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The effects of station teaching on academic achievement, attention and focus of students with learning disabilities in an inclusive classroom

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THE EFFECTS OF STATION TEACHING ON ACADEMIC ACHIEVEMENT, ATTENTION AND FOCUS OF STUDENTS WITH LEARNING DISABILITIES IN AN INCLUSIVE CLASSROOM

by

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Dedications

I would like to dedicate this manuscript to the many special, loving, supportive and understanding people in my life, including, my extraordinary children, Joelle and John, my wonderful husband, John, my incredible parents, Mary and Ray, my amazing friend, Kristi and the rest of my remarkable family and friends. This work would not have been possible without their unconditional love, support and encouragement throughout this process.

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Abstract

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The purpose of this study was to investigate the effect of the station model of co-teaching on the academic achievement and attention, focus and engagement of students with learning disabilities, as well as, the students' satisfaction with this model. The study utilized an ABAB single subject design to look at one of the six models developed by Friend and Cook (2004) allowing educators to combine their expertise to meet the needs of students in an inclusive setting. The results reveal the station model of co-teaching to be beneficial for students with learning disabilities in the areas of academic achievement and engagement. The data collected and analyzed on the group show an increase in academic achievement from each baseline to intervention phase as well as from intervention to invention phase. The findings show by the second phase of intervention, student focus and attention occurred over 50% of the time for all students. Positive results were gathered from the student satisfaction survey for station teaching with most students agreeing with the statements relating to its' benefits and implementation. Research into the station model for both students with learning disabilities and those without learning disabilities would be beneficial.

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Chapter 1

Introduction

In many schools today, co-teaching is used as a method of teaching students with diverse learning needs in the general education setting. This inclusive teaching method lends itself to service numerous students with learning disabilities every day. Co-teaching allows for and enhances student achievement of individualized educational plan (IEP) objectives, interactive social and communication skills, and skills generalization (Fisher, Sax, & Pumpian, 1996). Co-teaching requires collaboration between general and special educators and is utilized in various districts as a least restrictive environment setting. For students with disabilities to achieve success in the general education setting, general and special educators need to work together on various fronts. Co-teaching has been defined as: "an educational and instructional delivery approach in which general and special educators work in a coactive and coordinated manner to share responsibility for planning, delivery and evaluation of instructional techniques for a group of students, which involves the joint teaching of academically and behaviorally heterogeneous groups of students in integrated settings." (Sileo, 2005, p.1).

For co-teaching to be successful, teachers need to communicate with one another, have clear goals for their students, and work together as a team to plan instruction which will be most beneficial for student success. The collaborative process of co-teaching requires dedication from both teachers. They need to facilitate the growth of their partnership, with open communication and a willingness to use various models in order to assist students in achieving their greatest potential. Communication is a key factor in the success of the approach and in student achievement. According to Friend and Cook

(2004), there are six co-teaching models that can be utilized to allow educators to combine their expertise to meet the needs of all of their students:
One Teach/One Observe, One Teach/One Assist, Team Teaching, Alternative Teaching, Parallel Teaching and Station Teaching. While using these models, the teachers should focus on the goals and objectives from the IEP of students with learning disabilities while simultaneously meeting the needs of the other students in their class. Nevertheless, without a clear picture of the intended model and their perceptions of the use of the chosen model, the success of the co-teaching pair could falter (Dieker & Burnett, 1996).

Statement of the Problem

How do we best serve students with learning disabilities? We want to make the curriculum accessible to all students and improve the academic achievement of students with learning disabilities. By creating a classroom of acceptance and toleration, offering varying levels of assistance, and exploring learning differences, students can achieve greater academic success. This can occur when learning differences and strategies to address those differences are standard. These concepts result in students with disabilities learning grade-level curriculum while also learning strategies to help them succeed in life (Friend, 2015). Carefully selecting strategies that support the existing curriculum and are connected to standards increases instructional effectiveness and student achievement (Conderman & Hedin, 2014).

Students with learning disabilities often have difficulty in the areas of attention and focus. They are less attentive for a variety of reasons and often display distraction, boredom, impulse control, hyperactivity or lack of engagement. These difficulties hamper

students' ability to acquire key skills, such as focusing on teachers, appropriately interacting with their peers, reasoning, memory and learning foundational skills (Birchwood and Daley, 2010). Offering a variety of strategies appropriate to the skill at hand is important. Students need to be actively engaged and motivated with meaningful, prepared activities. While being instructed in small group and stations, students have the opportunity to gain needed skills while teachers utilize interventions and differentiated instructional delivery, along with continuous progress monitoring to ensure student attention and focus. Specially designed instruction must be utilized in conjunction with accommodations that students with learning disabilities receive to make sure that students reach their goals (Friend, 2015). Tools such as story starters, word banks, and calculators can be helpful to facilitate this learning. Preparedness of educators is crucial for student engagement, attention, and focus.

The responsibilities of general education teachers and special education teachers regarding planning, instruction and assessing in a co-teaching setting varies among individuals. For the co-teaching model to be effectively implemented, teacher collaboration and discussion needs to occur. As a standard, general education teachers and special education teachers are present in co-teaching settings in the general classroom while maintaining joint responsibility for specified classroom instruction (Bauwens, Hourcade, & Friend, 1989). Research shows that the general educator has expertise when it comes to knowledge of the curriculum while the special educator has expertise in various instructional processes used to teach individual students who may learn atypically (Adams & Cessna, 1991; Reeve & Hallahan, 1994; Ripley, 1997).

Both special and general educators bring something important and unique to the classroom. Clarity of educator roles, communication, and equality in the partnership is needed for co-teaching and student success (Carty & Farrell, 2018). Co-teachers have a professional relationship that is distinctive to their situation and differs from any other. The relationship involves two educators working closely together in one environment for a shared purpose. Therefore, planning for co-taught instruction is vital to a successful relationship (Sileo, 2005).

Significance of the Study

Students with learning disabilities exhibit need in the areas of academic instruction and attention and focus. The station co-teaching model may be a means to facilitate increased outcomes for students with learning disabilities benefitting from the expertise of both a general and special educator. The station model allows for increased attention on, and differentiation for, students with varying abilities. The small group environment encourages increased focus and offers immediate feedback. While many studies have focused on co-teaching, few studies have focused on the specific co-teaching model of *stations* in connection to the academic achievement and focus and engagement of students with learning disabilities. The present study aims to fill this gap. When working in concert with one another, the co-teaching marriage can be a highly effective approach to teaching those with differing abilities.

Statement of Purpose

The purpose of this study is to investigate the effect of a co-teaching station model on the academic achievement and focus and engagement of students with learning

disabilities. This study will also help educators recognize the usefulness and advantages of station teaching. Students will be taught with team teaching (baseline) and station teaching (intervention). Students will be assessed using exit slips to monitor their achievement and a checklist to monitor attention and focus in the classroom. They will answer a social validity Likert scale questionnaire to offer insight on their perceptions of the stations of co-teaching model.

Research Questions

1. Does a station co-teaching model effect the academic achievement of students with learning disabilities in an inclusive setting?

2. Does the use of a station co-teaching model effect the attention and focus of students with learning disabilities in an inclusive setting?

3. Are students satisfied with the co-teaching station model?

Operational Definitions

Co-teaching: In terms of this study, co-teaching is defined as the pairing or two, equally responsible and accountable teachers. One special education teacher and one general education teacher share a classroom and share the responsibilities of planning, instructing, and assessing students.

Inclusive setting: In terms of this study, inclusive setting is defined as a general education classroom in which students with and without learning disabilities participate and learn together.

Station co-teaching model: In terms of this study, a station co-teaching model is defined as teachers dividing students into three or more heterogeneous or homogeneous groups. The teachers provide direct instruction at two separate stations while the remaining small group(s) rotate around the stations.

Chapter 2

Review of the Literature

This chapter will begin with the legal mandates of a free and appropriate public education in the least restrictive environment, then provide a description of co-teaching models. Next, the chapter will explore the needs of students with learning disabilities in the areas of academic achievement and focus and engagement. The study will conclude with a review of related conducted studies.

Individuals with Disabilities Education Act (IDEA)

The Individuals with Disabilities Education Act (IDEA) of 2004, is the special education law guaranteeing services to children with disabilities throughout the United States. IDEA allocates funding to states and public agencies to provide early intervention, special education and related services to more than 6.5 million eligible individuals with disabilities (IDEA, 2004). The law requires states to provide free and appropriate public education (FAPE) in the least restrictive environment (LRE) in order to secure funding. As a result of federal mandates, schools' districts are evolving to meet the standards and close the disconnect between general and special education classrooms (Imbody, Paterson, Pratt, & Wolf, 2017).

According to Ruppar, Gaffney, and Dymond (2015), IDEA influenced research and practice of special education due to educator's obligations to facilitate the progress of students with learning disabilities with the general curriculum. Likewise, Imbody et al. (2017) discuss the increase in collaboration between general and special education due to the established educational acts, with co-planning a crucial factor in co-teaching. This

coincides with Conderman and Hedin (2014) describing the access of rigorous curriculum requirements for students with learning disabilities in the least restrictive classroom with co-teaching. Using the strengths and skills of each teacher, students with learning abilities can be more successful. However, many co-teachers do not know how to effectively contribute in a co-teaching situation (Conderman & Hedin, 2014). Cook and Friend (2010) are aligned in this respect, citing the need for collaboration leading to effective practice, as these directly affect the outcomes for students with disabilities.

Co-teaching in an Inclusive Classroom

Research shows that, as a result of No Child Left Behind Act (NCLB, 2002), IDEA (2004), and Response to Intervention (RTI), co-teaching is a rapidly growing inclusive teaching practice. Despite this increase of use, co-teaching in schools is an option that is often poorly implemented (Cohen & Ferree, 2012). In classrooms, we often see one teacher in a lessened role that can lead to issues of power and resentment, often confusing students in the class. Educators need to be seen as equals with distinct and recognized responsibilities for supporting the students. Cohen and Ferree (2012) offer factors that can influence co-teaching success:

- Dispositions that lead to "chemistry" between the cooperating teacher and the student teacher
- Willingness to share and learn with and from each other
- Compatible or complementary teaching philosophies
- Communication and interpersonal skills
- Similar energy level and enthusiasm for teaching
- Content being taught (e.g., Is the student teacher prepared to teach economics rather than American history?)

