

The Impact of Movement on Literacy Development in the Kindergarten Classroom

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Abstract

In an ever-demanding society, state standards and expectations of students, as well as teachers, continue to increase at grade levels across the board. This demands professionals to put appropriate, effective research-based interventions in place that will benefit all students regardless of skill level. Finding an effective intervention and/or program can be difficult when incorporating a large range of development at the kindergarten level. Students enter into kindergarten with varying experiences: ranging from no prior preschool, to a limited daycare environment, to an abundance of preschool opportunities. This is not to exclude home environment experiences. Children may come from homes that are rich with literature, while others may not have had opportunities to explore and enjoy good books. Because students at the kindergarten level respond enthusiastically to motor movement throughout the day, it would be logical that academics could be fostered through these opportunities. It would also benefit all students, regardless of their age, gender, or developmental level. Overall the study has shown that movement has an impact on students' literacy development and is not contingent on gender or birth date.

Overview

Students in classrooms today can appear very unique in their individual development with reading skills. In addition, students vary in ability with fine motor control, gross motor control, and spatial awareness. With these realizations, the need for movement is apparent. Many have questioned if movement is appropriate and supported in the elementary classroom. The limited research into the benefits suggests the need for further investigation of kinesthetic teaching approaches in inclusive classrooms and the potential benefits to all students (Skoning, 2008). Stacey N. Skoning states that "Benefits to using creative movement and dance as teaching tools in the classroom include increased students understanding of content, improved classroom behavior, and the development of new forms of assessment. Integration of these activities within the instructional day will meet the needs of a variety of learners, especially kinesthetic learners, in a more meaningful manner" (Skoning, 2008, p. 2). In case studies researched by Lois Favre, every time students were taught

new and difficult information through their perceptual strengths, they realized statistically increased achievement and attitude test scores and improved behaviors (Favre, 2009).

On the contrary, programs such as Brain Gym have been questioned as being credible sources. Keith Hyatt poses a question about specific programs. In his research of Brain Gym, his findings show that neither the theoretical foundation, nor the peer-reviewed research base supported the claims that Brain Gym has made. However, their marketing approach made it appear that their program could provide the cure to all students (Hyatt, 2007). One could argue that Brain Gym is an effective program. In an article written by Jennifer Stephenson, a list of documents and websites that explicitly recommend Brain Gym to schools and teachers was generated. Comments from the documents and websites such as: "Brain Gym is explicitly recommended for young children who are having difficulty with fine motor skills, early reading behavior, with using prepositions (early numeracy) and who need to expand language use" (Northern Territory Department of Employment, Education and Training 2008) and "Brain Gym is extremely useful when working with children or adults labeled as "learning disabled", hyperactive or with ADD," (Tasmanian Department of Education, 2008) show that there are those who support the effectiveness of the program (Stephenson, 2009, p.113-114). Nevertheless, Stephenson (2009) did not think there was enough evidence to link Brain Gym exercises to academic improvement. In fact, Stephenson mounted a case against Brain Gym which is

interesting due to the fact that no sites were found that advised against the use of Brain Gym (Stephenson, 2009, p.113).

Does Movement Impact Literacy Development?

In developing the realizations listed above, one may wonder, does movement have an impact on literacy development? According to Robert Marzano, "Movement is a small, but potentially important, part of effective teaching" (Marzano, 2012, p.89). It has also been stated that "Movement anchors learning" (Pingel, 2012, p.1). Adding to that, Denise Jehue and Cynthia Carlisle state, "Movement integrates and anchors new information and experiences into the neural networks. Humans build on movement to shape vision, explore shape and form of the environment, and to interact with the people and surrounding forces" (Jehue & Carlisle, 2000, p.5). They also indicate that "many people have a tendency to think better while engaged in a repetitive, low concentration physical task. Approximately 50% of the population appears to learn best through movement. Research shows that children who exercise regularly do better in school" (Jehue & Carlisle, 2000, p.5).

Children are entering into school with a lack of physical activity due to increased television, computers, and video games. It isn't a coincidence that more and more children are also being diagnosed with learning disorders and developmental delay. Dr. Mary McCabe suggests, "Children can raise achievement level, increase their motivation, heighten their understanding, accelerate their learning timeline, and expand their creativity through motor

skills, music, and proper nutrition" (Hendy, 2000, p.85). Studies show that children who are physically active younger in life have a greater chance of being successful in school (MLRC, 2004). Based on research cited on the Minnesota Learning Resource Center website (2004), there is explanation of the reasoning behind certain reading difficulties. The brain cortex (which controls conscious motor activity) and the brain stem (which is where all automatic functions take place, such as eye movement, auditory processing, etc.) need to work together. When one is working harder than the other, disorders and delays can occur, such as difficulty with comprehension. It is stated, "The brain cortex is working overtime to carry out responsibilities that the brain stem has not been trained to handle" and "The brain stem must receive stimulation in order to properly manage these crucial tasks" (MLRC, 2004, p.1). One also wonders if disabilities can be "created" by environment. Lois Favre cites Wanda Bailey stating, "A disability is actually created when kinesthetic learners attempt to negotiate an environment that is fixed and rigid. If teachers allowed classrooms to be flexible, what we perceive as an impairment is moved past the barrier blocking the need for movement and that condition no longer is disabling" (Favre, 2009, p. 29).

