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The effects of daily yoga practice on the academic engagement and achievement of middle school students in a special education classroom

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**THE EFFECTS OF DAILY YOGA PRACTICE ON THE ACADEMIC
ENGAGEMENT AND ACHIEVEMENT OF MIDDLE SCHOOL STUDENTS IN
A SPECIAL EDUCATION CLASSROOM**

by
Ellen C Sternberg

A Thesis

Submitted to the
Department of Interdisciplinary and Inclusive Education
College of Education
In partial fulfillment of the requirement
For the degree of
Master of Arts in Special Education
at
Rowan University

Thesis Chair: Amy Accardo, Ed. D

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Dedication

I would like to dedicate this manuscript to my wonderful family. Your dedication and passion to the education profession has always inspired me. Thank you for your love and support.

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I would like to express my appreciation to Dr. Accardo for her support throughout the completion of my thesis. Her knowledge and guidance has allowed me to gain valuable skills which I will take with me in my future endeavors. In addition, I would also like to thank the students who participated in this study. Their love of learning and ability to overcome obstacles inspires me every day.

Abstract

Ellen C Sternberg

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2016-2017

Amy Accardo, Ed. D

Master of Arts in Special Education

The purpose of this study was to examine the effect of daily yoga on the academic engagement and achievement of middle school students in a small group special education classroom. A single subject design with four phases was used. Students participated in daily yoga practice followed by a social studies class period. Engagement data was tracked through tallies across all phases. Academic achievement was assessed through vocabulary matching, multiple choice, and map quizzes given weekly. Additionally, students participated in a Likert scale based survey to assess their satisfaction with the daily participation in yoga. Results from this study suggest that daily participation in yoga increased both student engagement and academic achievement. Results also yielded strong student satisfaction with the daily yoga participation.

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Chapter 1

Introduction

Students with disabilities are entitled to a Free and Appropriate Public Education (FAPE) in the Least Restrictive Environment (LRE) in which their needs can be met (Farkas et al., 2012). The LRE is a setting in which students with disabilities are able to receive an education and related services in the regular classroom to the greatest extent possible (Marx et al., 2014). As a result, students are educated in a setting which accommodates their direct needs as reflected in their Individualized Education Plan (IEP). Within these settings, related services may be provided and students are given opportunities to be successful at their own pace (Marx et al., 2014).

Student success and achievement in academic setting is directly related to the amount of time spent engaged in academic tasks (Johns, Crowley, & Guetzloe, 2008). Links have been made between school engagement and academic success in current and future grades (Dotterer & Lowe, 2011). Non-academic activities may provide students with skills and strategies to maintain engagement and create the capacity to participate, grow through effort, and add personal value to academic tasks (Finnan, 2015). One such nonacademic activity is the practice of yoga.

Yoga is a practice originating in India that has gained increasing popularity in modern Western culture (Finnan, 2015). Those who practice yoga desire to be “in the moment” as it is intended to “wake the body and still the mind” (Finnan, 2015). Life force, or prana, travels through the body is controlled through breath and can lead to self-control of the mind (White, 2009). Modern yoga in the West reflects fitness, stress management, healing, and personal growth (White, 2009).

Schools are increasingly using yoga as a non-threatening form of physical fitness and to enhance overall well-being (White, 2009). Yoga has a positive effect on children increasing focus, mental alertness, academic performance, and inner strength (Finnan, 2015). The experience of yoga improves academic performance, readiness to learn, and enthusiasm for learning (Tummers, 2005). Influences on individual abilities during yoga practice may increase self-awareness and result in positive academic outcomes (White, 2009).

Statement of Problem

Students receiving special education services may require interventions to address academic, social, and emotional (Farkas et al., 2012). Teachers have continually ranked off-task and disruptive behaviors as a large concern in the classroom (Collins et al., 2015). Off-task and disruptive behaviors from students not only affect their learning, but that of the students around them in the classroom. It also has an impact on the teacher's stress level and ability to teach effectively (Collins et al., 2015). Negative behaviors and problems in the classroom appear more frequently when students are not engaged (Johns, et al., 2008).

For academically at risk students, such as those in special education programs, academic engagement is a significant indicator of academic achievement (Dotterer & Lowe, 2011). The social, instructional, and organizational context within a school also has a connection to student engagement and academic success (Dotterer & Lowe, 2011). This includes the teacher to student relationship and the comfort level within the learning environment (Dotterer & Lowe, 2011). Academic engagement can be defined as the time a student is spent directly involved in learning (Johns, Crowley, & Guetzloe, 2008). Many students, especially those in special education, learn better by doing. Most

importantly, an increase of time engaged in quality academic tasks (time on task) has been shown to a decrease in disruptive behaviors and promote gains in academic performance (Johns, et al., 2008). It appears that an increase in engagement may not only increase positive academic outcomes, it may increase the overall well-being of adolescents (Dotterer & Lowe, 2011).

Learning in school goes far beyond the confines of a traditional classroom (Finnan, 2015). Non-academic learning occurs more organically and can enhance the traditional academics which follow strict curricula and standards (Finnan, 2015). For this study, non-academic learning will be identified as learning skills to enhance academics, behaviors, focus, perseverance, and relationships. The value of non-academics learning may be strengthened by the cause and effect relationship between activities and academic success. Incorporating non-academic learning by adding yoga practice to the daily routine of students with special needs may provide opportunities for increased engagement and academic success (Finnan, 2015).

More schools are using yoga as an intervention because of the impact it has on student's behavioral and academic functioning, attention, concentration, impulse control, motor coordination, and social skills (Koeing, Buckley-Reen, & Garg, 2012). Yoga is a mind-body practice that has many components such as physical postures, exercises to promote strength, breathing exercises to enhance respiratory function, relaxation to release tension and stress, and mind body awareness to improve attention and regulation skills (Butzler et al., 2014). A special education class may include students with various disabilities, such as, down syndrome, autism spectrum disorder, cerebral palsy, and communication impairments experiencing complex issues that affect their daily lives

(Bowen-Irish, 2007). A goal of yoga in the classroom is to educate the whole child. It has roots in its educational application through its connection to student engagement and achievement (Bowen-Irish, 2007).

Significance of the Study

Research on student engagement within the classroom suggests that increased engagement relates to increase academic achievement (Dotterer & Lowe, 2011; Johns et al., 2008). Daily yoga practice has been found to increase student engagement and achievement in a post yoga academic class (Finnan, 2015). The present study aims to add to the existing research by investigating the use of yoga to enhance student engagement and achievement within a middle school small group special education classroom. Results of this study may provide teachers of small group special education classes with a non-academic activity to implement to enhance engagement and increase achievement within their own schools.

Purpose of Study

The purpose of this study is to examine the effect of daily yoga on the academic engagement and achievement of middle school students in a small group special education classroom. Specifically this study aims to (a) investigate the effect of a daily yoga session on student engagement in a post yoga social studies class, (b) investigate the effects of a daily yoga session on student academic achievement, and (c) evaluate the satisfaction of students in a small group middle school special education class with daily yoga practice.

Research Questions

1. Will participation in daily yoga increase the academic engagement of middle school students in a small group special education social studies classroom?

2. Will participation in daily yoga increase the academic achievement of middle school students in a small group special education social studies classroom?
3. Are students in a small group middle school special education class satisfied with daily yoga practice?

Chapter 2

Literature Review

Educators of students with special education needs have a dual role within the classroom. They need to design lessons and activities that meet the curriculum of the general education classroom while also developing interventions to meet the individual learning and behavior needs of students with disabilities (Vaughn & Swanson, 2015). Extensive research has been conducted identifying effective instructional practices special education educators can implement to increase student outcomes such as engagement and achievement (Vaughn & Swanson, 2015).

Students receiving special education benefit from research-based instructional practices that educators implement into their classrooms. Modifications of content and changes in student performance allow students to express their understanding more clearly throughout academic lessons (Wakeman, Karvonen & Ahumada, 2013). Combined with modified instruction and various academic interventions, students may also need support to stay on task and engaged (Johns et. al, 2008). Such support may lead to a decrease in disruptive behaviors in the classroom, and to gains in student academic performance and achievement (Johns et al., 2008).

Special Education Students - Academic Needs

Legislation requires schools to offer a continuum of services to the student population which it serves (Rueda, Gallego, & Moll, 2000). Schools also place emphasis on implementing research-based practices that enhance achievement for special education students (Vaughn & Swanson, 2015). Rueda, Gallego, and Moll define the least restrictive environment as “an interaction of individual characteristics with the features of specific activity settings, rather than a placement in a physical setting” (2000, p. 77). The

teachers of special education focus on implementing student IEP goals and objectives into the classroom, consider methods to support teachers in achieving these goals, and consider the criteria for success in relation to the individual (Rueda, Gallego, & Moll, 2000).

Within the special education setting, teachers are working to meet the individual needs of all learners (Dotterer & Lowe, 2011). Based on the Individuals with Disabilities Education Act of 1997 and 2004, there is a push for scientifically based educational interventions (Koeing, Buckley-Reen, & Garg, 2012). Programs such as Response to Intervention (RTI) assist teachers in meeting these needs (Vaughn & Swanson, 2015). Research based instruction ensures that regardless of disability, every child has access to the best instruction possible (Vaughn & Swanson, 2015). Vaughn and Swanson state “intensive interventions should become a greater focus of research for students with disabilities who require longer, more intensively delivered instruction that is targeted to specific needs” (2015, p. 20). Specific interventions, targeted to the needs of the student, should be implemented within the context of the classroom (Vaughn & Swanson, 2015).

How teachers approach instructing students with disabilities is important to the student’s academic and social achievement. Jensen (2010) reports that educating students with special needs requires understanding and patience on the part of the teacher. The brain works differently in individuals who have a disability and that difference needs to be addressed in the classroom (Jensen, 2010). Physical activity can increase the ability to produce new connections to the brain and is related to mood, learning, and memory (Jensen, 2010). Teachers need to establish a safe and structured learning environment for children with disabilities and to provide appropriate instruction with relevant learning

activities and high levels of support for students with disabilities that include physical education (Jensen, 2010).