- Length of the placement (e.g., Is there enough time to move from observation/support into a co-teaching delivery?)
- Time during the day for partners to co-plan and co-reflect on lessons
- Administrative support for shared planning and execution of curriculum

Using the above factors as a gauge, administrators and educators can make informed decisions with open communication, leading to a higher rate of success (Lochner & Murawski, 2011). Incorporating the factors above with co-teaching models, can open the door to a better outcome in the classroom.

Tannock (2009) points out how research suggests that students with learning disabilities often succeed in an inclusive setting. In this class setting, students have the benefit of two certified and trained educators, lessons with a variety of formats and differentiated learning that reflect their learning styles. Within a co-teaching partnership, teachers need to work collaboratively when developing their learning plans for the students; however, this is not always the case. General and special education teachers tend to plan independently and fail to connect their plans or practice (Tannock, 2009). "The choice to work as a cooperative unit or independently directly affects the form and extend of learning" (Tannock, 2009, p. 173). When carried out successfully, the cooperative unit formed for co-teaching allows students with learning disabilities to access the general education curriculum as well as receive strategies for specialized instruction to support their learning (Chamberlain, Cook, Friend, & Shamberger, 2010).

Models of Co-teaching

The six models of co-teaching allow educators to meet the needs of all students in the classroom. Students with disabilities can have their IEP goals and objectives addressed while other students can have their learning needs met (Chamberlain et al., 2010). The specific co-teaching approach to be used for a lesson needs to be chosen by the teachers, dependent upon the instructional content being taught. Brendle, Lock, and Piazza (2017) researched two co-taught classrooms to gather information regarding roles, collaboration, instruction, and assessment. The qualitative study examined data obtained through interviews, rating scales, and classroom observations. The information from the general and special education teachers in co-taught classrooms provided insight into their methods of implementation and their knowledge and perceptions of co-teaching. Their results indicated a lack of knowledge by the teachers in the components of co-teaching and strategies to ensure student achievement.

Research directly relating to the outcomes of students with learning disabilities in a co-teaching environment is lacking. One main point suggested throughout the research suggests that in order for student-learning outcomes to be successful, effective teacher objective co-planning needs to occur (Imbody, Paterson, Pratt & Wolf, 2017; Paulsen, 2008; Van Garderen & Whittaker, 2006). Little research has delved into the effectiveness of the particular models of co-teaching. The majority of studies offer descriptions of how individual models can be used or evaluate a broad view of co-teaching by focusing on the overall concept of co-teaching (Anastasiou & Mavropalias, 2016; Carty & Farrell, 2018; Chamberlain et al., 2010; Chamberlin & Rexroat-Frazier,

2018; Cook & Friend, 1995). The effectiveness or ineffectiveness of each approach and model is not broached; differences in their uses are not explored.

Friend and Cook (2004) introduced six co-teaching approaches for teachers to utilize when combining their expertise to meet the needs of all of their students. These models have continued to be used throughout all of the research found and have remained consistent among researchers. There are slight differences in the wording and expectations of other descriptions, however, nothing contradicting. The co-teaching approaches as described by Friend and Cook (2004) follow:

(1) One Teach, One Observe: This model is used to gain a more detailed observation of students as they are engaged in the learning process. The co-teachers decide in advance what type of specific observational information they wish to gather and agree on a system to gather the data. The teachers analyze the information together following the lesson.
(2) One Teach, One Assist/Drift: This approach allows one educator primary responsibility for teaching while the other educator circulates through the room providing unobtrusive support and assistance to students as needed.
(3) Parallel Teaching: In this model, the educators are both teaching the same information simultaneously, but they divide the class in half. This allows student learning to occur in a smaller group with more supervision by one teacher and additional opportunity for students to respond.
(4) Station Teaching. With this approach, teachers divide the content and the students. Each teacher will teach their content to one group and then repeat the instruction for the other groups. Additional stations

could require students to work independently on a skill or with a peer tutor.

(5) Alternative Teaching: In alternative teaching, one teacher takes responsibility for the large group while the other teacher works with a smaller group of students needing specialized attention.

(6) Team Teaching: This approach requires both teachers to deliver the same instruction equally at the same time, or tag team teaching. This is considered the most complex but rewarding way to co-teach, but it is dependent on the teachers' styles.

Academic Achievement of Students with Learning Disabilities

Students' academic achievement is at the forefront of educational policies. According to Erickson, Kingston, Noonan and Zheng (2014), this research is important as academic achievement leads to social inclusion, economic self-sufficiency, and general quality of life. Educators research best practices to improve their impact on achievement of students with learning disabilities. Bear, Braziel, and Kortering (2006) indicate a students' lack of application of skills along with lower academic achievement and greater behavioral problems tend to lessen the chance of high school graduation. Building skills to apply academic knowledge, offering academic support, and supplemental services to students with learning disabilities will benefit these individuals.

The research on the impact of co-teaching and its' models on the academic achievement of students with learning disabilities is scarce. Murawski and Swanson (2001) conducted a meta-analysis on co-teaching research with quantitative data. In their search, they analyzed 37 articles, with only six studies having potential for their meta-

analysis. With the limited data, results displayed co-teaching in elementary grades to have the potential for a positive impact on student achievement.

Findings from Murawski (2006) align with the research of Murawski and Swanson (2001). Murawski (2006) conducted a pretest-post-test group design with ninth grade students with learning disabilities and those without in both co-teaching and non-co-teaching classrooms. The statistical analyses resulted in no observable differences; however, looking at the pre- and post-score differences showed students did make gains in the co-taught classrooms. In the students' spelling and reading comprehension subtests, students with learning disabilities in the co-teaching situation demonstrated better scores than the students with learning disabilities students not in a co-teaching classroom. The math and vocabulary subtests determined that all students with learning disabilities improved from their pre-test scores regardless of their classroom situation.

Attention and Focus of Students with Learning Disabilities

Students with disabilities work at slower rates, produce lower quality work than they are capable, and exhibit difficulties maintaining on-task behaviors and following through with instructions (Friedlander, Frizzelle, Graham, Harris, & Saddler, 2005). In a longitudinal study, Shaver, Wei, & Yu (2014) identified students with learning disabilities and attention deficits had lower letter word identification, reading levels, and social skills. According to the longitudinal study, given a national sample of 11.000 students with learning disabilities, 28% of students had ADHD. Inattention, lack of focus, decrease in task persistence and organizational difficulties may hinder learning and

limit information processing, listening comprehension, and retrieval of information during learning opportunities (Farkas, Hillemeier, Maczuga, & Morgan, 2014).

Co-teaching can increase on-task behaviors of students with learning disabilities by utilizing an increase in individualized instruction (Carty & Farrell, 2018). Even though utilizing individualized instruction has the possibility of decreasing interaction with peers, the nature of inclusion and using co-teaching as a model of support, has been shown to benefit students (Strogilos & Avramidis, 2015). Similarly, Murawski (2006) suggests that co-teaching classes utilize a variety of activities and instruction that benefit the students and different learning styles. This allows for less time managing student behavior, as the students are more attentive and focused.

The Station Model of Co-teaching

The present study focuses on the co-teaching model of station teaching as a means to increase the academic achievement and focus of students with learning disabilities. Station teaching allows students to work with teachers independently while rotating through their stations. Two of the stations will have teacher instruction or assistance with individual support. This method allows for smaller groupings with differentiated instruction. Station teaching was selected because it lines up with math programs and curriculum easily. Mathematics revolves around spiraling of information and concepts. Station teaching puts responsibility on both teachers, requiring each of them to deliver content for specially designed instruction (Friend, 2015). The use of station teaching in the mathematics classroom of in-class support for students with disabilities seems promising. The ability to focus on individualized needs while working with all students

is beneficial and has the potential for higher success for students academically and socially while increasing attention and focus (Chitiyo & Brinda, 2018).

Research related to station teaching and student academic achievement and/or focus and engagement is lacking, however a few studies were found on co-teaching and academic achievement (Tremblay, 2013; Fontana, 2005; Magiera & Zigmond, 2005; Hang & Rabren, 2009), attendance (Tremblay, 2013), and student perceptions (Chamberlain, Cook, Friend & Shamberger, 2010; Hang & Rabren, 2009). Fontana (2005) studied the effectiveness of co-teaching relating to academic achievement. The study found significantly higher final grades of students in co-taught classrooms when compared to their peers with learning disabilities not in co-taught classrooms. Students with learning disabilities instructed in co-taught classrooms for one year had higher SAT scores in reading and math than they did the year prior to being in a co-taught class (Hang & Rabren, 2009). Data collected by Tremblay (2013) indicated more effective results in the co-teaching setting compared to a solo special education taught class in the areas of reading, writing, and attendance. Similarly, Magiera and Zigmond (2005) studied teaching students with learning disabilities in a co-taught classroom compared to a solo-taught class. Unlike Tremblay's study, Magiera and Zigmond found limited benefit for students with learning disabilities in co-taught classes. Their study was not comprehensive of all co-teaching models, however, due to the lack of ongoing teacher training and little common planning time found in this situation.

Perceptions of co-teaching by students and teachers in co-taught classrooms offer positive perspectives of co-teaching. Students and teachers feel that they learn more,

have added support, and better behavior in co-taught classrooms (Hang & Rabren, 2009). Students perceive more help, learning through a variety of instructional approaches and teaching styles, and are held to higher standards in co-teaching classrooms. Students with and without learning disabilities report a plethora of benefits from placement in a co-taught classroom (Chamberlain, Cook, Friend & Shamberger, 2010).

Summary

Co-teaching was designed to meet the needs of students with learning disabilities and provide them with a free and appropriate public education in the least restrictive environment in response to the education acts. As Ruppar, Gaffney, and Dymond (2015) suggest, IDEA influenced research and practice of special education due to educator's obligations to facilitate the progress of students with learning disabilities with the general curriculum. The review of this literature suggests that two teachers in a co-teaching environment using their strengths and skills to assist students with learning abilities will be more successful than one teacher in a classroom (Conderman & Hedin, 2014).

