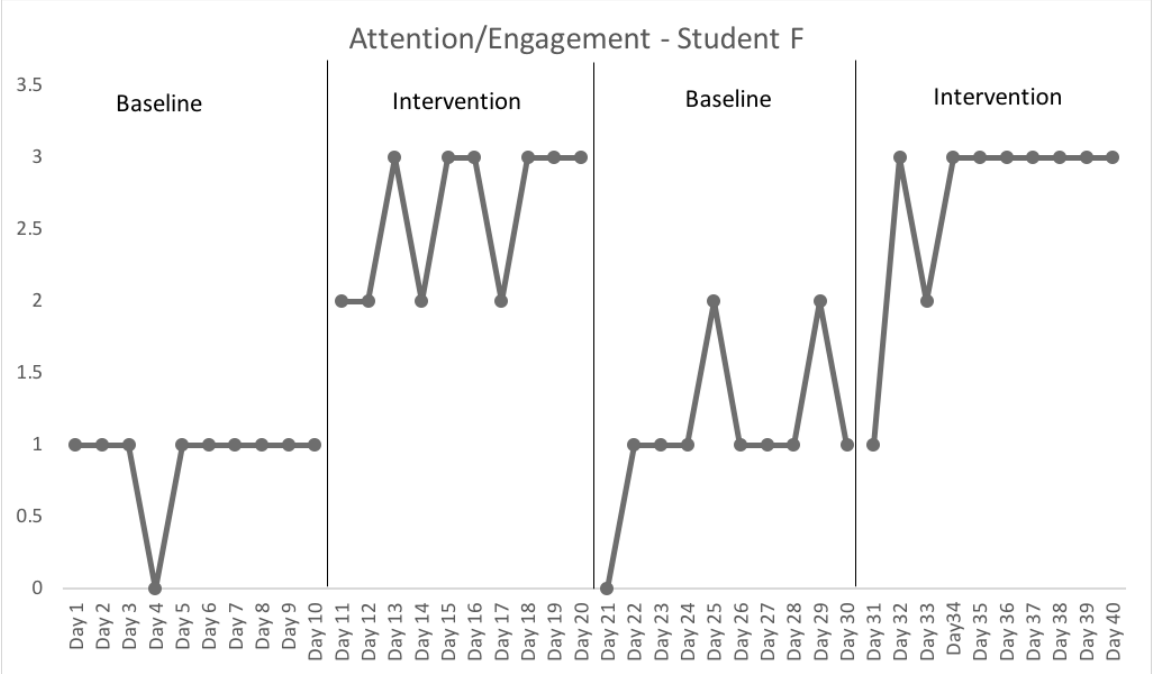

Figure 15. Student F Attention and Engagement Score.

During the first baseline phase, Student G's mean score for attention and engagement was a score of 1.6. Student G's mean score increased during the first intervention phase to 2.5. During the second baseline phase, Student G's mean score decreased to 1.4 and then increased again to 2.8 during the second intervention phase. Student G's data is shown in Figure 16. As shown in the figure, Student G's attention and engagement had a tendency to decrease during baseline phases and increase during the intervention phases when station-teaching was utilized.