Increasing Student Engagement and Academic Achievement

Student engagement in the classroom can be defined as the time students spend doing meaningful activities (Johns et al., 2008). Research identifies a connection among school engagement, the classroom environment, and academic achievement (Dotterer & Lowe, 2011). According to Johns et al., the greater the level of student engagement in the classroom, the greater the level of academic achievement (2008). Student engagement can be increased through appropriate leveled instructional activities, direct application of material and skills learned, and appropriate time to complete these tasks (Johns et al., 2008). Moreover, academic demands have increased in the last few decades for students with special needs (Wakeman et al., 2013). With the development of the Common Core State Standards and the reauthorization of IDEA, teachers are instructing students with moderate to severe disabilities in content that was previously not taught (Wakeman et al., 2013). Teachers must identify and implement effective instructional methods to ensure student achievement and academic success within this population (Wakeman et al., 2013).

Froiland and Worrell (2016) conducted a study to examine the relationship between intrinsic motivation, engagement, and academic achievement. Froiland and Worrell consider engagement in learning to be an observable measure that represents intrinsic motivation (2016). The researchers hypothesized that student motivation would predict academic engagement (Froiland & Worrell, 2016). Participants included 1,575 high school students with diverse learning needs. Student motivation was gathered through a Likert scale type survey with a 1 - 7 rating. Academic achievement was based

on GPA and grades provided by the district. Results confirmed motivation is positively associated with engagement and achievement (Frioland & Worrell, 2016). Motivation to learn also leads to sustained engagement within the classroom for all students, including those with various special needs (Frioland & Worrell, 2016).

Physical Activity - Student Engagement and Academic Achievement

Luke, Vail, and Ayres (2014) conducted a study to investigate the impact of physical activity on the on task behavior of children. The study included 5 male students who participated in 20 minutes of physical activity followed by a teacher directed group activity (Luke et al., 2014). Data was collected over 20 sessions using an ABAB withdrawal design. Throughout the teacher directed activity, engagement was measured in 15 second time samples. Results showed that all students engaged in physical activity immediately before the teacher directed group work showed an increase in on-task behavior (Luke et al., 2014). Study limitations included a lack of data collected on the rigor of the physical activity prior to the instruction being given (Luke et al., 2014).

Corroborating the findings of Luke, Vail, and Ayres (2014) identifying that physical activity may be linked to increased student engagement and academic achievement, Farkas et al. also identified the connection between increased engagement and success in the classroom (2012). Farkas and colleagues conducted research on a schoolwide positive behavior support intervention in a special education junior high school for students aged 5 - 12. Both staff and students were aware of higher levels of expectations and a ticket reward system for positive behaviors was implemented (2012). At the end of the study, students appropriate behaviors improved with the implementation

of the support intervention which provided teachers more manageable time for engaged learning (2012).

Yoga Practice for Children and Adolescents

Yoga is an ancient practice of the mind, body, and spirit which originated in India and has become popular in the United States (Finnan, 2015). There are eight steps of yoga which are meant to purify the body and mind (Sivananda Yoga Vedanta Center, 2010). These steps are Yama - advocates living a life of nonviolence and truthfulness, Niyama- internal and external actions, Asana - postures, Pranayama - life energy or breath, Pratyahara - sense of withdrawal and preparation for concentration, Dharana - concentration, Dhyana - meditation, and Samadhi - union with the divine (*Yoga: Your home practice companion*, 2010).

“You can have calmness of mind at all times by the practice of yoga. You can have restful sleep. You can have increased energy, vigor, vitality, longevity, and a high standard of health. You can turn out efficient work within a short space of time. You can have success in every walk of life” (*Yoga: Your home practice companion*, 2010, p. 11).

Traditional yogic texts state that the body is made up of five elements, earth, water, fire, air, and space. In order to maintain health, one must constantly adjust to bring all of these into harmony (Sivananda Yoga Vedanta Center, 2010). Each of these concepts is engaged throughout the yoga process. Typically, Western Yoga is based on the relationship between pranayama (mindful breathing) and asanas (postures) (White, 2009). The asanas for children can be identified as standing, seated, balance, twists, supine, forward bends, backbends, and inversions (White, 2009).

Yoga emphasizes individual abilities, rather than a focus on competition which is ideal for children (White, 2009). It is a gentle and non-threatening way to participate in physical activity. Furthermore, yoga has an impact on reducing obesity and improving health problems such as headaches, stomach aches, constipation, back pain, colds, and sinus problems (White, 2009). Yoga has beneficial effects on mood, anxiety, stress, and overall quality of life (Koeing, Buckley-Reen, & Garg, 2012).

Yoga for Children

Many yoga programs for children, such as Yoga for the Special Child, incorporate asanas (postures), pranayama (breathing), and kriya (cleansing) to promote this idea of healthy wellbeing (Davis, 2009). YogaKids celebrates kid's differences and provides an outlet for stress reduction and physical energy (Bowen-Irish, 2007). The Get Ready To Learn Yoga program includes breathing exercises, deep relaxation, and chanting which is geared towards individuals with ASD and other disabilities (Koeing, Buckley-Reen & Garg, 2012). Children's Yoga programs aim to educate the whole child, not to just teach the asanas (Bowen-Irish, 2007).

A focus in yoga for children is compassion and non judgement with a connection to postures and breath (White, 2009). Anecdotal reports have shown that yoga has a calming effect on children (White 2009). Generally, Yoga is done in a special location or space removing extraneous factors. Shoes may be removed and the lights may be low or off (White, 2009). Yoga mats and other symbolic items may be used for relaxation purposes. Ideally, yoga practice for children should be four to six times a week and the duration depends on the developmental levels of the students (White, 2009). As yoga practice continues, children will begin to show self-control through silence during

relaxation time, persistence as they work through the asanas, and self-regulation as they wait their turn to participate or speak in the group (Bowen-Irish, 2007).

Yoga in Schools

There are behavioral benefits to including physical activity into a child's day, as well as, positive outcomes related to cognition (Luke et al., 2014). Williamson (2013) reports that the benefits of including yoga as physical activity within the classroom are learning specific. They include, but are not limited to, better student decision making, improved concentration and retention, and more efficient use of class time (Williamson, 2013). Non-academic learning, such as yoga practice in the classroom, can teach a student three important skills - focus, perseverance, and positive relationships (Finnan, 2015). These skills can be learned through the practice of yoga in the classroom, and then applied to academic areas throughout the school day (Finnan, 2015; Williamson, 2013). The practice of yoga itself can also affect a student's learning. The deep relaxation period at the end of a yoga practice may provide an ideal situation to facilitate academic learning and engagement (Davis, 2009).

Yoga is classified through the National Center for Complementary and Alternative Medicine as a mind-body intervention (Koeing, Buckley-Reen, & Grag, 2012). It is used as a complementary approach to occupational therapy in schools (Koeing, Buckley-Reen, & Grag, 2012). More schools are using yoga as an intervention because of the impact it has to enhance student's behavioral and academic functioning, attention, concentration, impulse control, motor coordination, and social skills (Koeing, Buckley-Reen, & Garg, 2012). Yoga also is directly related to the national standards by the National Association for Sport and Physical Education (Tummers, 2005).

Physical activity in school aged children improves academic achievement (Everhart, Dimon, Stone, Desmon, & Casilio, 2012). Everhart et al., completed a study where elementary and middle school level students with intellectual disabilities participated in 10 minutes of physical activity followed by math or language arts activity (2012). Results indicated that the middle school students' increase academic achievement on most days when the physical activity was present (Everhart et al., 2012). Some students indicated a consistent rise of academic progress throughout the intervention period. Others showed improvement for a majority of the days throughout the intervention period. Following the physical activity, both the elementary and middle school student's teachers reported a larger amount of focus and engagement during the math and language arts activities (Everhart et al., 2012). Everhart et al. concluded that cognitive functioning is strengthened by various kinesthetic programs which improve the academic achievement of students with disabilities (2012).

Moreover, movement type therapies, such as yoga, have shown promise in assisting students with ASD and other disabilities with behavioral problems (Rosenblatt et al., 2011). A study conducted by Rosenblatt et al., had 33 participants in a pretest, final summary, and post testing session. The yoga based intervention was 45 minutes, 10 minutes for breathing techniques, 10 minutes for yoga postures, 20 minutes for music and dance, and 5 minutes for yoga relaxation. The BASC-2 and Aberrant Behavioral Checklist were used to identify students' psychiatric functions and problem behaviors throughout the intervention. No major discrepancies were shown from the pre to posttest assessments in the checklist (Rosenblatt et al., 2011), however a significant result was identified in relation to the core symptoms of autism, specifically the atypicality scale

(odd, asocial, inappropriate behaviors, unusual visual perceptions) (Rosenblatt et al., 2011). This study supports the hypothesis that a sensory based approach such as yoga will have benefit children with ASD (Rosenblatt et al., 2011).

Moreover, Finnan (2015) conducted a study to understand student gains from practicing yoga during the school day. Data was collected over the course of four years, with two years focusing on three particular classrooms and the next two years focusing on two other classrooms. Although class size fluctuated in these elementary classrooms, they never exceeded twenty and the student participants were in second, third, or fourth grade (2015). While the initial study focus was on the implications of yoga instruction on student engagement the researcher also found a connection between student engagement and academic learning. An unexpected finding that emerged from Finnan's study (2015) that was the skills learned while practicing yoga carry over into academic achievement. These skills included helping with frustration and anger in the classroom, and increasing strategies to focus attention on work. Finnan states that, "for many students who were easily distracted knowing that they could focus was an important first step to being engaged in learning" (2015, p. 39). Finnan suggests that the knowledge and skills students gain from yoga practice lead to increased academic outcomes.