S.M.A.R.T., which stands for Stimulating Maturity through Accelerated Readiness Training, is a program that focuses on duration, frequency, and intensity of specific types of movement. The thought behind this is to enhance the neurological firings in the brain and to develop the brain functions listed above in a fun, exciting way. According to the Minnesota Learning Resource

Center, when using nationally normed measures on students across the state and the nation, students who have participated in S.M.A.R.T. outperform those that do not (2004). Similar to S.M.A.R.T., Brain Gym is a program that provides engaging movement opportunities to foster flexibility, eye teaming, and hand-eye coordination. There is an abundance of information regarding Brain Gym, however, minimal information on S.M.A.R.T. Due to the limited number of case studies involving the S.M.A.R.T. program, the researcher has chosen to pilot the activities and research the results.

Does Movement Impact Younger Children Differently Than Older Children?

Eight students (out of twenty) within the researched classroom in the 2012-2013 school year, would be considered in the younger age group for kindergarten. These birthdays range from April through August. One may wonder if the need for further development with movement is attributed to the younger birth date ratio. Long and Bonds-Raacke (2012) found primarily on the relation to age of entry into formal education, it is said that the age of entry into formal education is related to special education services for children. Martin, Foels, Clanton, and Moon (2004) not only showed lower achievement of summer born children (June-August), but also greater rates of Specific Learning Disability diagnosis (Long & Bonds-Raacke, 2012). With this data in mind, it appears to be best practice to integrate an intervention (such as S.M.A.R.T.) from the initial time of entrance into formal schooling. Perhaps it would decrease the likelihood of lower achievement as well as Specific Learning Disability diagnosis.

Does Movement Impact Males Differently Than Females?

Claire E. Cameron, Wei-Bing Chen, Julia Blodgett, Elizabeth A. Cottone, Andrew J. Mashburn, Laura L. Brock and David Grissmer (2012) generated a study that was done on the preliminary validation of the Motor Skills Rating Scale. In their findings, the Motor Skills Rating Scale confirmed the differences expected by child age, gender, and subsidized lunch status. Females showed an advantage in fine motor skills. Females also were shown to be ahead with knowledge of shapes, letters, and body awareness. Long and Bonds-Raacke have concluded in their research that females had a higher average percent correct on the Accelerated Reader quizzes than males. They explain that females tend to be more intrinsically motivated than males. This also coincides with prior research that females generally outperform males in areas of reading as well as attitudes towards reading and school (Long & Bonds-Raacke, 2012).

There are exactly 50% males and 50% females in the class researched. The males in this particular group are more inclined to be active. One can make an assumption that these boys need movement. Motivation to enhance reading skills could be increased with these particular males through movement. Stacey N. Skoning uses dance with students that move quickly from one thing to another (which is a characteristic of many boys within the researched classroom)(Skoning, 2008). "They could explore these different movement qualities and train their bodies to respond and move in a wider variety of manners while they used their kinesthetic strengths in new ways" (Skoning, 2008, p.5).

Conclusion of the Literature Review

The majority of the articles researched have shown positive effects of movement within the classroom. Although more movement is needed at an early age, it is still something to be considered throughout a child's academic career. Getting children started at the kindergarten level, with developing physiological and neurological readiness skills, is vital to academic success. It is said that "teachers who are sensitive to the need for student engagement will have greater success in sustaining students' attention levels" (Marzano, 2012, p. 89). Movement connects with a variety of learners, regardless of birth date or gender. It is also an engaging way to learn. Through the use of S.M.A.R.T., there is a positive outlook that *all* kindergarten children, whether younger or older, male or female, will be on the right path to academic success. The intention of this study is to research developmentally appropriate movement (and research-based) activities and apply them to academic (specifically reading) skills that have been taught previously, currently, and upcoming at the kindergarten level.

Areas of Further Research

While researching movement in a literacy environment, additional questions began to develop supplementary to the key question: What is the impact of movement on literacy?

Supplementary Questions:

- Does movement have an impact on attention span (such as with ADHD children)?
- Does specified time of day make a difference in movement?
- Can children who come in with special needs in reading improve with a movement intervention?
- Will implementing S.M.A.R.T at the beginning of a school year, versus the middle, have a better outcome?
- Does consistency with frequency and duration show an added effect?