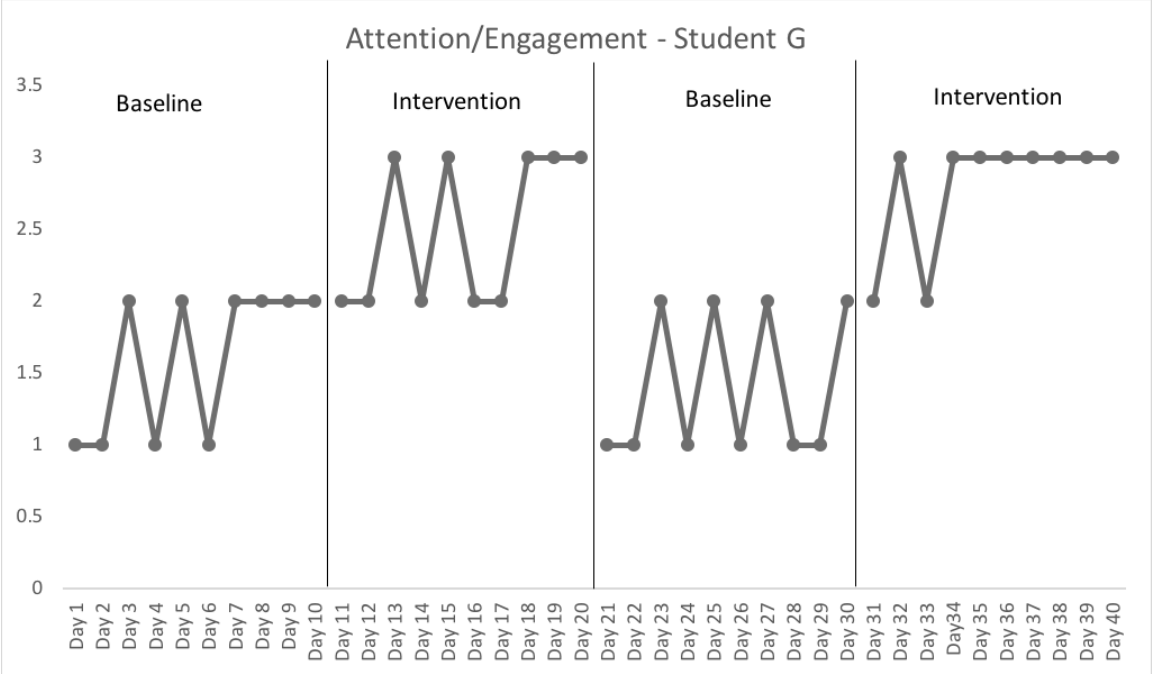

Figure 16. Student G Attention and Engagement Score.

During the first baseline phase, Student H's mean score for attention and engagement was a score of 1.6. Student H's mean score increased during the first intervention phase to 2.7. During the second baseline phase, Student H's mean score decreased to 0.8 and then increased again to 2.6 during the second intervention phase. Student H's data is shown in Figure 17. As shown in the figure, Student H's attention and engagement had a tendency to decrease during baseline phases and increase during the intervention phases when station-teaching was utilized.