Peck, Kehle, Bray, and Theodore (2005) found similar results to Finnan (2015). Peck et al. conducted research on the effectiveness of yoga practice on the on-task behavior of children with special needs, primarily those with attention deficit disorder. Yoga practice was implemented for thirty minutes, twice a week, for three weeks. Results again revealed positive increase in on-task behavior for student participants (Peck et al., 2005).

Furthermore, Marraffa (2015) investigated the effect yoga has on stress relief in school for sixth grade students. Students were involved in yoga or a regular physical education class and assessed for stress levels. Although no major differences in stress levels were identified, students who participated in the yoga program were noted to have more positive coping skills for the stress than students participating in the physical education class (2015). The findings of Marraffa (2015) corroborate the findings of Finnan (2015) and Peck et al. (2005). Finnan and Peck et al., showed the skills being learned in yoga are applied to the areas of academics. These skills include the ability to remain focused (Finnan, 2015; Peck et al., 2005), generalize, and remain engaged throughout the learning process. Students were also able to take the skills of learning in yoga and apply them to on-task behaviors within the academic setting (Finnan, 2015).

Additionally, investigating the impact of yoga on stress, a pilot study was conducted by Butzer and colleagues to examine the effects of a classroom-based yoga intervention on cortisol levels in children (2015). Students from one second grade class and one third grade class received Yoga 4 Classrooms intervention for 10 weeks. The intervention was a 30 minute weekly class and included breathing exercises, physical exercises and postures, meditation techniques, and relaxation (Butzer et al., 2015). Results were based on a collection and analyzation of salivary cortisol and a behavioral observation survey completed by the teachers. Perceived behavior changes varied between the second and third grade classrooms. The second grade teacher noticed significant improvements after the 10 week program. She reported a change in attention span, social interactions, ability to concentrate, ability to stay on task, academic performance, and ability to deal with stress (Butzer et al., 2015). The third grade teacher,

however, perceived little change in the students. These results support prior research from studies indicating yoga may cause an increase in wellbeing, positive behavior, and social and emotional learning in children and adolescents, and also support a need for additional research (Butzer et al., 2015).

The Get Ready To Learn (GRTL) yoga program is used by many occupational therapists and schools across the country. Koeing, Buckley-Reen, and Garg (2012) completed a study on the efficacy of the GRTL program in children with ASD. Students with ASD and other disabilities often struggle to regulate their own behavior in the classroom (Koeing, Buckley-Reen, & Garg, 2012). With participants from an urban public schools, the researchers used a pretest-posttest control group design. Forty eight elementary aged students participated in the study. Teachers implemented the yoga DVD intervention for a total of 16 weeks. Teachers and parents used the Aberrant Behavior Checklist to identify student behaviors before and after yoga. Parents and caregivers indicated less severe behaviors after the yoga program was implemented (Koeing, Buckley-Reen, & Garg, 2012). Koeing et al. (2012), noted that all classrooms showed improvement in off task behaviors and a decrease in teacher redirection following the 16 week program.

Conclusion

This review of the literature summarizes the importance of providing appropriate services to students with disabilities in the classroom. Services must be selected to enhance student academic engagement and achievement throughout the school day. Yoga is a research-based activity that provides students with strategies to enhance self-regulation, attention, impulse control, reduction of anxiety and stress, emotional stability, and overall health and well-being. By creating a positive mind body connection, students

may increase the ability to remain focused and engaged throughout lessons. Engagement in lessons, and time on task, are directly related to academic achievement (Frioland & Worrell, 2016).

This study aims to build on the research of Rosenblatt et al. (2011), Finnan (2015), Peck, Kehle, Bray, & Theodore (2005), and Butzer et al. (2015), and investigate the effectiveness of daily yoga participation on the academic engagement and achievement of middle school students in a small group special education classroom. Specifically this study will (a) investigate the effect of daily yoga session on student engagement in a post yoga social studies class, (b) investigate the effects of a daily yoga session on student academic achievement, and (c) evaluate the satisfaction of students in a small group middle school special education class with daily yoga practice.

Chapter 3

Methodology

Setting

School. This study takes place in a public middle school located in New Jersey. The district has three elementary schools, one middle school, and one regional high school. The middle school serves approximately 600 students in grades six through eight. There are also approximately 58 teachers and support staff within the school. Based on the 2014-2015 data from the New Jersey Performance Report (New Jersey Department of Education, 2014) there were 289 male students and 299 female students in the middle school. The district is diverse with the population being 9.7% Hispanic, 2.6% Black, 78.1% White, 8.7% Asian, and 1.0% being two or more races. English is the primary language spoken within the community, with Spanish also commonly spoken. The typical school day runs for 6 hours and 48 minutes. The school rotates between an A day and B day schedule, including a special Wednesday schedule each week.

Approximately 16% of the student population is classified as having a disability, with 95 students receiving special education services. Most of these students participated in the Partnership for Assessment of Readiness for College and Careers (PARCC) assessments. Out of the valid scores, only 30.5% of the students with disabilities population met the standards for English/Language Arts. Out of valid scores for the Math PARCC assessment, 18.3% of the special education students met the standards.

Classroom. The study was conducted in a language learning disabilities classroom where students participate in small group instruction. There are cabinets across one wall which extends to the ceiling. In the front of the room is a SmartBoard. Also on the front

wall is a whiteboard which the SmartBoard rests in front of. On either side of the whiteboard are two bulletin boards. In the front of the room is a desktop computer which attaches to a FM system and document camera. The FM system is connected to a ceiling mounted speaker in the front and the back of the classroom which are used to play calming music throughout the day. Close to the door is a student work station which consists of student supplies. There are two large teacher desks, one on the side of the room and the other in the back of the room. Language arts, math, science, and social studies are all taught in this classroom so posters and student work on the walls reflect this. In the back of the room there is a small library with three blue beanbags and a small rolling shelf with books. There are eight student desks and chairs each varying in shape and height to meet the students' needs.

Participants

Students. The study was completed during third period when the students learn social studies. The social studies class runs for approximately 60 minutes and is followed by school-wide announcements. There is a special education teacher, paraprofessional, and seven students in the classroom during this time. All seven students have an IEP and are learning in a small group resource room. There are two female students and five male students. They are all reading significantly below grade level and are receiving instruction using a modified curriculum.

Student A is a 14 year old male who is classified as other health impaired. He is diagnosed with cerebral palsy. His family is from Italy, so he speaks Italian at home. He is currently in 8th grade and is receiving special education services. Student A benefits when information is repeated and presented in a multisensory format. He enjoys being

with his peers but struggles to make social interactions and express his thoughts and feelings through language. Student A needs continual prompting and struggles to follow lessons when a large amount of material is being presented.

Student B is a 14 year old male and is in 8th grade. He is receiving special education services through the classification of autism. During academic periods he struggles to follow multistep directions and to make inferences and apply material taught. Student B enjoys being with his peers but often has difficulty communicating effectively in various social situations. He is happy and expresses how much he enjoys school and being with his classmates.

Student C is a 14 year old female who is Hispanic. She speaks Spanish at home with her family and often travels for extended periods of time to visit relatives in another country. She is receiving services under the classification of specific learning disability. Student C has difficulty with applying information learned to larger concepts and skills. She requires great amount of supports throughout lessons to be successful. Student C loves being involved and recently has joined clubs and the musical at the school.

Student D is a 12 year old male who recently moved into district and had previously been in a specialized school in another state. He is classified as autistic and is currently in 7th grade. Student D struggles with aggressive tendencies towards others and loud vocalizations. He is reading on a seventh grade level and is able to retain information and apply it. Student D yearns to connect to his peers but struggles to do so in a positive way.

Student E is a 12 year old female who is in 7th grade. She is Hispanic and comes from a home where only Spanish is spoken. Student E is receiving special education

services under the classification of moderate intellectual disability due to her diagnosis of Down syndrome. Student E needs frequent prompting to follow directions and complete simple daily activities. She is continuing to work on speaking and writing in a complete sentence. Student E is happy, enjoys being with others, learning new things, and dancing whenever she can!

Student F is a 14 year old male who is in 7th grade. He is receiving special education services under the classification of mild intellectual disability. Student F has a cognitive impairment which greatly affects his receptive language and is apparent in his reading and writing. He is very social and is able to socially connect to his typical peers. Student F enjoys learning but needs structured supports to be successful in his academic areas.

Student G is a 13 year old male who is in 7th grade. He is receiving special services under the classification of specific learning disability. Student G is anxious and struggles to understand social cues and appropriate responses. His struggles greatly affect his academics as he often needs special breaks or talks to get through the day. Student G has difficulty in all academic areas and often gets upset if he does not understand material immediately. He does like to make new friends and participate in various elective classes at school. He tries his best when in class and works hard by studying and completing extra work at home.

Table 1

Participant Data

Student	Age	Grade	Classification
Student A	14	8th	Other Health Impaired
Student B	14	8th	Autistic
Student C	14	8th	Specific Learning Disability
Student D	12	7th	Autistic
Student E	12	7th	Moderate Intellectual Disability
Student F	14	7th	Mild Intellectual Disability
Student G	13	7th	Specific Learning Disability

Materials

Yoga session materials. The yoga session was conducted within the classroom described and the students used a yoga mat to participate. Students followed one of the two *Get Ready to Learn* DVDs in each yoga session.

Engagement materials. In order to identify student engagement throughout the instructional period, a student engagement chart and vibrating timer were utilized. The student engagement chart was created by the teacher/researcher and includes space for tally marks over six intervals, one interval for every five minutes to allow for 30 minutes of data collection. See Figure 1.

Student Engagement / On Task Behavior

Date: _____

Intervals	1	2	3	4	5	6
Student A						
Student B						
Student C						
Student D						
Student E						
Student F						
Student G						

Figure 1. Student engagement chart

Academic achievement. Instruction was provided with appropriate leveled readings and supplemental activities. A map, multiple choice questions, and vocabulary matching worksheet were used for weekly assessments.