Action Research

Does Movement in the Kindergarten Classroom Impact Literacy Development?

The research in this study has been gathered to determine if movement in the kindergarten classroom impacts literacy development. The research was narrowed to two focus areas: the impact of movement on younger students versus older students in the class and the impact of movement on males versus females. The following data has been gathered by the researcher with use of a piloted program by the name of S.M.A.R.T. Report card assessments were used in the second and third quarter of 2012-2013 and the first quarter of 2013-2014.

Study One

Methodology

Participants

Twenty kindergarten students participated in this study. Abilities varied between students. Participants included four students with diagnosed special needs in addition to three undergoing evaluation for special education services (by the end of the study, all three qualified for services). One student was receiving Title I services (two additional students were waiting for available seats and by the end of the study, entered into the Title I program), two students attended MN Corporation, a program focused more on fluency, (one student exited by the end of the study), three students received Title 7 support (once weekly), and four students received Reading Eggs (a computer based

intervention for letter, sound, and sight word recognition) on a daily basis. Two to three students were in mind for retention (one of whom entered into special education). There were exactly ten boys and ten girls. Three participants were Native American children (one of which was half African American and two were half Caucasian) and one participant was Jamaican. Roughly half of the participants utilized the free and reduced lunch program. Eight of the twenty students had birthdates between the months of May through August (which is considered a young kindergartner).

Materials

Materials included a wide range of materials for gross and fine motor development in addition to tools for eye and brain development. Items such as 3 ½" x 11" cards for words, balls, beads, buttons, bean bags, clothespins, curriculum materials (letters, sight words, numbers, etc.), gross motor equipment (balance beam, creep track, half tunnel, and trampoline), markers (mostly red in color), pennies, pointers, poster board, S.M.A.R.T. manual, tweezers and/or other fine motor grip tools, and yarn were needed for participation in the piloted program. Second quarter assessments, third quarter assessments, and stamina graphs were also used in the course of this study.

Setting and Procedures

The study was conducted at an elementary school in Red Wing, MN. This particular building educates kindergarten through second grade students. There are nine sections of kindergarten, ten sections of first grade, and two sections of second grade. The S.M.A.R.T. (Stimulating Maturity through Accelerated

Readiness Training) program was implemented from 9:30-10:00 a.m. Monday through Friday (with an occasional time change) in a specified kindergarten class.

The class was divided into two predetermined groups that were separated during this time period. Group One spent fifteen minutes in the researcher's classroom focusing on fine motor, brain and eye development pieces, while Group Two spent fifteen minutes in the gym (with a different teacher) focusing on the gross motor academic piece of the SMART program. Students in the researcher's classroom were partnered in groups of two to three and rotated every three to five minutes between four to five stations. Students in the gym worked as a whole group. Groups rotated after fifteen minutes from the classroom to the gym and vice versa.

Students were pre-assessed using data from second quarter's report cards. Whole group stamina was documented during the reading lesson following S.M.A.R.T. activities. Stamina was determined by starting a timer at the beginning of the reading lesson and was stopped when the first student was off-task. Students with birthdates March through August (with the exception of one six year old child) were specifically observed during the reading lesson as well. After a two week time period, students with birthdates in September, October, and November were added to the stamina graph. Data was collected for an additional two weeks making the total data collection time approximately one month. Observations were recorded by the initial researcher (classroom teacher), the school social worker, an educational assistant, and the

occupational therapist at the elementary school. The classroom teacher used assessment data previously collected from second quarter to compare and contrast recently collected data from third quarter.

Findings and Results

Stamina of attention (or the duration of on-task behaviors) during reading lessons following S.M.A.R.T. was tracked for four weeks. On an average, whole group (all twenty students) attention stamina during reading increased every week following S.M.A.R.T. activities. The increase from week one to week four was 37%.