Goldhaber, Gratz, Holden and Theobald (2018) used longitudinal data to investigate the outcome for high school students with learning disabilities. They discovered that students with learning disabilities who spent more time in general education classrooms in high school had a higher rate of graduating on time, attending college, and attaining employment than their peers with learning disabilities who spent less time in general education classrooms during these grade levels. Effectiveness depends largely on a school's ability to respond to the needs of individual students. The obligation to assist students with learning disabilities is intensified. When students with

learning disabilities receiving special education services in inclusive classrooms can achieve comparable or better academic and behavioral outcomes (McLaughlin, Rea, & Walter-Thomas, 2002), we need to look closer at the co-teaching model. More research needs to be completed in this area and the effectiveness and outcomes studied. While many studies have focused on co-teaching, few studies have been conducted on the specific co-teaching model of stations in connection to the academic achievement and engagement of students with learning disabilities. The present study aims to fill this gap.

The six models, or approaches, to co-teaching introduced by Cook and Friend in 2004, have stood the test of time and are still used today. Many researchers discuss the approaches but do not offer outcomes from individual models. The goal in the current study is to investigate the effect of the co-teaching station model on academic achievement, and attention and focus of students with learning disabilities. This study will help educators recognize the usefulness and advantages of station teaching, as well as compare, the team teaching and station teaching models as described by Cook and Friend (2004). This will be achieved as the students are monitored on their achievement, attention and focus while utilizing these models. The students will offer insight on their perceptions of the station model of co-teaching model at the conclusion of the study. Changes in student outcomes will be assessed and analyzed at the conclusion of the study.

Chapter 3

Methodology

Setting

School. This study was conducted in a kindergarten through eighth grade public elementary school in a southern New Jersey school district with 679 students, where 73% of the students speak Spanish at home. There are six special education classes in the school, three in-class support and three self-contained classrooms, with 53 students receiving special education services through Individual Education Plans (IEPs). The school is one of six Title 1 kindergarten through eighth grade elementary schools in the district, which also includes a high school and preschool. The district has over 6,000 students with 90% of their students deemed economically disadvantaged.

Classroom. The study occurred in an eighty-minute fifth grade inclusive mathematics class. The students remain together all day with the special education teacher following them between their two classrooms. The students are in one classroom for homeroom, math and science and move to another room after lunch for LAL and social studies. The two classrooms are arranged similarly to utilize the space for maximum learning and to best meet the needs of the students.

The classroom where the study took place has desks arranged in small groups of two to four, with single desks placed strategically around the room for use as needed. There are four small group tables used by teachers, students and centers. Two standing desks with swinging foot bars are in the back of the room for students to use when needed. Three whiteboards placed on different walls are for whole group and small

groups. As far as technology, a Smart TV with an ELMO attached is in the front of the room for daily use, as well as a class computer cart with thirty laptops for one to one student use.

Participants

Students. Seven students with learning disabilities participated in this study. Of the seven students, two are female and five are male. One female is African American, one female and one male are Caucasian, while the other four males are Hispanic. The students are classified as eligible for special education services under the following categories: Communication Impaired, Other Health Impaired (ADHD), and Specific Learning Disability. Table 1 shows general participant information.

Table 1

General Information on Students

Student	**Age**	**Grade**	**Classification**
A	11	5	Communication Impaired
B	10	5	Other Health Impaired (ADHD)
C	10	5	Specific Learning Disability
D	11	5	Specific Learning Disability
E	11	5	Other Health Impaired (ADHD)
F	11	5	Specific Learning Disability
G	11	5	Communication Impaired

Participant 1. Student A is an 11-year-old, fifth grade Hispanic male classified as Communication Impaired. Student A demonstrates a language disorder with difficulties in listening, language organization, expressive language, semantics/vocabulary and syntax/grammar adversely affecting his educational performance. He receives speech/language services once a week to address his receptive and expressive communication and auditory memory skills. Student A works hard to complete most of his work when accommodations are present. He benefits from rewording and/or repeating of directions, refocusing, redirecting, and small group instruction. Student A generally comes to class in a good mood and is quietly silly.

Participant 2. Student B is a 10-year-old, fifth grade Caucasian female classified as Other Health Impaired (ADHD). At first, Student B appears quiet; however, once she is comfortable, she is a very social and talkative student. She prefers asking for assistance one on one and is eager to understand a topic and try it independently, as long as she is in small group. Student B continues to need support in order to stay focused and work independently. She requires praise along the way, as she is unsure of herself. Student B receives speech/language services once a week to address her receptive and expressive skills with a focus on identifying synonyms and antonyms, following directions incorporating basic linguistic, generating multiple meaning words, and discussing similarities and differences of items.

Participant 3. Student C is a 10-year-old, fifth grade Hispanic male classified under Specific Learning Disability with significant discrepancies in the areas of Reading Comprehension, Listening Comprehension, and Oral Expression. This student is always

ready to assist the teacher and walk wherever needed with his abundance of energy. He is less willing to complete and attempt his own work however, unless he is receiving one to one or a very small group assistance. Student C prefers to answer verbally in his own time and performs better when doing so. He cannot always articulate his thoughts, which leads to him becoming frustrated. He needs frequent redirecting and guidance on daily activities and routines.

Participant 4. Student D is an 11-year-old, fifth grade Caucasian male classified under Specific Learning Disability with significant discrepancies in the areas of Basic Reading Skills and Written Expression. He continues to show strengths in verbally articulating ideas and concepts, while needing more assistance putting his thoughts on paper. Student D understands new concepts and has the knowledge and reasoning behind them. He can verbalize these thoughts and explain his thought process but has more difficulty with written explanations. Throughout the year, he has improved his decoding skills and gained more confidence with his reading abilities, often volunteering to read to his peers. Student D's anxiousness hinders his confidence level and his ability to perform tasks. He is a perfectionist and has difficulty acceptable anything less than perfect. Student D is very impulsive and acts on his impulsivity on a regular basis. He will call out, get up and move, having difficulty focusing on the task at hand when he is not in motion. Student D also receives Occupational Therapy where his sessions focus on areas including written/typed communication, organizational skills, time management skills, visual skills, and cognitive skills to enhance his performance in the educational setting.

Participant 5. Student E is an 11-year-old, fifth grade Hispanic male classified as Other Health Impaired with Attention Deficit Hyperactivity Disorder (ADHD). His deficits in the areas of focus and attention, adversely affect his progress in the general education curriculum. Student E requires redirection frequently as well as clarification of assignments. He performs better in small group and with chunked assignments however, he often rushes through his work, not attending to directions. He also receives speech/language services once a week to address articulation /s/ in initial, medial, and final position of words and phrases and sentence formulation. Student E exhibits weaknesses in formulating sentences and recalling sentences. His mistakes often involve omission, addition, transposition, and substitution. He mumbles when unsure of a response and in conversation. When formulating sentences, Student E has difficulty formulating grammatically correct sentences with verbs, adjectives, adverbs, and conjunction adverbs. He has difficulty with inferences and prediction of stories when working with paragraphs and text. Student E receives transitional bilingual and English as a Second Language services. He is most comfortable when active and participating in sporting activities outside.

Participant 6. Student F is a 10-year-old, fifth grade Hispanic male classified under Specific Learning Disability with a severe discrepancy in the area of Oral Expression. He often requires directions given individually to assure understanding and small group instruction and receives daily English as a Second Language and speech/language services once a week. He sometimes refuses to complete work however is improving in this area, as well as, in relating to his peers. Student F is getting better at expressing his thoughts and feelings appropriately but will occasionally blurt out random

words and phrases at inappropriate times. He has difficulty with the correct use of adverb, coordinating and subordinating conjunction, and phrases.

Participant 7. Student G is an 11-year-old, fifth grade African American female, classified as Communication Impaired. She receives speech/language services once a week due to expressive language difficulty. She has difficulty verbally formulating grammatically correct sentences and answering comprehension questions, as well as telling how two things go together. She is often distracted and needs frequent redirecting. Student G does much better with chunked assignments and small group instruction. When working with her peers, she needs reminders of the task and prompting to participate on topic. She often forgets to turn in assignments, putting all papers into her desk or not returning them. Student G is always smiling and willing to help those around her.

Teachers. There are two teachers in this class, one general education certified, the other dual certified as special education and general education. They have been working together for two years in an inclusive setting. Last year, the students remained in the same classroom with both teachers for the entire day, while this year, the students remain in this setting for homeroom, math and science. The students go to another classroom with the same dual certified special education/general education teacher and a different general education teacher for language arts literacy and social studies. The dual certified special education/general education teacher has been teaching in this school for 15 years. She has taught students with learning disabilities as both a regular education

and special education, in-class resource and self-contained, teacher ranging from kindergarten through 5th grades.

Materials

Go Math. The curriculum and lessons used during this study came from the 5th grade curriculum and Go Math series implemented by the district. We used the series as well as supplemental material to teach. Different components of the series were used to differentiate for the students in both whole group, small group, centers and stations. *Show What You Know* questions were used throughout the lesson to gage student understanding. They were a quick view into the problem-solving abilities in the lesson as the student began to attempt individually based on the teachings.

Math notebooks. Students use a notebook to write new vocabulary, sample problems, mathematical rules and procedures. This notebook has been ongoing all year and is a daily reference guide for the students. They copy teacher notes, solve *Do Now* problems, and organize their written work and problem solving.

Exit slips. The teacher created exit slips on the topic of the day for the end of each lesson. These were short questions or problems used to ascertain what the students learned and if they understood the concepts of the day. The teacher immediately scored these daily assessments and the students received immediate feedback. The teacher also utilized the slips to see if a reteach lesson needed to occur for particular students or topics.

Study Jams/Brain Pop. The internet sites were used as a preview and/or follow-up to the learned material. Different lessons from these programs were assigned to students while working in stations.

Survey. Students participating in the study filled out a Likert scale survey following the intervention of station teaching. The survey was given to determine student satisfaction with the implementation and use of station teaching. On the survey there was a rating score from 1-5 where a score of 5 represented strongly agree, 4 represented agree, 3 was neutral or N/A, 2 represented disagree, and 1 represented strongly disagree.

Research Design

The researcher used a single-subject design with ABAB phases to investigate the effect of a co-teaching station model on the academic achievement and focus and engagement of students with learning disabilities. During Phase A, students were instructed using team teaching and baseline data was collected from exit slips and completed "show what you know" questions for assessment. This established the students' present levels of mathematic computation, comprehension, and understanding. During Phase B, station teaching was introduced, where students were assigned groups, rotated throughout stations and instructed, to reinforce content. Students completed assessments, exit slips, and "show what you know" questions for data points. Students completed a variety of exit slips for assessment data during both phases A and B to monitor student achievement using the two different teaching strategies. A checklist to monitor attention and focus in the classroom was completed by the researcher to see the effect of station teaching on this aspect as well.