Satisfaction scale materials. A student satisfaction survey was developed to assess social validity of the yoga intervention. The survey contains three statements - I enjoyed participating in yoga today; I feel prepared for social studies class after participating in yoga; I found that yoga helped me stay focused and work hard in other classes. The survey itself is based on a Likert scale with a 1-5 rating for each question. The response ranges from strongly disagree to strongly agree. See Figure 2.

Daily Yoga Participation Survey

	Strongly Disagree 1	Disagree 2	Undecided 3	Agree 4	Strongly Agree 5
1. I enjoyed participating in Yoga today					
2. I feel prepared for Social Studies class after participating in Yoga					
3. I found that Yoga helped me stay focused and work hard in other classes					

Figure 2. Daily yoga participation survey

Research Design

For this study a single subject ABAB design was used. During Phase A baseline data was collected for one week. Data was collected on the two dependent variables of student engagement and student academic achievement. Student engagement data was collected by the teacher using an engagement tally chart shown in Figure 1. Student academic achievement data was collected based on student grades on map activities, multiple choice questions, and vocabulary matching assessments.

Before Phase B, students were taught what it means to be engaged throughout a lesson. Students were specifically instructed to be following along on the board or on their paper when reading as a group, to not making comments about other students or unrelated

topics, and to actively participating in the activities at hand by writing, drawing, coloring, and adding verbally to the discussion.

During Phase B students participated in the yoga session intervention for two weeks. After each daily yoga session, students again participated in a typical social studies lesson. During this time the students again completed a map, multiple choice questions, and vocabulary matching assignment. The teacher collected student engagement data with the engagement tally chart.

The process remained the same for the next Phase A, which lasted for one week. The process also remained the same for the second Phase B.

Procedures

The baseline data of engagement and academic achievement were collected during the first week. The teacher collected data of engagement on the engagement tally chart for five minute intervals allowing for the 30 minutes of instruction. Students completed the three academic assessments which were graded and the grades recorded. One day the students would complete a portion of a map including countries, cities, or geographic features. Another day the students would answer five multiple choice questions based on the topic they were learning. Finally, the students would complete a vocabulary matching page based on vocabulary words in the unit they were studying.

During the intervention phases weeks two and three, students participated in yoga sessions at the start of class. They followed either Floor 1 or Floor 2 of the *Get Ready to Learn* yoga DVD. On Friday, students participated in three short yoga videos promoted through a website titled GoNoodle. After the DVD or videos, students listened to relaxing music found on the website youtube.com while participating in shavasana for five

minutes. The teacher collected data on student engagement for the following 30 minutes using the student engagement chart. Throughout the week, three academic assessments were given and the grades recorded. At the end of the week students were given a survey to determine if they were satisfied with the intervention.

Week four the intervention was removed and Phase A was repeated. For the final two weeks, week five and six, Phase B was repeated and students resumed participation in the yoga intervention.

Data Analysis

After engagement data was collected, it was put into an excel spreadsheet. The information was organized into baseline and intervention data. Grades from the three academic assessments were put into the teacher grade book as earned points out of total points for all of the assignments. The grades were also placed into a spreadsheet. The satisfaction survey was taken each week that the intervention was implemented and the data collected was also put into a spreadsheet. The engagement and academic achievement data was graphed, and the graphs visually analyzed for trends. Student social validity data was placed into a table for analysis.

Chapter 4

Results

This study used a single subject ABAB design to evaluate the effect of daily yoga on the academic engagement and achievement of middle school students in a small group special education classroom. The research questions were as follows:

1. Will participation in daily yoga increase the academic engagement of middle school students in a small group special education social studies classroom?
2. Will participation in daily yoga increase the academic achievement of middle school students in a small group special education social studies classroom?
3. Are students in a small group middle school special education class satisfied with daily yoga practice?

The students' academic assessment scores were obtained from weekly assessments including a vocabulary, multiple choice, and map quiz. Data was collected on student engagement through a tally sheet with six intervals, each interval being five minutes long. Surveys were conducted after each yoga session during both intervention phases.

Academic Achievement Group Results

Table 2 shows the mean of the academic achievement assessments for all participants across all phases. Each assessment given was out of 5 possible points. Five assessments were given during both Baseline 1 and Baseline 2. During both Intervention 1 and Intervention 2, three assessments a week were given. Each intervention phase lasted two weeks, so there were six assessments given during this time. The mean score for each participant was calculated for each phase.

The mean score at Baseline 1 for the group was 3.74. During Intervention 1, the mean for the group increased to 4.12. Baseline 2 showed a decrease in the mean score to 2.21. When the intervention was implemented for the second time, the mean score increased again. The mean score during Intervention 2 was 3.93.

Table 2

Mean Academic Achievement Across All Phases

Students	Baseline 1	Intervention 1	Baseline 2	Intervention 2
Student A	4.40	4.33	3.00	4.33
Student B	2.80	2.75	1.70	2.83
Student C	4.40	4.00	2.20	5.00
Student D	4.80	5.00	2.80	5.00
Student E	3.80	3.17	1.70	3.17
Student F	2.60	4.75	1.90	3.50
Student G	3.40	4.83	2.20	3.67

Engagement Group Results

Table 3 shows the mean of time engaged during the social studies instructional period for all participants involved. Tallies were taken at six intervals throughout a thirty minute time frame. Data listed in the table expresses the mean number of minutes engaged out of thirty. The mean for the time engaged for the group during Baseline 1 was 18.14 minutes. During Intervention 1, the mean time engaged for the group was 25.29 minutes. The group mean then decreased to 17.29 minutes when the intervention was

removed for Baseline 2. Intervention 2 showed an increase of engagement for almost all participants. The group mean for Intervention 2 was 26.43 minutes.

Table 3

Mean Academic Engagement Across All Phases

Student	Baseline 1	Intervention 1	Baseline 2	Intervention 2
Student A	23.0	28.5	23.0	29.5
Student B	13.0	16.5	13.0	21.0
Student C	20.0	29.0	26.0	29.0
Student D	10.0	25.0	13.0	25.0
Student E	16.0	27.0	20.0	24.0
Student F	23.0	27.5	14.0	28.0
Student G	22.0	23.5	12.0	28.5

Individual Results

Figure 3 illustrates the data collected across all phases for the academic achievement of Student A. The Baseline 1 mean score was 4.40. The student decreased to 4.33 during Intervention 1. With removal of the intervention, Student A decreased his mean score again to 3.00. For Intervention 2, his mean academic achievement score increased to 4.33.

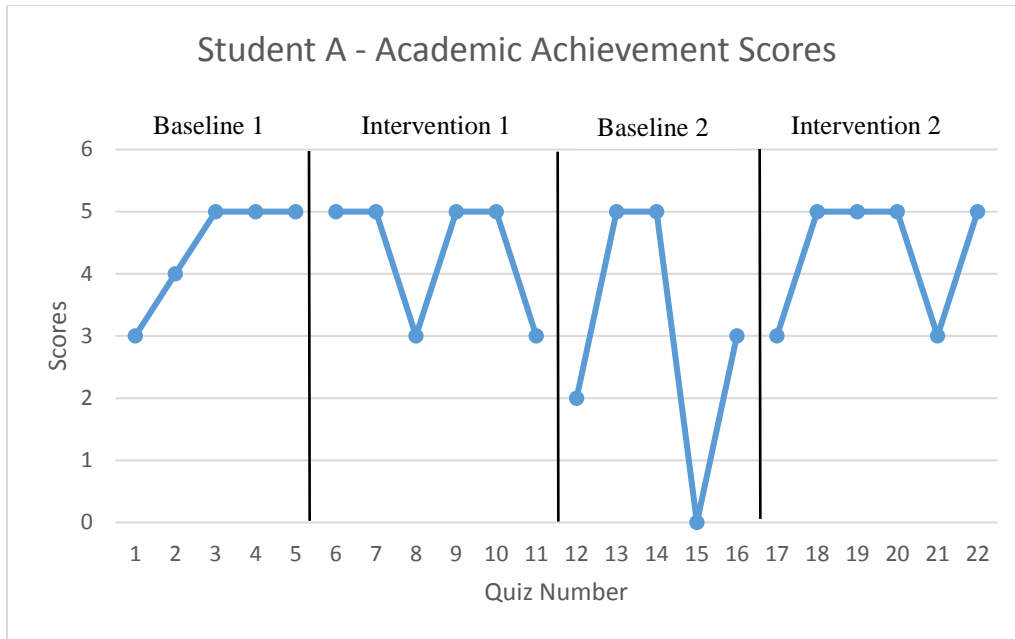


Figure 3. Student A academic achievement scores

Figure 4 illustrates the data collected across phases for the time engaged for Student A. During Baseline 1, Student A was engaged for a mean of 23 minutes. This increased to a mean of 28.5 minutes during Intervention 1. When the intervention was removed for Baseline 2, Student A decreased his engagement to 23 minutes. Intervention 2 showed an increase in engagement for Student A to 29.5 minutes.