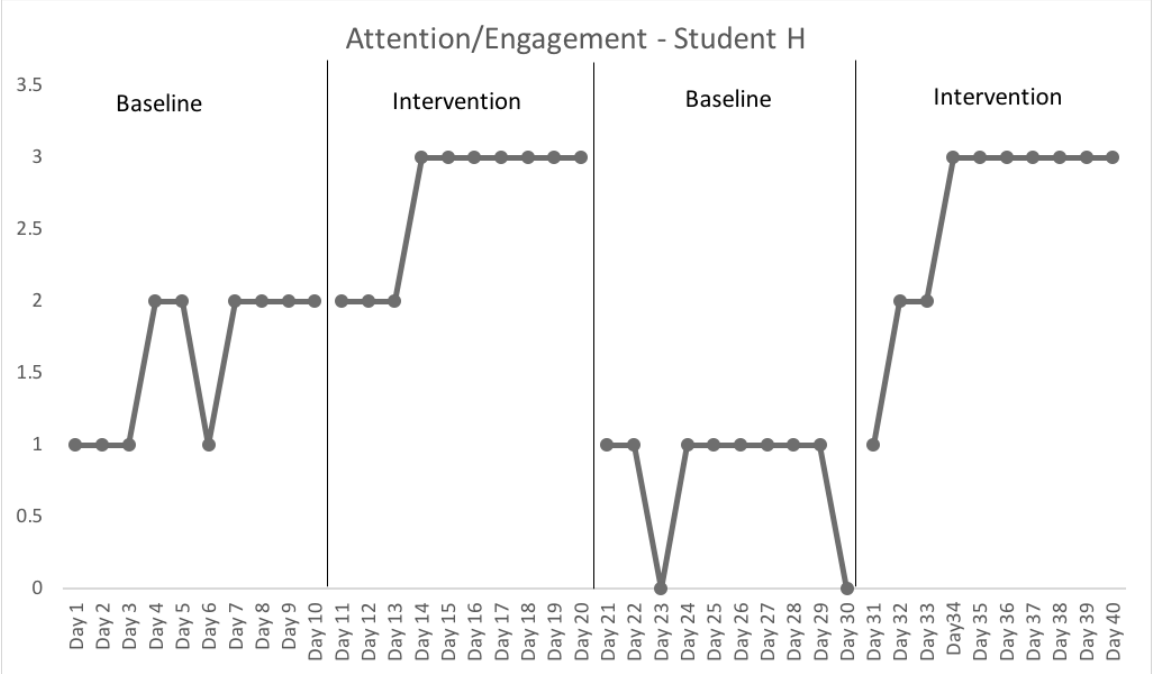

Figure 17. Student H Attention and Engagement Score.

Survey Results

At the conclusion of the second intervention phase, all students completed a Likert scale satisfaction survey. Results were tallied and then converted into percentages. The student response percentages for each category in the ten-statement survey are presented in Table 4.

Table 4

Student Satisfaction Survey Percentage Results

Statements	Strongly Agree (%) 5	Agree (%) 4	Undecided (%) 3	Disagree (%) 2	Strongly Disagree (%) 1
1. I felt supported as a learner in Writing when using small groups.	75	0	12	12	0
2. I enjoyed participating in small groups.	62	12	25	0	0
3. I would prefer to work independently in Writing.	12	12	25	0	50
4. I would prefer to work with a partner in Writing.	62	0	12	0	25
5. From participating in small groups, I felt as though I learned more about the topics we were discussing about in class.	62	0	12	12	12
6. I felt being pulled to small group was negative.	0	0	37	0	62
7. I enjoyed working in a small group with my teacher.	62	37	0	0	0
8. I felt as though I did not need to be pulled to small group.	12	12	12	12	50
9. I hope we use small groups more in the future and other classes.	75	0	12	12	0
10. I think I will do better on as a writer, due to my experience in working in small groups.	75	12	12	0	0

As seen in Table 4, students marking a score of 4 or 5 shows that they agreed or strongly agreed with the given statement. Students who marked a score of 3 were undecided on the statement. A score of 2 or 1 shows that the students disagreed or strongly disagreed with the given statement. Eight students completed the survey. Table 4 indicates that most students felt supported when working in a small group, but a small percentage disagreed or was undecided. Similarly, a majority of students indicated that they enjoyed working in small groups in writing, but some were undecided. About half of the students indicated that they would prefer to work independently while the other half disagreed. Similarly, a majority percentage of students responded that they would prefer to work with a partner, and a small percentage disagreed. Most of the students agreed with the statement that they "felt being pulled to small group was negative", with the remaining students responding as undecided. Interestingly, all students involved in the research study "enjoyed working in small groups" with the teacher. Half of the students disagreed with the statement that they "did not need to be pulled to small group" while the remaining students agreed or were undecided. Most students agreed that they felt their experiences working a small group would help them do better as a writer, but a small percentage of students was undecided. Overall, Table 4 shows that most students enjoyed using a small group approach in the classroom during writing.

Chapter 5

Discussion

The purpose of this study was to determine the effectiveness of using the station teaching model of co-teaching as an intervention for improving academic performance and attention or engagement in writing for students with learning disabilities. At the end of the study participants were asked to complete a survey to assess their satisfaction or dissatisfaction with the station teaching model of co-teaching.

Findings

The results of this study showed that students made academic growth and were engaged and attentive when the station-teaching model was utilized in writing. All students showed an increase in academic performance and attention and engagement during intervention stages. During the second baseline phase, several students showed increased scores. This may perhaps indicate that the students maintained some of the learned skills from the first intervention phase.

The present study confirms the findings of Murawski and Hughes (2009) that co-teaching, through multiple models, in combination with collaboration can be a successful model of teaching for students with learning disabilities. All students involved in the study showed an increase for both academic performance and attention and engagement during the intervention phases. Student A's initial baseline mean was a score of 0 out of 3. When the intervention was applied, her mean score increased to a score of 2.3 out of 3. When the intervention was removed, her mean score decreased to a 0.8 and then increased again during the second intervention phase to 2.6. Similar to these results, Student G showed increases during the intervention phases. Student G also showed that

during the second baseline phase, her score increased from the first baseline phase with scores from 0.4 during the first phase and 1.4 during the second baseline phase. This data may indicate that she was able to maintain skills taught during the intervention phase.