Procedures

Data for this study was collected over a six-week period. Baseline data for the first phase of the study was collected over a 2-week period. The team-teaching model was used to instruct the students. During this time, the researcher obtained and organized baseline data for each student using exit slips for achievement and checklist to monitor attention and focus in the classroom. The intervention phase using station teaching was introduced and implemented for 2 weeks. This phase required students to be grouped and rotated among stations. These stations included; two teachers, technology, manipulatives, game and reteach/enrichment. The researcher collected data for this phase in the same manner as the first phase. The second baseline phase of team teaching was implemented for one week with data collected. The last phase of station teaching occurred for one week in the same manner as before. At the end of the study, students completed a Likert scale survey rating their satisfaction with station teaching. This survey was anonymous and voluntary.

Measurement Procedures

Student Achievement. Throughout the study, the students' achievement was measured in percentages out of 100%. Students received full credit for answers if they were completed correctly, with no errors and partial credit if the answer was missing a component or step. The amount of points for each problem was dependent upon the total number. The problems came from exit slips, "show what you know" questions, or other assessment questions.

Attention and focus of students. Students were scored on attention and focus using a checklist**.** During an 80-minute period, the researcher observed the students every 15-minutes. They received a 2 each time they were paying attention and focused to the appropriate task, and a 0 when they were not. The scores were tallied, and a final score was obtained for the day.

Data Analysis

All data from the exit slips, "show what you know" questions and other assessment questions used to determine student achievement was collected and recorded on a spreadsheet. The data from the attention and focus checklist was recorded on a spreadsheet as well. All of the information from the spreadsheets was used to create line graphs highlighting the results. The results from the baseline and intervention phases were compared. The data from Phase A and Phase B were used to identify changes between the use of station teaching and team teaching. Mean and standard deviation for each student was calculated for the dependent variable in each phase. The Likert scale survey data was put in a table to measure student satisfaction results.

Chapter 4

Results

This single subject design study utilized ABAB phases with data collected over a six-week period in order to examine the effect of a co-teaching station model on the academic achievement and focus and engagement of students with learning disabilities. Seven fifth grade students with learning disabilities participated in the study where the following research questions were investigated:

1. Does a station co-teaching model effect the academic achievement of students with learning disabilities in an inclusive setting?
2. Does the use of a station co-teaching model effect the attention and focus of students with learning disabilities in an inclusive setting?
3. Are students satisfied with the co-teaching station model?

Baseline data for the first phase of the study was collected over a two-week period where the team-teaching model was used to instruct the students. During this time, the researcher obtained and organized baseline data for each student using exit slips for achievement and checklist to monitor attention and focus in the classroom. The intervention phase using station teaching was then introduced to the students and implemented over a two-week period. This phase required students to be grouped and rotated among stations. These stations included; two teachers, technology, manipulatives, game and reteach/enrichment. The researcher collected data for this phase in the same manner as the first phase. The second baseline phase of team teaching was implemented for one week with data collected in the same manner as above. The last phase of station teaching occurred for one week in the same manner as before. At the end

of the study, students completed a Likert scale survey rating their satisfaction with station teaching. This survey was anonymous and voluntary.

Academic Achievement

Throughout the study, the students' achievement was measured in percentages out of 100. Students received full credit for answers if they were completed correctly, with no errors and partial credit if the answer was missing a component or step. The amount of points for each problem was dependent upon the total number given. The problems came from exit slips, "show what you know" questions, or other assessment questions. All data from the questions was used to determine student achievement was collected and recorded on a spreadsheet. The information from the spreadsheet was used to create line graphs highlighting the results. The results from the baseline and intervention phases were compared and the data from the phases were used to identify changes between the use of station teaching and team teaching. Mean and standard deviation for the group and each student was calculated for the dependent variable in each phase and the results are shown in Tables 2 and 3.

Table 2

Group Academic Achievement

	Baseline 1		Intervention 1		Baseline 2		Intervention 2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Group	78.2	8	81.8	7	73.9	9.1	83.9	7.8

As a group, the student scores increased from the baseline phase to the following intervention phase. During the first baseline phase, the group's mean score was 78.2%. The mean score for first intervention phase increased to 81.8%. During the second baseline phase when the intervention was removed, the group's mean score decreased to 73.9%, however increased to 83.9% during the second intervention phase when station teacher was again utilized.

Table 3

Student Academic Achievement

	Baseline 1		Intervention 1		Baseline 2		Intervention 2	
Student	Mean	SD	Mean	SD	Mean	SD	Mean	SD
A	78.2	16.1	85.2	7.4	73.4	6.7	88.4	4.4
B	86.8	14.3	86.6	9.6	79.6	5	89.8	6.8
C	62.6	27.1	77.4	7.8	67	10.9	72.8	4.7
D	79.8	16.9	86.6	9.6	90.8	3.5	92.8	5
E	74.2	13.8	82.2	4.4	63.2	8.8	74.2	5.7
F	81.6	12.9	67.8	13.9	69.6	11	87.2	3.6
G	84.4	11.8	86.8	5.2	73.4	6.7	81.8	3.3

Student A is an 11-year-old, fifth grade Hispanic male. He is eligible for special education services under the classification of Communication Impaired. During the first baseline phase, Student A's mean score was 78.2%. His first intervention phase had an increased mean score of 85.2%. During the second baseline phase when the intervention was removed, Student A's mean score decreased to 73.4%, however increased to 88.4%

during the second intervention phase. The daily data for Student A is shown in Figure 1. As seen in the figure, Student A's scores were lower during the baseline phases, and increased during the intervention phases when station teaching was utilized.

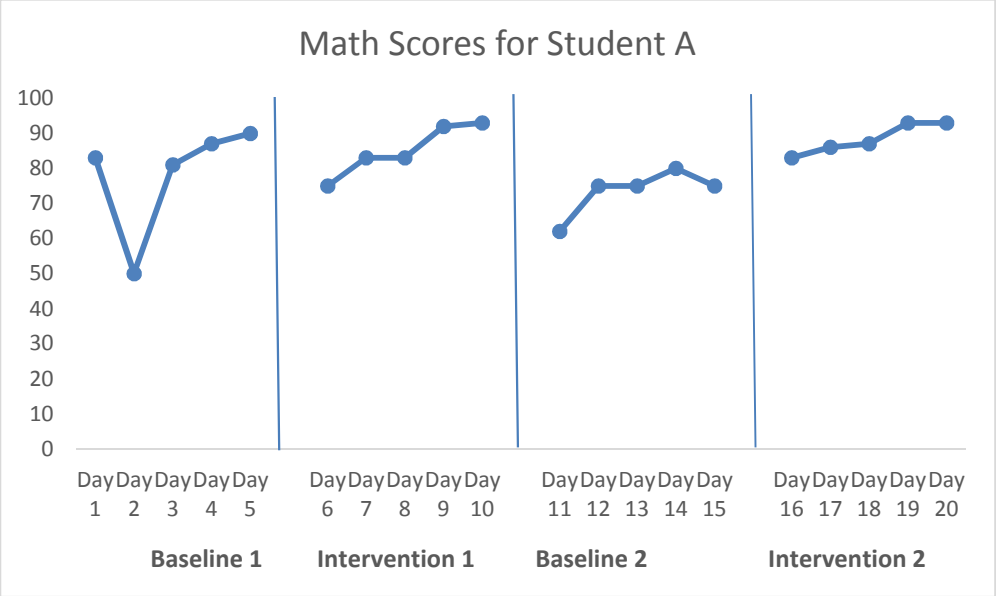

Figure 1. Student A's Academic Achievement.

Student B is a 10-year-old, fifth grade Caucasian female. She is eligible for special education services under the classification of Other Health Impaired with Attention Deficit Hyperactivity Disorder (ADHD). During the first baseline phase, Student B's mean score was 86.8%. Her first intervention phase had a slight decrease with a mean score of 86.6%. During the second baseline phase when the intervention was removed, Student B's mean score decreased to 79.6%, however increased to 89.8% during the second intervention phase. The daily data for Student B is shown in Figure 2. As seen in

the figure, Student B's scores show more sporadic results during the baseline phases, and a slow, steady increase during the intervention phases when station teaching was utilized.

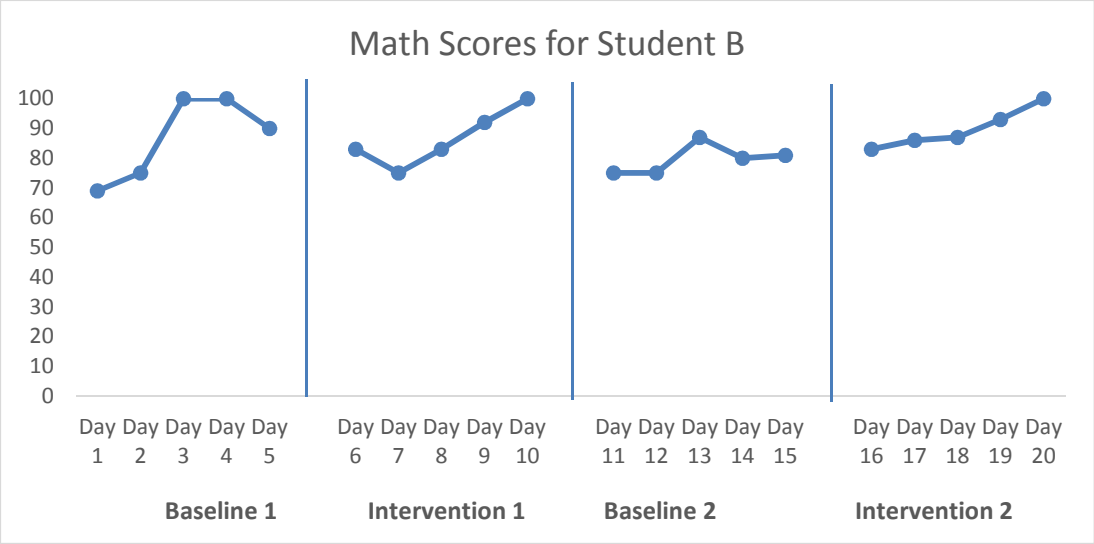

Figure 2. Student B's Academic Achievement.