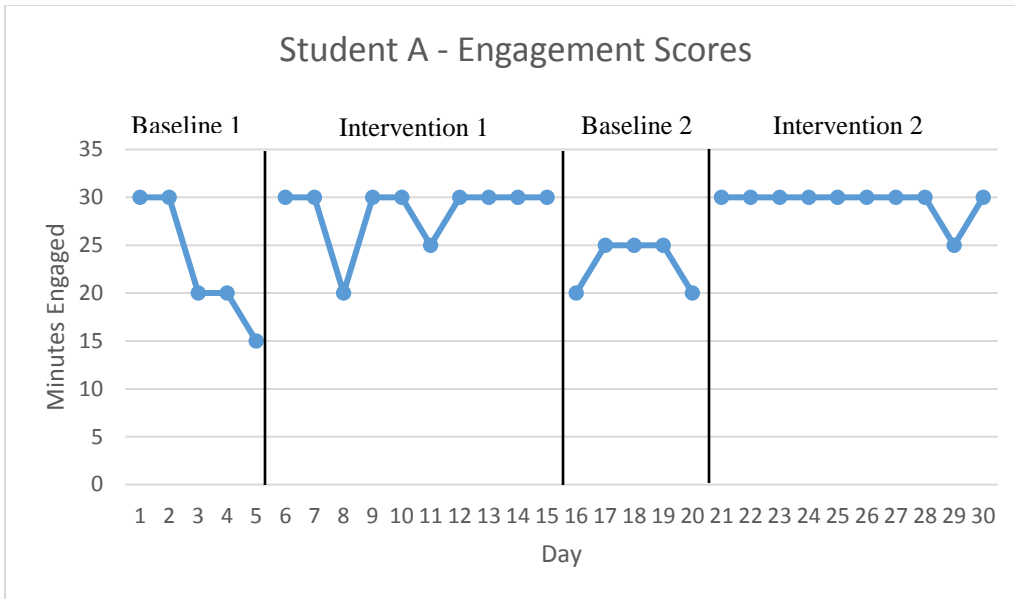


Figure 4. Student A engagement scores

In Figure 5, academic achievement data collected for Student B is shown across all phases. The mean score for Baseline 1 was 2.8. During Intervention 1, the first phase of the intervention, Student B decreased his mean score to 2.75. During Baseline 2, the student decreased his score to 1.7. For Intervention 2, his mean academic achievement score increased to 2.83.

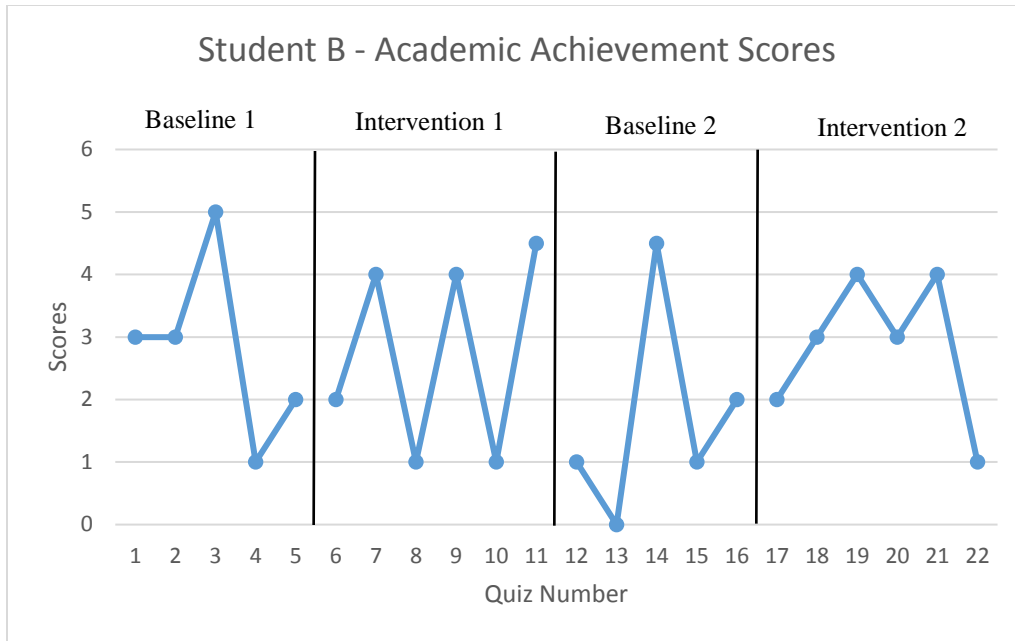


Figure 5. Student B academic achievement scores

Figure 6 illustrates the data collected on time engaged for Student B across all phases. The mean pre-intervention data for Baseline 1 shows Student B engaged for 13 minutes. The intervention was implemented and Student B increased his engagement to 16.5 minutes during Intervention 1. During Baseline 2, Student B decreased the engagement to a mean of 13 minutes. Intervention 2 showed an increase in engagement for Student B to 21 minutes.

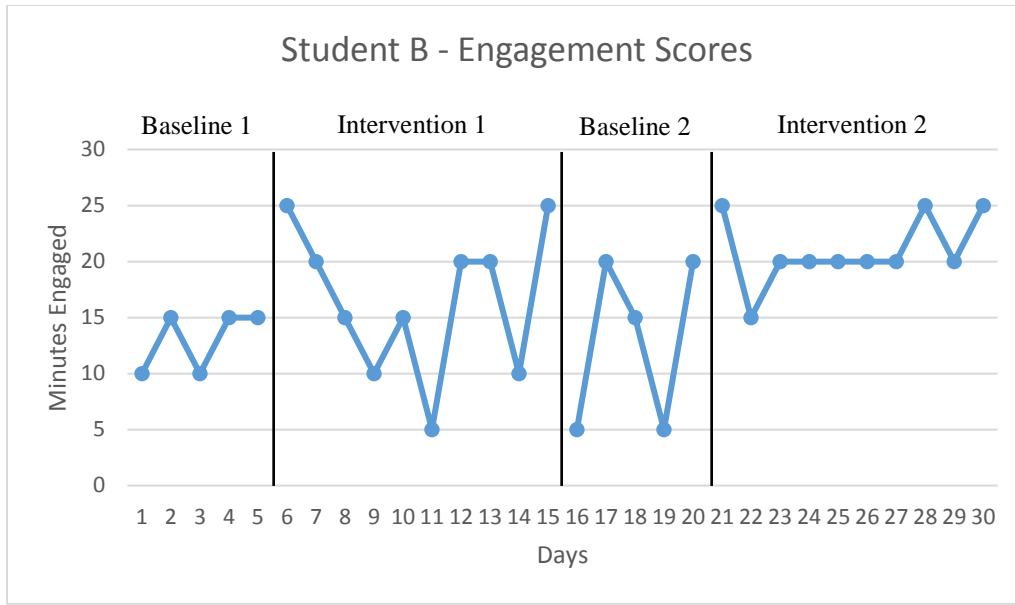


Figure 6. Student B engagement scores

Figure 7 shows the mean academic achievement for Student C across all phases. The mean score during Baseline 1 was 4.4. When the intervention was implemented during Intervention 1, Student C's mean score was 4. During Baseline 2, her score decreased to a mean of 2.2. For Intervention 2, her mean academic achievement score increased to 5.

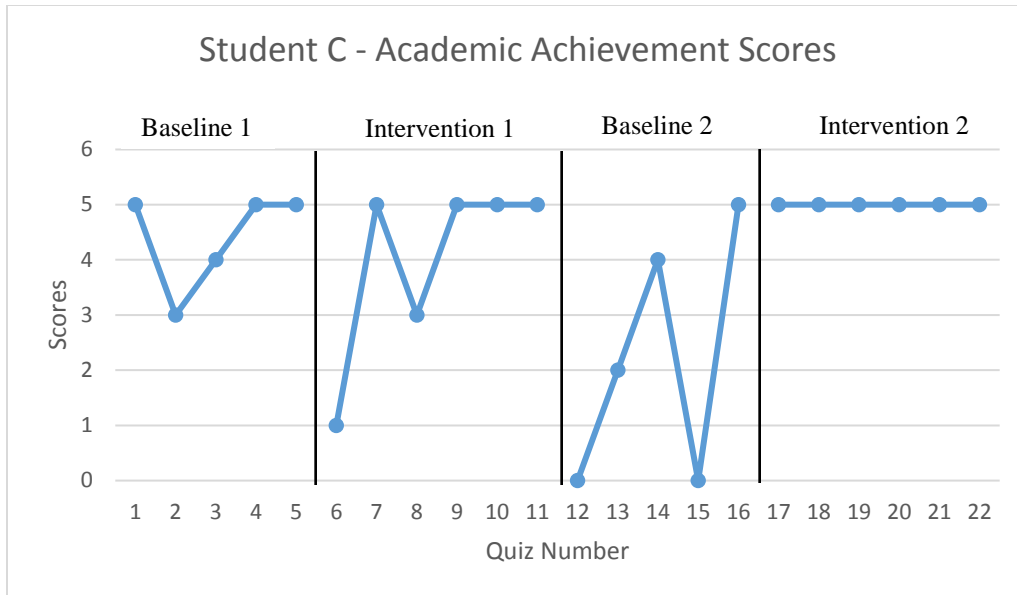


Figure 7. Student C academic achievement scores

Figure 8 illustrates the time engaged for Student C across all phases. The mean pre-intervention data for Baseline 1 shows Student C engaged for a mean time of 20 minutes. The intervention was implemented and during Intervention 1, the student was engaged for a mean of 29 minutes. When the intervention was removed for Baseline 2, Student C was engaged for a mean time of 26 minutes. Intervention 2 showed an increase in engagement for Student C to 29 minutes.

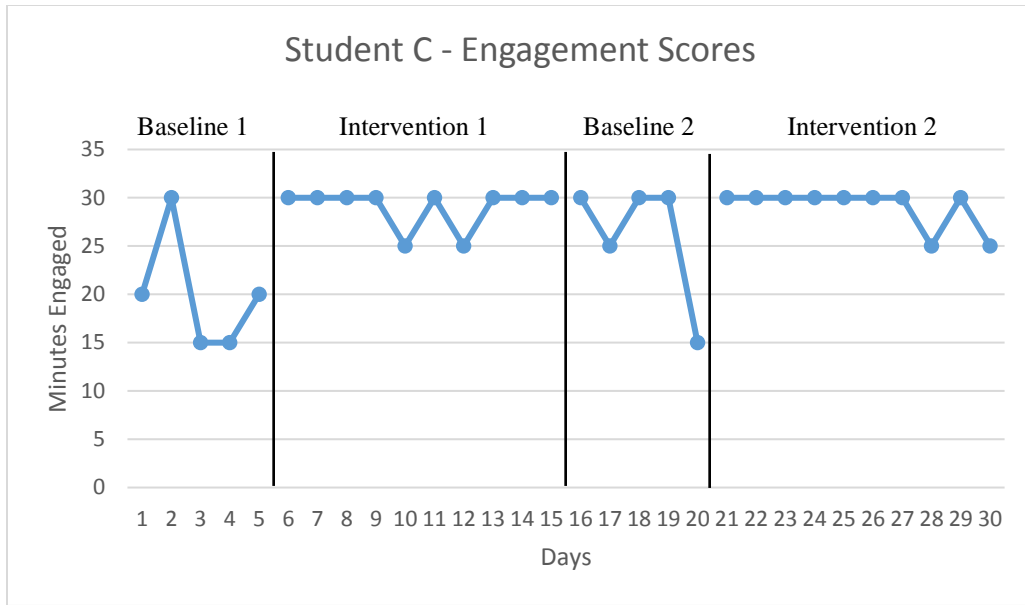


Figure 8. Student C engagement scores

Figure 9 illustrates the mean data collected on academic achievement for Student D across all phases. During Baseline 1, Student D had a mean score of 4.8. The mean score during Intervention 1 increase for Student F to 5. Baseline 2 shows that the mean score decreased to 2.8. For Intervention 2, the mean academic achievement score increased to 5 again.