As presented by Murawski and Hughes (2009), the use of station-teaching may reduce distractions and increase attention of students during instruction. The present study found that all of the students' attention and engagement scores increased during intervention phases. During the initial baseline phases, six out of eight students had scores in the 0 to 1 range for attention and engagement out of a possible 3 points. During the first intervention phase, all students scored in the 2 to 3 range. When the intervention was removed, six out of eight students decreased to the 0 to 1 range. During the second intervention phase, all students scored in the 2 to 3 range again.

The results of the present study support the research of Indrisano et al. (1999), who conducted a study using the station-teaching approach for literacy instruction. In their study, they found that students showed growth in the area of reading as well and enjoyed the station-teaching small group approach (Indrisano et al., 1999). In support of these findings, when assessed using the Likert scale for satisfaction, 99% of students either agreed (37%) or strongly agreed (62%) with the statement that they "enjoyed working in a small group" with their teacher.

Though not assessed in the present study, Murawski and Hughes (2009) also reported the benefits of a co-teaching model for students who were not classified with learning disabilities but may be struggling students. Further research should be conducted to produce findings for this population of students.

Limitations

There are several limitations to be noted with the present study including teacher familiarity, multiple grade level data, and period of time. In one classroom, the regular education teacher recently started a maternity leave and the transition to the interim teacher occurred on a compacted time frame, coincidentally within a week of the baseline data collection period. The other classroom featured increased negative behavior that required an extensive amount of attention and removed focus from the intended co-teaching model.

Data was collected for this study across two different grade levels – one second grade classroom and one fourth grade classroom. Upon analyzing data from the Likert scale responses, students in second grade appeared to prefer the station teaching model more than those in fourth grade. This analysis provides the further question regarding student confidence, preference, and ownership of learning in different grade levels.

Additionally, this study took place in March and April of the school year. Initially, the researcher planned to take four weeks to collect data starting in February, one week for each phase. Due to illnesses of the researcher and participants, snow days, early dismissal days, and late arrivals, data collection did not begin until March. If this study was conducted over a longer period of time, the study may have shown different results.

Implications and Recommendations

Despite the limitations of this study, the data suggests that the station-teaching model positively effects academic performance and attention in the writing classroom on students with learning disabilities. There are multiple models of co-teaching and this

study examined the effects of only one model. A practical recommendation for use of this intervention is to implement the intervention with a blend of other models of co-teaching to meet the needs of various learners.

Further implications of this study should be to consider focusing on targeted student needs through the use of station teaching. The participants were all classified and eligible for special education services under varying classifications. Results are not categorized to a specific population of students and could be more focused to a targeted disability.

As mentioned as a limitation, students in second grade appeared to prefer the station-teaching model to students in fourth grade. Further research could be done surrounding the co-teaching models in specific grade levels. The data concludes that students made growth using the intervention, but does not show much data, aside from the Likert survey, regarding learning preference, confidence level, or social validity of participation.

One statement that students responded to on the Likert survey was with regards to whether they felt it was negative to be pulled to small group for the station-teaching intervention. Thirty seven percent of the students were undecided and 62% disagreed with the statement. Furthermore, about half of the students agreed or were undecided about whether they felt they needed to be provided instruction in a small group setting. These two statements provide some insight to the students' perspectives and perceptions of the station-teaching model. Further research should be conducted to determine whether the use of small groups in station-teaching has positive or negative effects on students' confidence in the classroom.

Conclusion

Overall, it appears that a station-teaching model of co-teaching is an effective model of instruction for students with learning disabilities in writing, as it increased their academic performance and their attention and level of engagement. Additionally, students were generally pleased with the small group models of station-teaching and felt as though it helped them in writing. In order to identify how effective this intervention will be with specific learning disabilities; further research is needed. This research should be conducted with a larger population of students and for a longer amount of time.

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