Student C is a 10-year-old, fifth grade Hispanic male. He is eligible for special education services under the classification of Specific Learning Disability. During the first baseline phase, Student C's mean score was 62.2%. His first intervention phase had an increased mean score of 77.4%. During the second baseline phase when the intervention was removed, Student C's mean score decreased to 67%, however increased to 72.8% during the second intervention phase. The daily data for Student C is shown in Figure 3. As seen in the figure, Student C's scores were erratic during the first baseline phase and increased during the remaining phases with a slower, steady increase in the last two phases. Each phase indicates a slightly higher starting score from the previous phase.

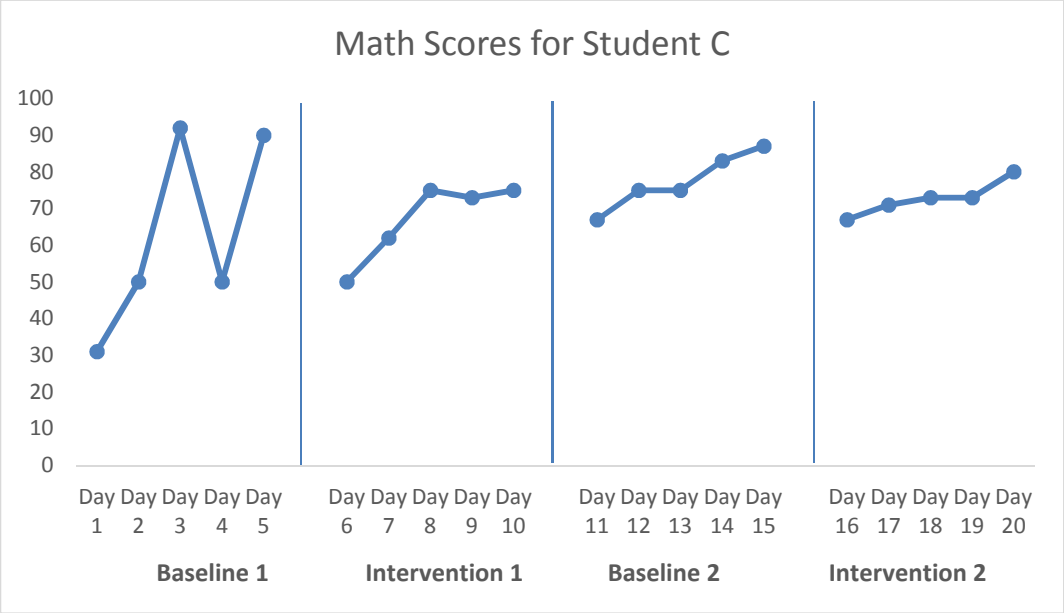

Figure 3. Student C's Academic Achievement.

Student D is an 11-year-old, fifth grade Caucasian male. He is eligible for special education services under the classification of Specific Learning Disability. During the first baseline phase, Student D's mean score was 79.8%. His first intervention phase had an increased mean score of 86.6%. During the second baseline phase, Student D's mean score continued to increase to 90.8%, and continued to increase to 92.8% during the second intervention phase. The daily data for Student D is shown in Figure 4. As seen in the figure, Student D's scores increased throughout the phases, and increased at a steadier rate during the intervention phases when station teaching was utilized.

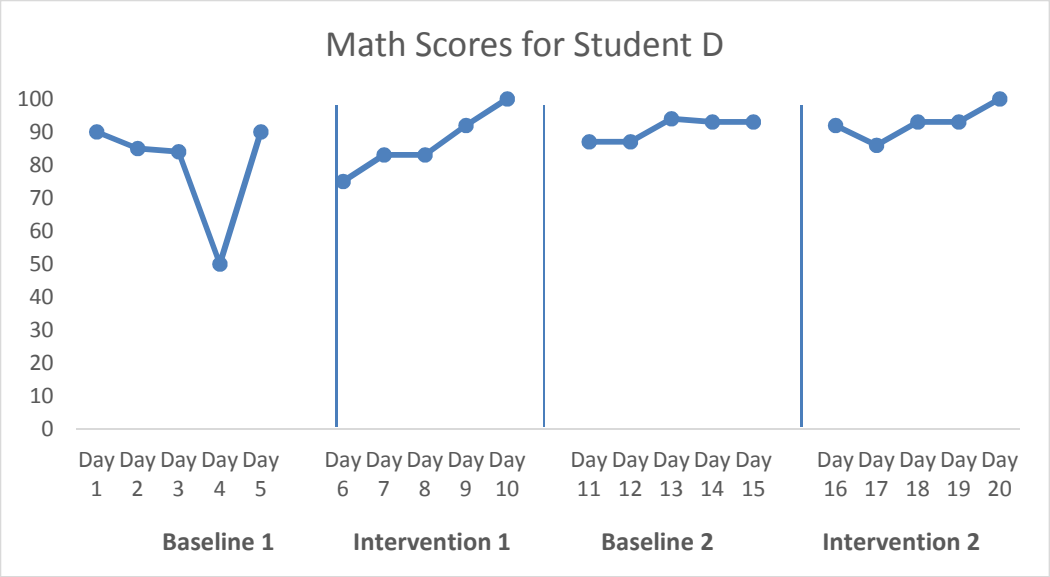

Figure 4. Student D's Academic Achievement.

Student E is an 11-year-old, fifth grade Hispanic male. He is eligible for special education services under the classification of Other Health Impaired with Attention Deficit Hyperactivity Disorder (ADHD). During the first baseline phase, Student E's mean score was 74.2%. His first intervention phase had an increased mean score of 82.2%. During the second baseline phase when the intervention was removed, Student E's mean score decreased to 63.2%, however increased to 74.2% during the second intervention phase. The daily data for Student E is shown in Figure 5. As seen in the figure, Student E's scores were overall lower during the baseline phases and increased during the intervention phases when station teaching was utilized.

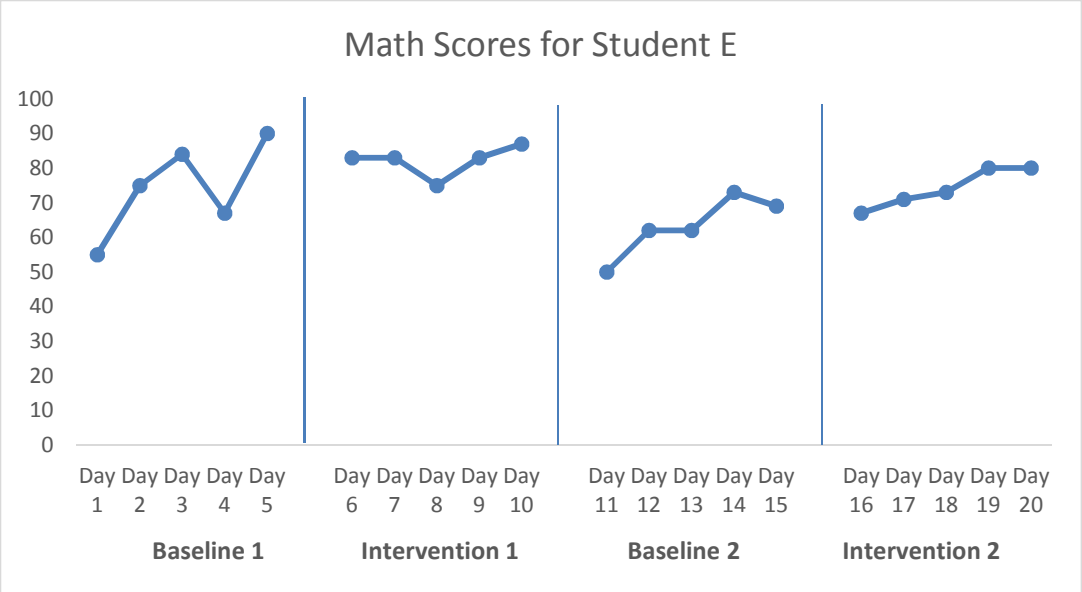

Figure 5. Student E's Academic Achievement.

Student F is a 10-year-old, fifth grade Hispanic male. He is eligible for special education services under the classification of Specific Learning Disability. During the first baseline phase, Student F's mean score was 81.6%. His first intervention phase had a decreased mean score of 67.8%. During the second baseline phase when the intervention was removed, Student F's mean score increased slightly to 69.6%, however increased significantly to 87.2% during the second intervention phase. The daily data for Student F is shown in Figure 6. As seen in the figure, Student F's scores were erratic during the first baseline phase and increased during the remaining phases.

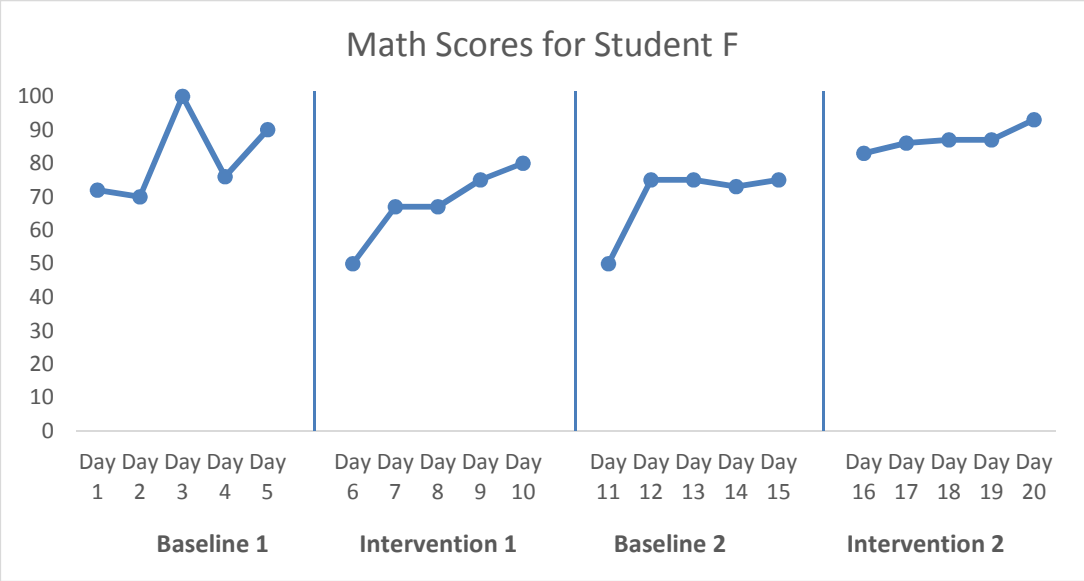

Figure 6. Student F's Academic Achievement.