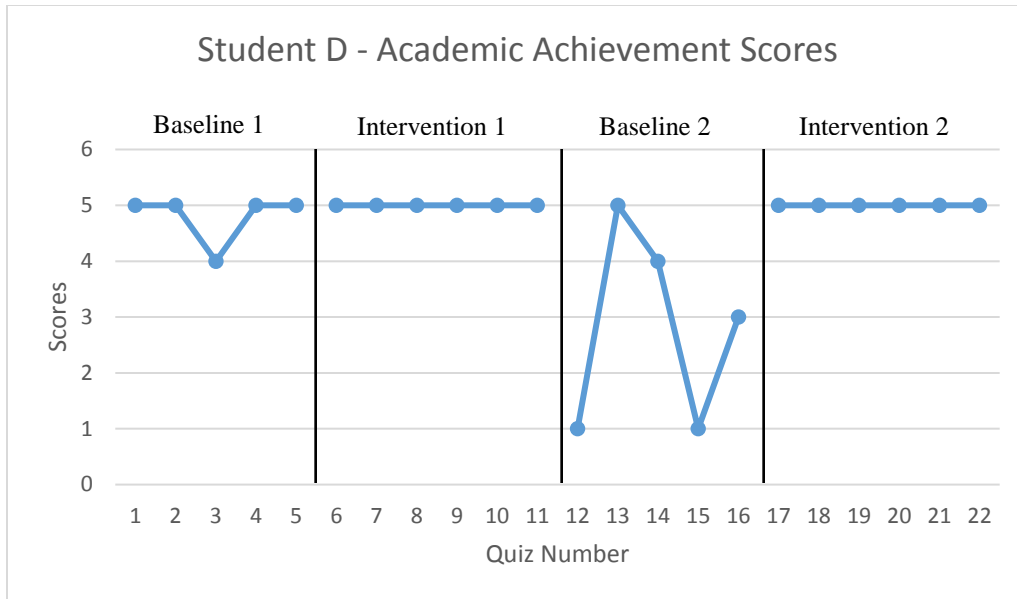


Figure 9. Student D academic achievement scores

Figure 10 illustrated data collected on time engaged for Student D across all phases. The data for Baseline 1 shows Student D engaged for a mean time of 10 minutes. When the intervention was implemented, the student then increased his mean time engaged to 25 minutes. The intervention was then removed during Baseline 2 and the student decreased his engagement to 13 minutes. Intervention 2 showed an increase in engagement for Student D to 25 minutes.

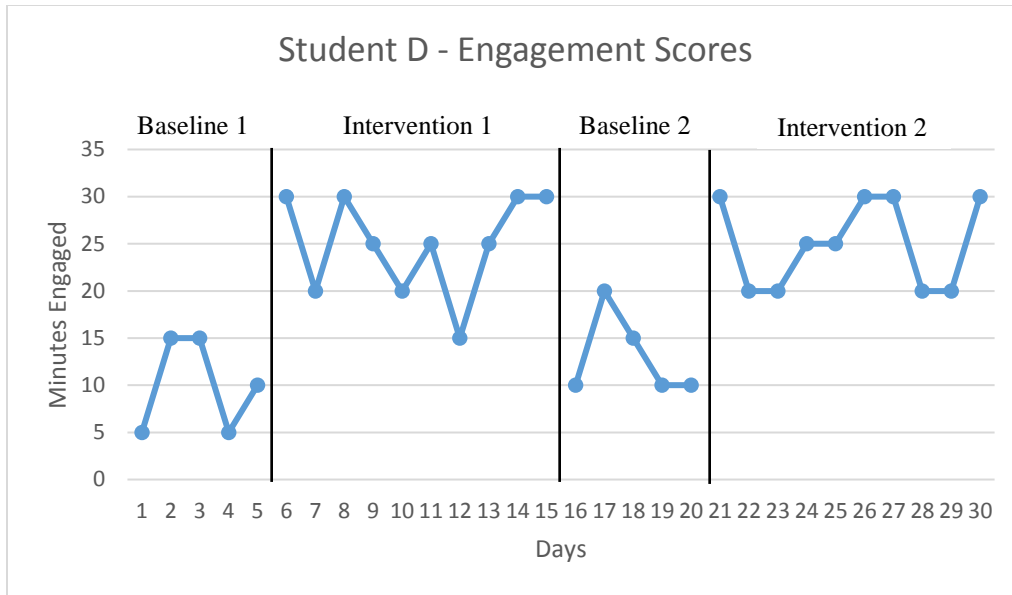


Figure 10. Student D engagement scores

In Figure 11, the mean academic achievement data collection for Student E is shown across all phases. During Baseline 1, Student E has a mean score of 3.8. The mean score decreased during Intervention 1 to 3.17. During Baseline 2, Student E decreased her mean score to 1.7. For Intervention 2, her mean academic achievement score increased to 3.17.

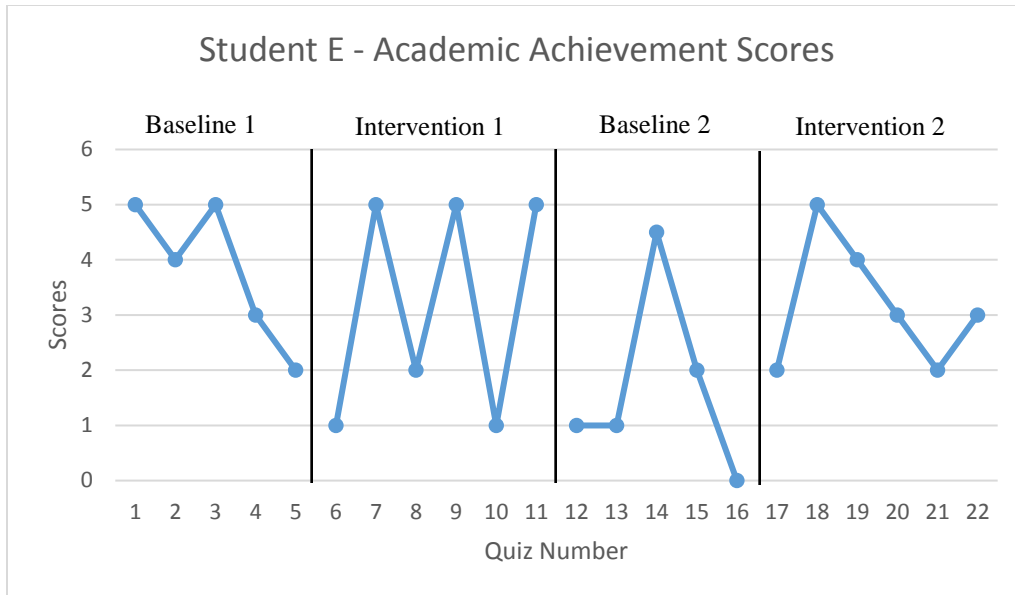


Figure 11. Student E academic achievement scores

Figure 12 illustrates data collected for Student E on the mean time engaged across all phases. Data collected during Baseline 1 shows Student E engaged for a mean of 16 minutes. The mean time increased to 27 minutes during Intervention 1. Mean time engaged then decreased to 20 minutes for Student E when the intervention was removed during Baseline 2. Intervention 2 shows an increase in engagement for Student E to 24 minutes.

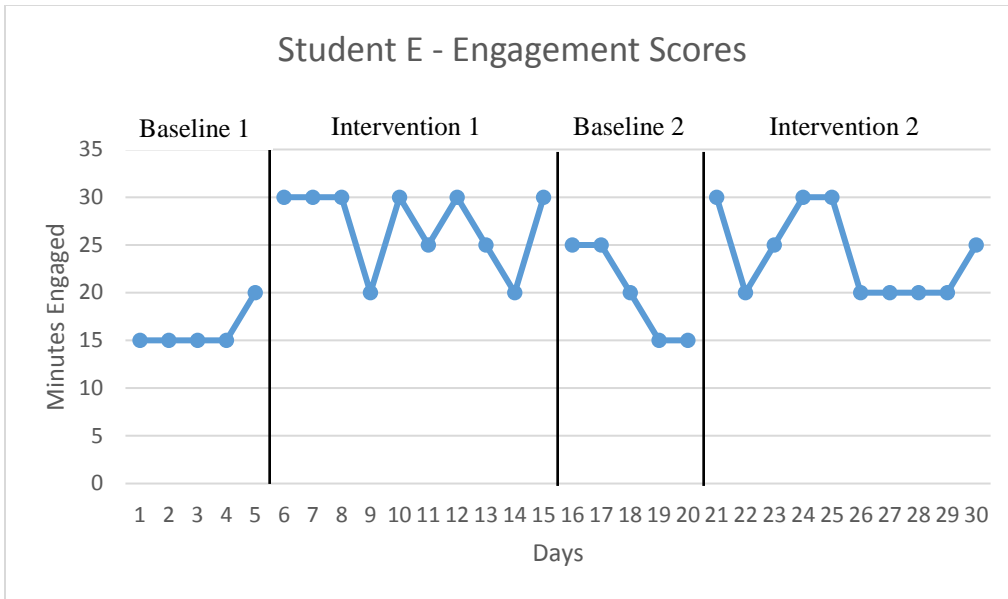


Figure 12. Student E engagement scores

Figure 13 illustrates the mean academic achievement for Student F across all phases. Baseline 1 shows Student F had a mean score of 2.6. During Intervention 1, the mean score increased to 4.75. The mean score then decreased during Baseline 2 to 1.9. For Intervention 2, the mean academic achievement score increased to 3.5.

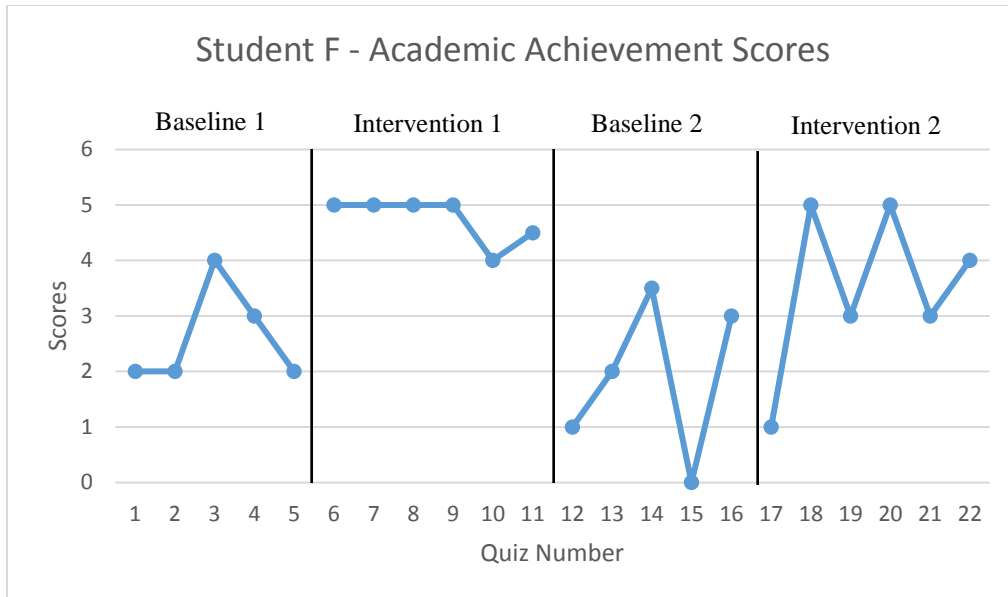


Figure 13. Student F academic achievement scores

Figure 14, represents the mean time engaged across all phases for Student F. Data collected during Baseline 1 shows Student F engaged for a mean time of 23 minutes. Student F increased his mean engagement time to 27.5 minutes during Intervention 1. When the intervention was removed for Baseline 2, Student F was engaged for a mean of 14 minutes. Intervention 2 showed an increase in engagement for Student F to 28 minutes.

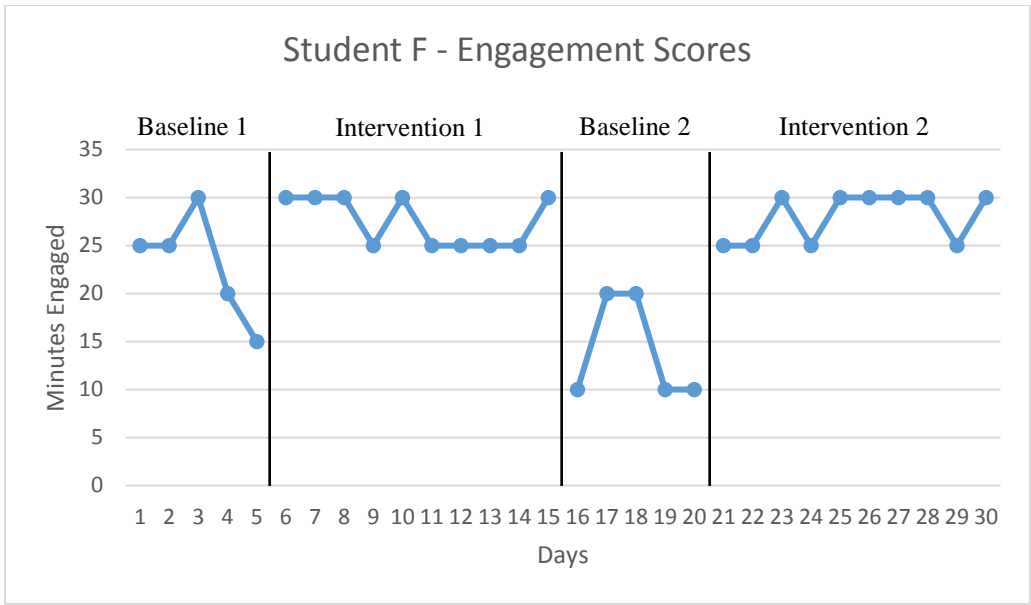


Figure 14. Student F engagement scores

Figure 15 illustrates the mean academic achievement for Student G across all phases. Baseline 1 shows the mean score was 3.4. During Intervention 1, Student G increased his mean score to 4.83. Baseline 2 shows a decrease to 2.2 for the mean academic assessment score. For Intervention 2, his mean academic achievement score increased to 3.67.

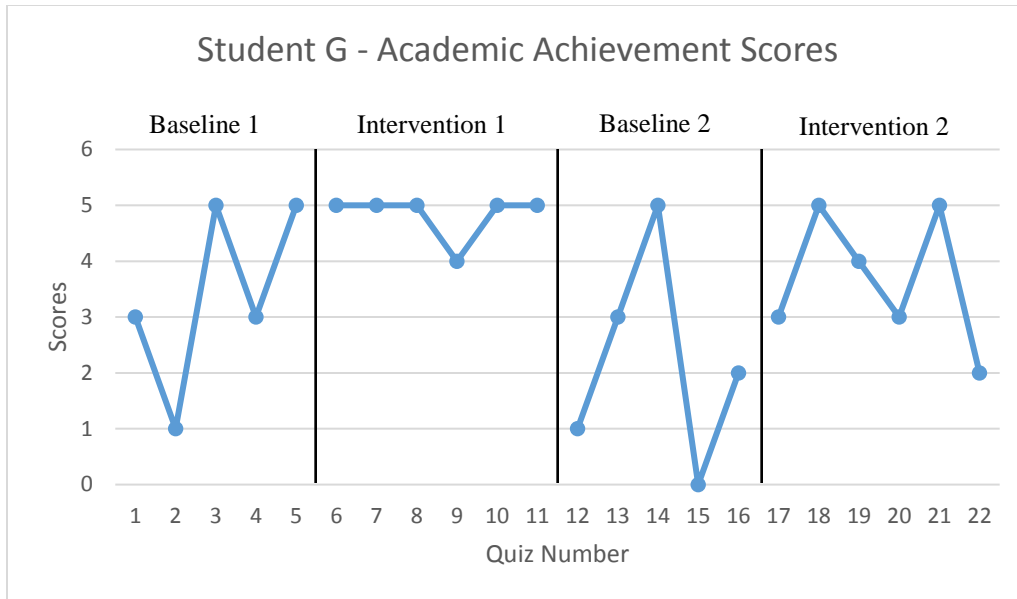


Figure 15. Student G academic achievement scores

Figure 16 shows the data collected for Student G on the mean time engaged across all phases. Baseline 1 shows Student G was engaged for a mean time of 22 minutes. The intervention was implemented and during Intervention 1, Student G increased his mean time engaged to 23.5 minutes. When the intervention was removed for Baseline 2, the student decreased his engagement to a mean time of 12 minutes. Intervention 2 showed an increase in engagement for Student G to a mean of 28.5 minutes.

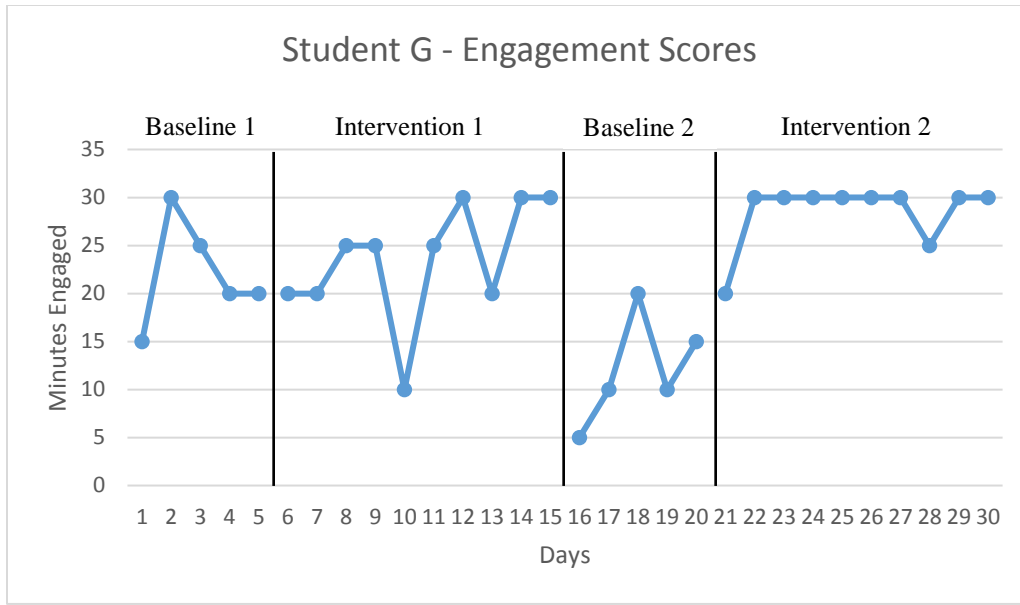


Figure 16. Student G engagement scores

Survey Results

At the end of each daily participation in yoga, the students completed a Likert scale type survey. There were three questions – (1) I enjoyed participating in yoga today, (2) I feel prepared for social studies class after participating in yoga, and (3) I found that yoga helped me stay focused and work hard in other classes. The answers ranged from 5 “strongly agree”, 4 “agree”, 3 “undecided”, 2 “disagree”, and 1 “strongly disagree”.