Student G is a 11-year-old, fifth grade African American female. She is eligible for special education services under the classification of Communication Impaired. During the first baseline phase, Student G's mean score was 84.4%. Her first intervention phase had an increased mean score of 86.8%. During the second baseline phase when the intervention was removed, Student G's mean score decreased to 73.4%, however increased to 81.8% during the second intervention phase. The daily data for Student G is shown in Figure 7. As seen in the figure, most Student G's scores were higher during the intervention phases than the previous baseline phase. The increases appear slower yet steady in the intervention phases.

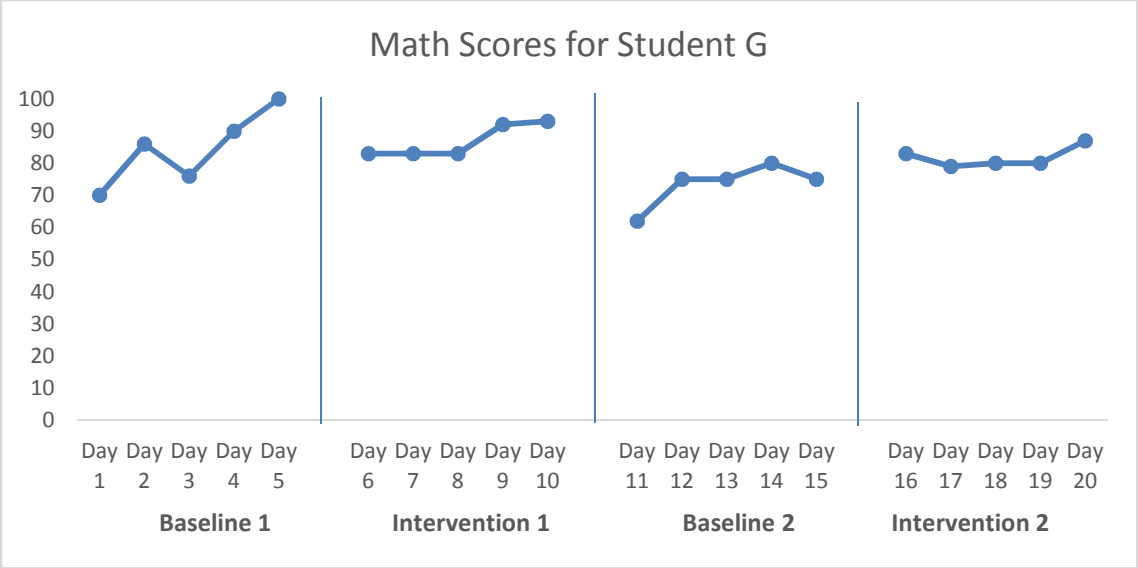

Figure 7. Student G's Academic Achievement.

Attention and Focus

Students were scored on attention and focus using a checklist**.** During an 80-minute period, the researcher observed the students every 15-minutes. They received a 2 each time they were paying attention and focused to the appropriate task, and a 0 when they were not. The numbers were tallied, and a final score was obtained for the day. The data from the attention and focus checklist was recorded on a spreadsheet. All the information from the spreadsheet was used to create line graphs highlighting the results. The results from the baseline and intervention phases were compared. The data from Phase A and Phase B were used to identify changes between the use of station teaching and team teaching. Mean and standard deviation for the group and each student was calculated for the dependent variable in each phase and is presented in Tables 4 and 5.

Table 4

Group Attention and Focus

	Baseline 1		Intervention 1		Baseline 2		Intervention 2	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Group	3.9	1.1	5.9	0.8	4.8	0.7	7.1	0.9

As a group, focus and attention increased from the baseline phase to the following intervention phase. During the first baseline phase, the group's mean for attention and focus was 3.9. The mean increased to 5.9 for the first intervention phase when station teaching was introduced. During the second baseline phase when the intervention was removed, the group's mean decreased to 4.8, however attention and focus increased to a mean of 7.1 during the second intervention phase when station teacher was again utilized.

Table 5

Student Focus and Attention

	Baseline 1		Intervention 1		Baseline 2		Intervention 2	
Student	Mean	SD	Mean	SD	Mean	SD	Mean	SD
A	4.4	0.9	6.8	1.1	4.8	1.1	6.8	1.1
B	5.2	1.1	6.8	1.1	5.6	0.9	8.4	0.9
C	2.4	0.9	5.2	1.1	3.6	1.7	6.4	1.7
D	5.2	1.1	6.8	1.1	5.6	0.9	8.4	0.9
E	3.2	1.1	4.8	1.1	4.4	0.9	6	1.4
F	3.2	1.1	5.6	1.7	4.8	1.1	6.8	1.1
G	4	1.4	5.6	1.7	4.8	1.1	6.8	1.1

During the first baseline phase, Student A's mean for attention and focus was 4.4. His first intervention phase had an increased mean score of 6.8. During the second baseline phase when the intervention was removed, Student A's mean score decreased to 4.8, however increased to 6.8 during the second intervention phase. The daily data for Student A is shown in Figure 8. As seen in the figure, Student A's attention and focus were lower during the baseline phases and increased during the intervention phases when station teaching was utilized.

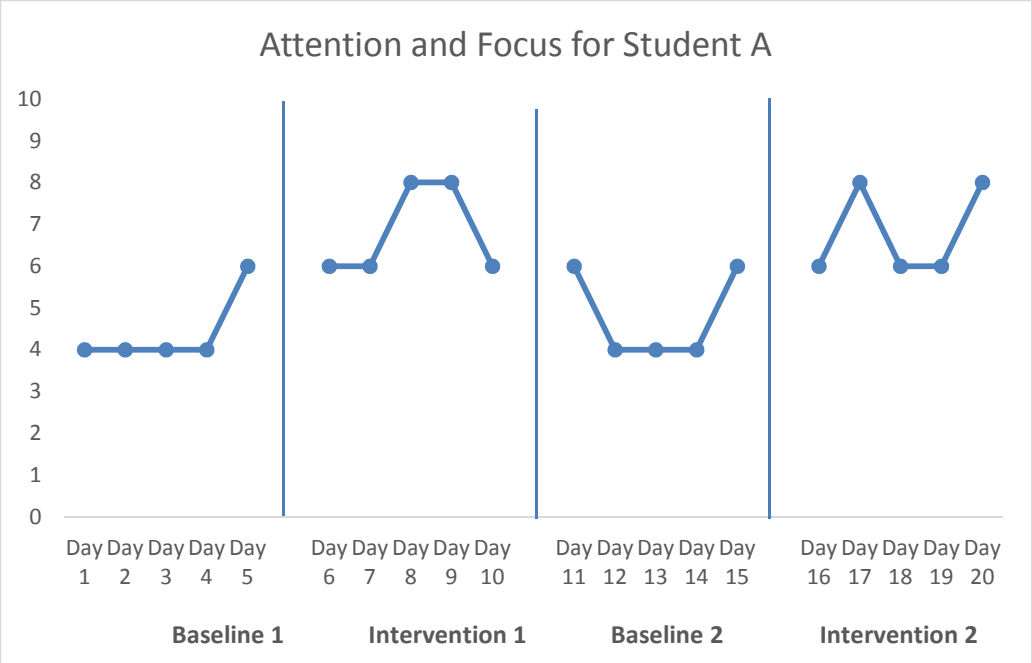

Figure 8. Student A's Attention and Focus.

During the first baseline phase, Student B's mean for attention and focus was 5.2. Her first intervention phase had an increased mean score of 6.8. During the second baseline phase when the intervention was removed, Student B's mean score decreased to 5.6, however increased to 8.4 during the second intervention phase. The daily data for Student B is shown in Figure 9. As seen in the figure, Student B's attention and focus were lower during the baseline phases and increased during the intervention phases when station teaching was utilized.

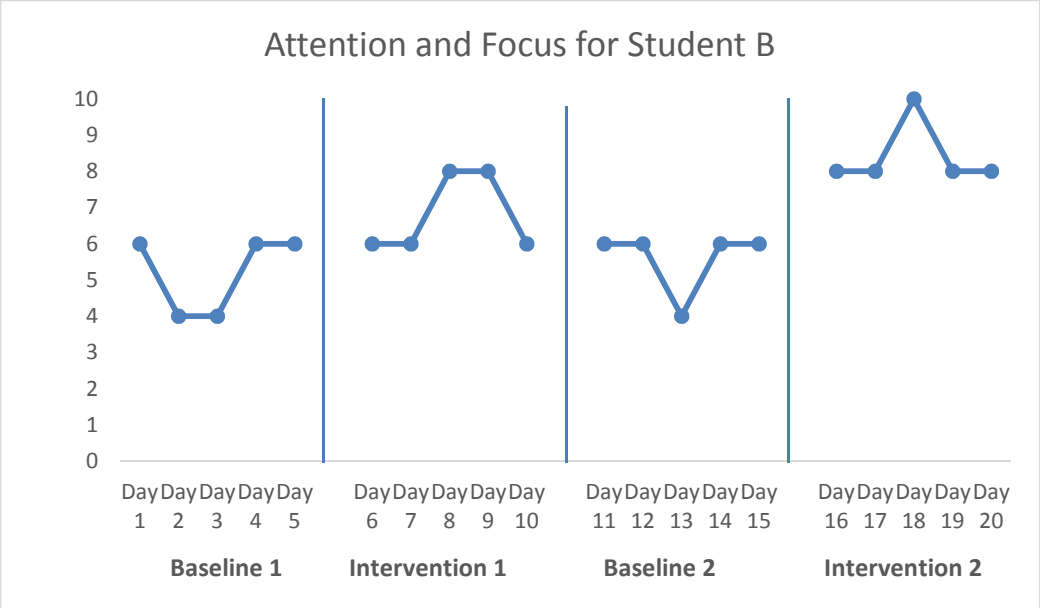

Figure 9. Student B's Attention and Focus.