Table 4 shows the mean answers calculated. The answers were tallied and the mean was determined for each question at both intervention phases.

Students reported agreement or strong agreement to participation in Intervention 1 (Range 4.10 – 4.17). See Table 4. For question number one, I enjoyed participating in yoga today, the mean was 4.10. For question number two, I feel prepared for social studies class after participating in yoga, the mean was 4.14. Question number three, I

found that yoga helped me stay focused and work hard in other classes, scored the highest with 4.17.

During Intervention 2, student satisfaction continued as reflected by increased scores across all questions (Range of 4.30 to 4.56). Question one had the largest increase with a mean score of 4.56. Question two had a mean score of 4.34. Question three increased to a mean score to 4.30.

Table 4

Mean Response to Daily Yoga Participation Survey

Survey Questions	Intervention 1	Intervention 2
I enjoyed participating in Yoga today	4.10	4.56
I feel prepared for Social Studies class after participating in Yoga	4.14	4.34
I found that Yoga helped me stay focused and work hard in other classes	4.17	4.30

Note. Mean score out of 5 points

Chapter 5

Discussion

The purpose of this study was to examine the effect of daily yoga on the academic engagement and achievement of middle school students in a small group special education classroom. This study utilized an ABAB design to investigate the effects of daily yoga participation on seven special education student's academic engagement and achievement. Specifically this study aimed to investigate the effect of a daily yoga session on student engagement in a post yoga social studies class, investigate the effects of a daily yoga session on student academic achievement, and evaluate the satisfaction of students in a small group middle school special education class with daily yoga practice.

The research questions were as follows:

1. Will participation in daily yoga increase the academic engagement of middle school students in a small group special education social studies classroom?
2. Will participation in daily yoga increase the academic achievement of middle school students in a small group special education social studies classroom?
3. Are students in a small group middle school special education class satisfied with daily yoga practice?

Findings

The results showed that all participants increased engagement between the baseline and intervention phases. The group mean for Baseline 1 was 18.14 minutes. The group mean for Intervention 2 was 26.43 minutes. This is an increase of 8.29 minutes for the group mean. All participants showed an increase between Baseline 1 and Intervention 1. There was a group mean increase of 7.15 minutes between the baseline and

intervention. All participants also showed an increase between Baseline 2 and Intervention 2. There was a group mean increase of 9.14 minutes between the second baseline and intervention data collection.

Upon review of individual data collected on engagement, Student D had the largest increase from Baseline 1 to Intervention 2. His mean time engaged for Baseline 1 was 10 minutes and his mean time engaged for Intervention 2 was 25 minutes. This showed a 15 minute increase in engagement. Student C also had a high increase in engagement from Baseline 1 to Intervention 2 with an increase of 9 minutes. Both Student B and Student E had an increase of 8 minutes. Student A and Student G increased their mean time engaged by 6.5 minutes from Baseline 1 to Intervention 2. Lastly, Student F has the smallest increase of 5 minutes between baseline and intervention.

The results of the study show that all students increased their academic achievement from the baseline to the intervention. Initial data collected for Baseline 1 indicates a group mean of 3.74 and the group mean for Intervention 2 was 3.93. This was an increase of 0.19. All participants showed an increase in academic achievement from Baseline 2 to Intervention 2. The group mean for Baseline 2 was 2.21 and the group mean for Intervention 2 was 3.93. This showed a group mean increase of 1.72 from Baseline 2 to Intervention 2.

Individual participant data was reviewed to show that three of the students showed an increase in academic achievement both times the intervention was implemented. Student D, Student F, and Student G all had a higher academic achievement mean during the intervention phases than during the baseline. Some students

scored very high on the first baseline data which left little room for growth. Student A, Student C, and Student D all scored above a 4.00 on the initial baseline data collection. Student C showed the largest increase of academic achievement from Baseline 2 to Intervention 2 with a mean growth of 2.8.

Lastly, after examining the student satisfaction of daily yoga practice, results suggest students were satisfied. With the highest score a 5, showing strong agreement, and the lowest a 1, showing strong disagreement, students were given surveys with three questions during both intervention phases. All students agreed that they enjoyed participating in yoga that day with a mean score for both interventions a 4.33. Students were also in strong agreement that they felt prepared for social studies class after yoga with a mean score from both intervention phases a 4.24. Finally, student felt they were in agreement with the ability for yoga to help them stay focused and work hard in other classes with a mean score of 2.24.

Results from Luke, Vail, and Ayres suggest that participants engaging in physical activity prior to group activity is effective in increasing every participant's on-task behavior (2014). Similarly, Farkas and colleagues conducted a study on a school wide behavior support system which reflected high levels of academic achievement, appropriate behaviors, and a positive shift in culture (2012). Results from the present study corroborate the findings of Luke, Vail, and Ayres (2014), and Farkas and colleagues (2012), and show an increase in student engagement post physical activity and a positive learning environment with high levels of success.

In addition, Johns and colleagues (2008) and Dotterer and Lowe (2011) identified a connection between student engagement and academic achievement. Dotterer and Lowe

suggest engagement is an important component in school because of its relationship to achievement. Findings of the present study align with the results of Johns et al. and Dotterer and Lowe yielding similar results of increased academic achievement and increased engagement in the classroom.

Furthermore, the results of the survey portion of this study support the findings of Davis (2009), Bowen-Irish (2007), and White (2009), as the students positive response to participating in yoga reflects the studies previously conducted. White (2009) emphasizes the calming effect yoga has on students and its ability to be adapted and appropriate for all developmental levels of individuals. Studies conducted on yoga programs such as YogaKids, Yoga for the Special Child, and Get Ready To Learn, show yoga's ability to educate the whole child and institute self- regulation and stress reduction into the classroom (Davis, 2009; Bowen-Irish, 2007; White 2009). In the present study, students reported that the yoga practice had a calming effect in the classroom.

Limitations

Time was a major limitation to this study. This study was conducted as a master's thesis during the spring semester. Phase A, the baseline, was limited to one week and Phase B, the intervention, was limited to two weeks as a result of Rowan University IRB approval and the end of the semester. This study would have yielded stronger findings if it was able to be expanded to an ABABAB design or each phase was extended to two or more weeks.

Time of day was also a limitation to the study. The study was conducted during period three, which is social studies. This means yoga started at 9:40 and the class ran until 10:40. On certain days, announcements were made earlier than 10:40 which effected

the last interval of engagement data collection. At times, the students were late to class so this affected the yoga practice. On Wednesdays the students participated in an advisory class before they go to social studies where they would participate in the study. This class would often make them upset, aggressive, or overwhelmed coming into the social studies classroom. Time needed to be used to calm students prior to participating in the yoga practice.

Additionally, design of the study was a limitation. The study was based off of a 60 minute period where the students would participate in yoga practice for 30 minutes and then participate in a social studies lesson for the remaining 30 minutes. This meant that each minute during this class period was important. Many different distractions and interruptions happened during this time as well. These included fire drills, a 'lockdown with instruction', and announcements where students engagement in the lesson or participation in an academic assessment were then slightly altered. Also, in order to assess academic achievement, three small assessments were given each week. For some of the students it was the first time they were participating in a formal assessment such as the vocabulary matching, multiple choice, and map quiz independently. The participants who were less familiar with how to complete the assessment had an added worry and confusion when taking each of these assessments.

Personal events in the student's life were also a limitation when the study was being conducted. One student was adjusting to a new behavior plan being implemented across his schedule so this greatly affected his engagement during lessons. Another student was going through a loss in his family so he was not comfortable participating in daily yoga practice which was reflected in his study survey. Additionally, another student

was transitioning to a new morning routine of taking the bus to school. He was taking a longer amount of time to be fully engaged in his classes and needed continual prompting. It may have been better to extend the study so all students felt comfortable each day and ready to participate in the yoga practice and social studies class.

Finally, sample size was also a limitation to this study. The single subject design study was conducted with seven students. Data may not be able to be generalized beyond the seven students.

Implications and Recommendations

Although this study has limitations, it shows the positive effects of daily yoga practice on student engagement and academic achievement. Implication for practice included the recommendation for educators to appropriately set time in the day for yoga practice. Teachers should also be allotted professional development for yoga training to ensure the success in the classroom. Teachers should be aware that yoga should be used in conjunction with positive learning environments and appropriately leveled lessons designed for individual needs.

As a result of the findings, special education teachers may consider using yoga in the classroom to increase student well-being and success. This study's findings add to the current research on yoga in school settings, noting research is still needed to meet the needs of the teacher and the students in the classroom. Additional research is warranted to determine best practice when providing students with yoga practice to increase performance.

Implications for future research involving yoga include recommendations for a larger population to identify the effects of daily yoga practice to yield stronger results.

Researchers should also identify appropriate assessments to provide participants when determining academic achievement. Researchers may also consider increasing the duration of each phase of the study to ensure stronger correlation between yoga practice, engagement, and academic achievement.

Conclusion

The results of this study are encouraging. After examination of the results, it can be determined that daily yoga participation assists in maintaining high levels of engagement and academic achievement in students. Ensuring students are aware of the expectations for positive classroom engagement and an understanding of how to participate in academic assessments is vital to the success of the intervention.

Participants in this study showed increased engagement during the second intervention over the initial baseline data collection. Due to varying participant scores, it is inconclusive if daily yoga had a strong effect on student academic achievement. Data did show high scores in the final intervention phase for all participants for academic achievement.

This study suggests that further research with a larger sample size and extended period of intervention is justified. With an appropriate time of day to participate, there is a possibility that students will increase their engagement and academic achievement with daily yoga participation.

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