During the first baseline phase, Student C's mean for attention and focus was 2.4. His first intervention phase had an increased mean score of 5.2. During the second baseline phase when the intervention was removed, Student C's mean score decreased to 3.6, however increased to 6.4 during the second intervention phase. The daily data for Student C is shown in Figure 10. As seen in the figure, Student C's attention and focus were lower during the baseline phases and increased during the intervention phases when station teaching was utilized.

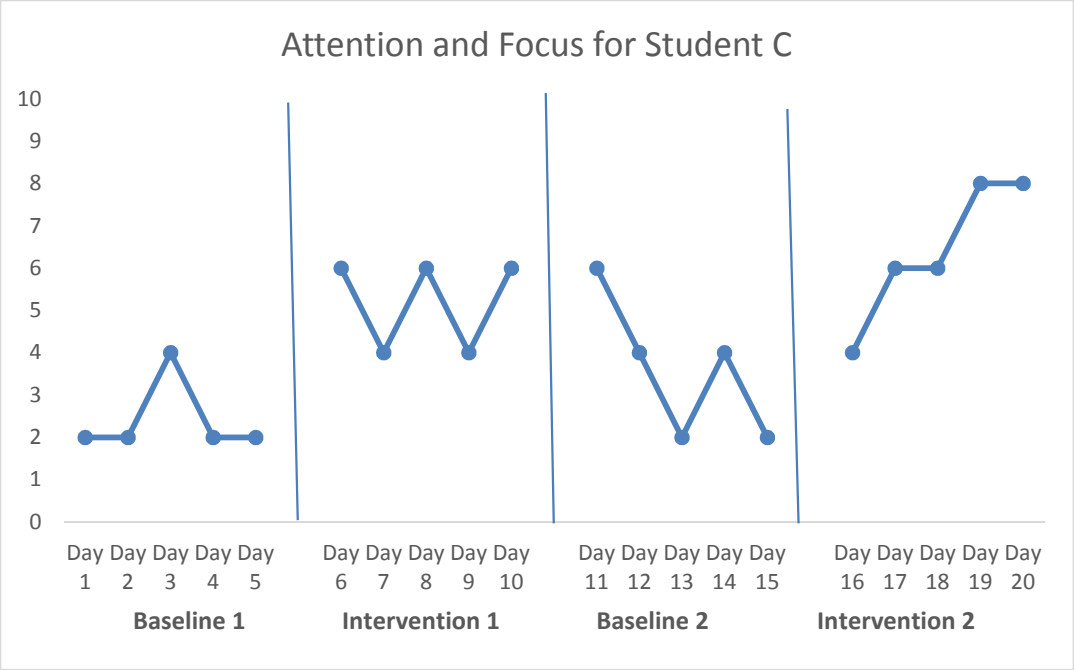

Figure 10. Student C's Attention and Focus.

During the first baseline phase, Student D's mean for attention and focus was 5.2. His first intervention phase had an increased mean score of 6.8. During the second baseline phase when the intervention was removed, Student D's mean score decreased to 5.6, however increased to 8.48 during the second intervention phase. The daily data for Student D is shown in Figure 11. As seen in the figure, Student D's attention and focus were lower during the baseline phases and increased during the intervention phases when station teaching was utilized.

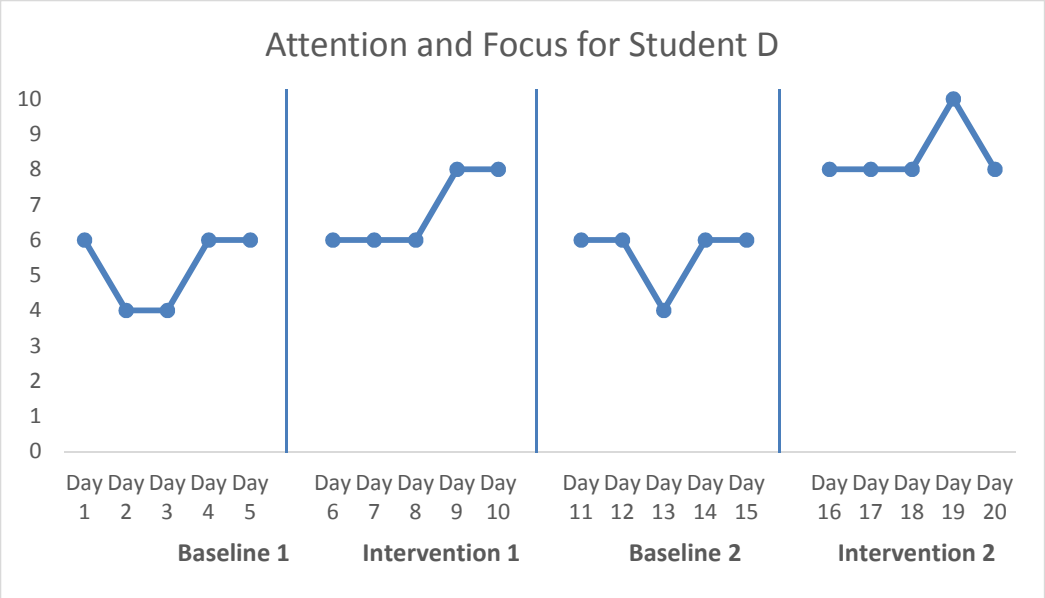

Figure 11. Student D's Attention and Focus.

During the first baseline phase, Student E's mean for attention and focus was 3.2. His first intervention phase had an increased mean score of 4.8. During the second baseline phase when the intervention was removed, Student E's mean score decreased to 4.4, however increased to 6 during the second intervention phase. The daily data for Student E is shown in Figure 12. As seen in the figure, Student E's attention and focus were lower during the baseline phases and increased during the intervention phases when station teaching was utilized.

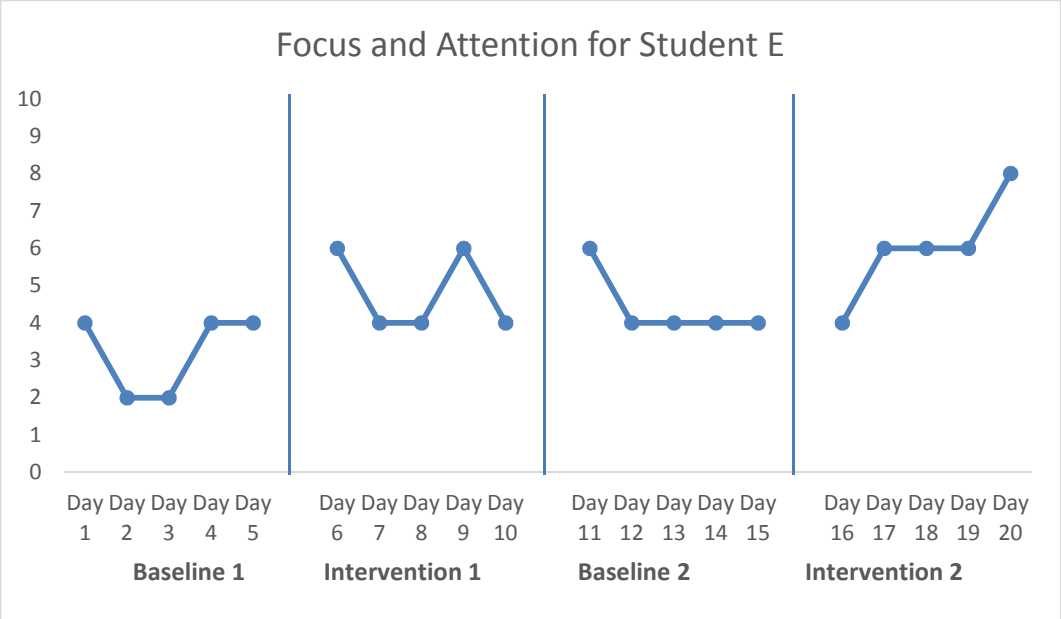

Figure 12. Student E's Attention and Focus.

During the first baseline phase, Student F's mean for attention and focus was 3.2. His first intervention phase had an increased mean score of 5.6. During the second baseline phase when the intervention was removed, Student F's mean score decreased to 4.8, however increased to 6.8 during the second intervention phase. The daily data for Student F is shown in Figure 13. As seen in the figure, Student F's attention and focus were lower during the baseline phases and increased during the intervention phases when station teaching was utilized.

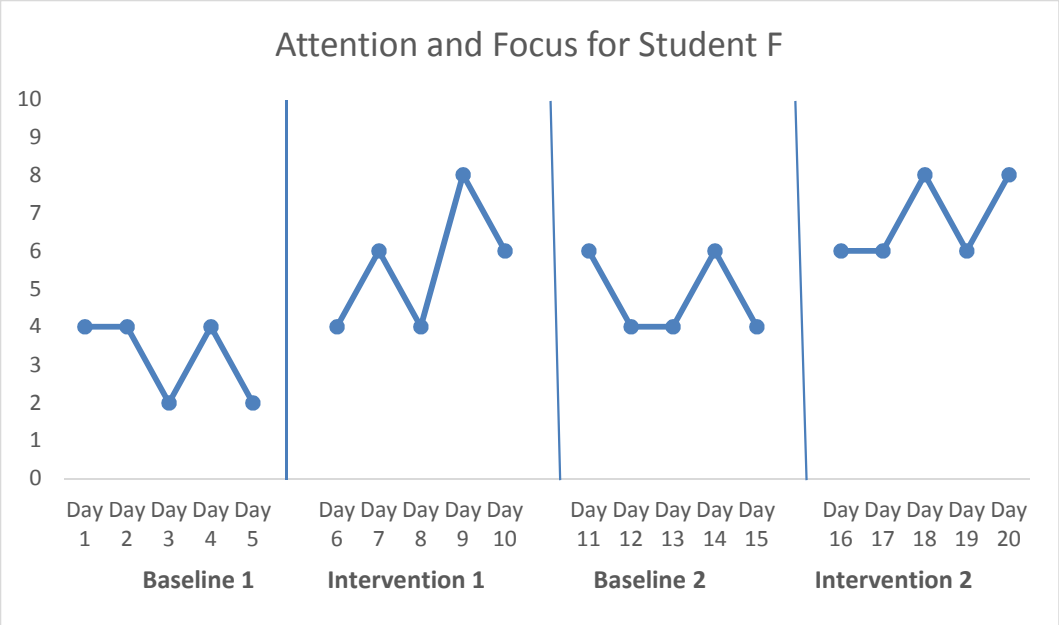

Figure 13. Student F's Attention and Focus.

During the first baseline phase, Student G's mean for attention and focus was 4. Her first intervention phase had an increased mean score of 5.6. During the second baseline phase when the intervention was removed, Student G's mean score decreased to 4.8, however increased to 6.8 during the second intervention phase. The daily data for Student G is shown in Figure 14. As seen in the figure, Student G's attention and focus were lower during the baseline phases and increased during the intervention phases when station teaching was utilized.

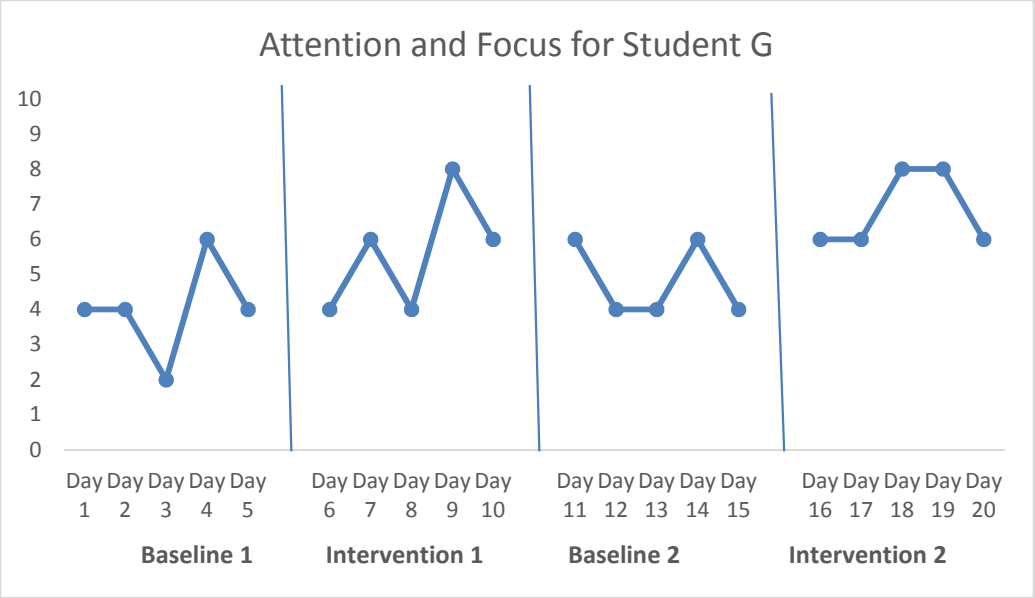

Figure 14. Student G's Attention and Focus.

Survey Results

The seven students voluntarily completed the Likert scale survey for station teaching after the second intervention stage of the research. These results were tallied and converted to percentages before the data was presented in a table to measure the student satisfaction results of the statements. The results are presented in Table 6.

Table 6

Student Satisfaction Survey Percentage Results

Statements	Strongly Agree (5) %	Agree (4) %	Neither or N/A (3) %	Disagree (2) %	Strongly Disagree (1) %
1. Station teaching helped me focus on the work in front of me.	86	14	0	0	0
2. Station teaching increased my academic achievement.	72	14	14	0	0
3. My attention was maintained during the stations	86	14	0	0	0
4. The math was easier to understand during this type of instruction.	72	28	0	0	0
5. I felt supported during my instructional time.	58	28	14	0	0
6. The independent activities were related to what I had learned.	72	28	0	0	0
7. The objectives set for lessons were attainable.	72	14	14	0	0
8. I had adequate time in each station.	58	14	14	14	0
9. There was an understood plan in place for each station.	86	14	0	0	0
10. I was engaged in each station.	100	0	0	0	0

The results of the student satisfaction survey in Table 6 are given in percentages. Scores of 4 or 5 show students agree or strongly agree with the statements. If a student chose 3, they neither agreed or disagreed with the statement or it did not apply. Scores of 1 or 2, show a student disagreed or strongly disagreed with the statement. All the students agreed that station teaching helped them focus on the work in front of them, maintained their attention, and the stations had an understood plan in place, with 86% strongly agreeing in each of these areas. Students also all agreed that math was easier to understand during this type of instruction and the independent activities related to what they had learned, with 72% strongly agreeing. Seventy-two percent of the students strongly agreed that station teaching increased their academic achievement and that the objectives were attainable, while 14% agreed and 14% chose neither agree nor disagree. The only area receiving a mark of disagree was in having adequate time in each station, where 14% disagreed, 14% neither agreed or disagreed, 14% agreed, and 58% strongly agreed. All students, 100%, strongly agreed, that they were engaged in each station. Overall, Table 6 presents positive results from the student satisfaction survey for station teaching with most students agreeing with the statements relating to its' benefits and implementation.

Chapter 5

Discussion

The purpose of this study was to determine the effectiveness of the station teaching model as an intervention to improve the academic achievement and the attention, focus and engagement of students with learning disabilities. The study also considered student satisfaction with the station model of co-teaching by a satisfaction survey.

Findings

The results of the study show the station model of co-teaching to be beneficial for students in the areas of academic achievement and engagement. The data collected and analyzed on the group show an increase in academic achievement from each baseline to intervention phase as well as from intervention to invention phase. There was an increase of 10% in the mean score from baseline phase 2 (73.9%) to intervention phase 2 (83.9%). All the students increased their mean score between these two phases. The gains appear on a slower, yet steady incline with fewer spikes.

In the area of attention and focus, student engagement was up when using the station teaching model as an intervention. By the second phase of the intervention student focus and attention was seen over 50% of the time for all students. The benefit of station teaching in this area is undeniable. Across the board, students strongly agreed that they were engaged in each station during this time. They also felt that it helped them focus and maintained their attention which is in line with the results of the survey.

As with Murawski's (2006) suggestion that co-teaching classrooms use a variety of activities and instruction to benefit a range of learning styles, the model of station teaching used this structure during the intervention. The results of the present study align with Muraski's recommendations as students were more attentive and focused when engaged in these activities, resulting in the added benefit of decreased behavior situations and disruptions. Due to the increase in attention and focus, students likely had more success with learning, information processing, listening comprehension, and retrieval of information during learning opportunities (Farkas et al., 2014). While the study focused on students with learning disabilities, the entire class had less disruptions and higher engagement during the use of the station co-teaching model.

The study also confirms the research of Chitiyo and Brinda (2018) where the ability to focus on individualized needs while working with all students is beneficial and offers higher success for students academically and socially while increasing attention and focus. Students rotating through stations allowed for a mixture of students in small teacher groups, independently working, or small peer groups. The shorter amount of time in each station, extended choices, and clear expectations and directions made this model successful. Along with the research of Chamberlain et al. (2010), the study demonstrates positive student satisfaction with learning through a variety of instructional approaches. The student satisfaction survey results revealed students mostly agree or strongly agree to being satisfied with a station co-teaching model.

While station co-teaching works well with mathematics, the teacher partnership needs to be intact to have the model work with seamless success. Station teaching puts responsibility on both teachers, requiring each of them to deliver content for specially

designed instruction (Friend, 2015). This model of station teaching allowed students to work with teachers independently or in small group while rotating through their stations. Since this method allows for smaller groupings with differentiated instruction both teachers need to be on board for students to receive all the intended instruction. Using the strengths and skills of each teacher, students with learning disabilities can be more successful. "The choice to work as a cooperative unit or independently directly affects the form and extent of learning" (Tannock, 2009, p. 173). Some of the academic achievement results were inconsistent or erratic possibly due to students lacking some needed instruction.

Limitations

The results of this study may have been different with alternate circumstances. The study was negatively affected by a variety of factors, including but not limited to illness, meetings, professional development, days off from school, testing, related services, cooperation, and parent permission following IRB approval. The timeframe of the study was reconstructed after some bumps in the road for a smoother finish to the study.

The most challenging limitation of the study was co-teacher collaboration and cooperation. With one party planning the study along with related activities and instruction, station teaching was a challenge. The students enjoyed the time that it was implemented and had success even though the model was not used with complete fidelity. When only one teacher was available, changes were made to keep the stations rotating. If the study were recreated with different contributors, a different outcome may have been demonstrated.

Time constraints were also a factor. With illness and weather-related delays leading into testing season, lessons were extended into multiple days or shortened to fit the timeframe. These factors impacted the students when it came time for academic achievement collection. Lessons taught out of order or skipped were confusing for the students and researcher, leading to less student success in these areas of instruction.

Implications and Recommendations

The data from the study suggests that the co-teaching model of station teaching has a positive effect on students with learning disabilities. Due to the varied instructional approaches used to meet the needs of the students and the multitude of activities, the benefit to attention and focus shown is highly effective. A practical implication of this research is that students find the station teaching model enjoyable and want to participate. With data backing this up, and their increased engagement in lessons, station teaching seems beneficial for many students. Having the ability to differentiate and create activities geared toward small groups and individual student needs leads to higher success. Station teaching is an effective way to increase engagement, attention and focus of students with learning disabilities.

As far as academic achievement, the gains made by the students during the station teaching model were more consistent and steadier than the baseline results. If the trend continued and students made progress on a continued upward trend, station teaching could be the answer. With the limited time frame of this study and data, it is difficult to tell if the positive trend would continue in the area of academic achievement. Further research would be beneficial in this area. It would be interesting to conduct this study

again next school year with a different group of students, and to extend the use of stations throughout the school year.

In theory, station teaching meets the needs of many students for academics, socialization, and attention and focus. Future research could delve further into these areas and see if the station teaching model would benefit students with and without learning disabilities. Research into both students with learning disabilities and those without learning disabilities would be beneficial. Looking at both populations to determine who would benefit from the model including how it would assist them in jointly working in class is also needed.

Conclusions

Overall, it appears the station teaching model of co-teaching is beneficial to students with learning disabilities to increase their attention and focus. Students found this method positive and the results showed their gains in engagement. This aspect of the station co-teaching model was very encouraging and promising. Academic achievement results of this group are not as clear. Although the students have an upward trajectory of their scores, many factors were still lingering. It appears that, if done with fidelity, station teaching may benefit students in both engagement and academic performance. Co-teaching is a joint venture and for student success, staff needs to work together in the best interests of their students. Without this, the co-teaching model of station teaching cannot be as successful.

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