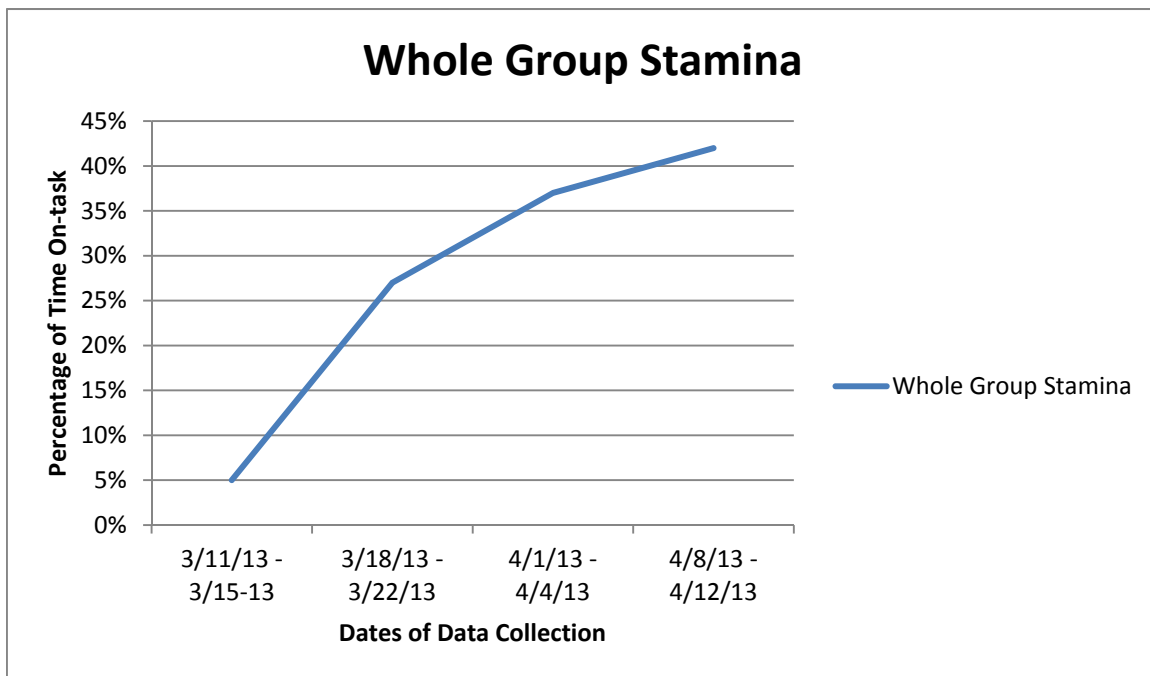


Figure 1- Whole Group Increase in Attention

Students with birthdates in months March through August were tracked individually for four weeks as well. Data was collected for the minutes attended during the reading lesson following S.M.A.R.T. activities. Every student who was tracked made gains in stamina. The average percentage of week one in

comparison to week four is shown in Figure 2. The average increase for all students in reading attention stamina from week one to week four was 38%.

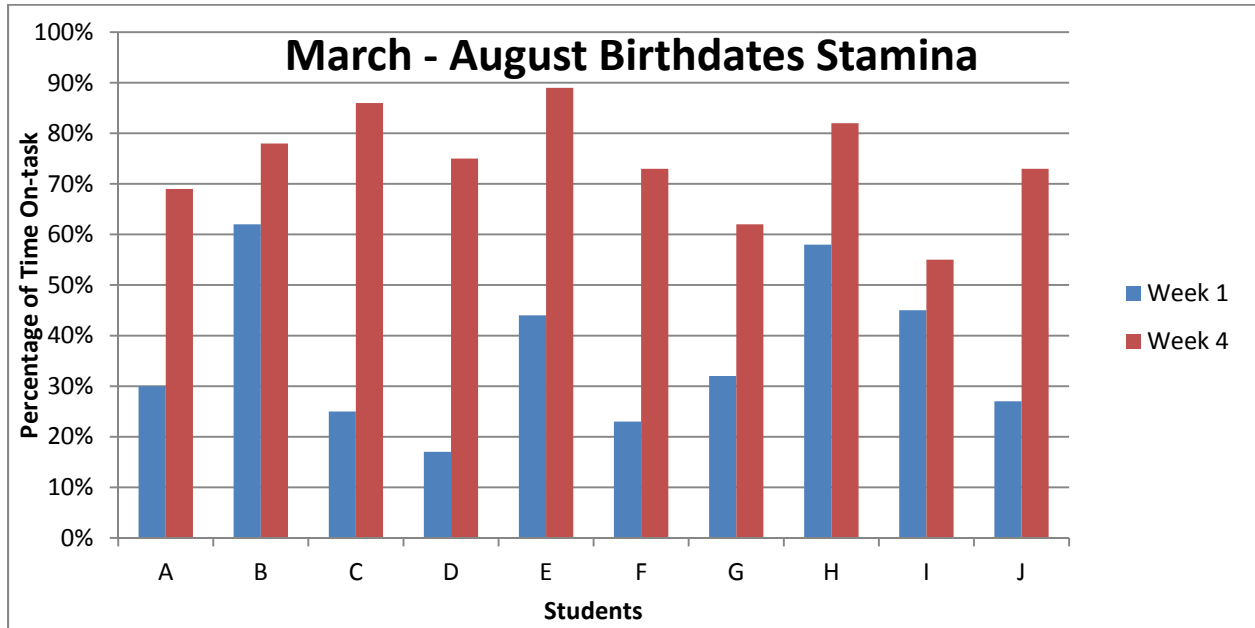


Figure 2-March through August Birthdates Increase in Attention

Students with birthdates in the months of September through November were also tracked the final two weeks of research. Two out of four students increased their reading stamina, while the other two decreased. Data from week three and four is shown in Figure 3.

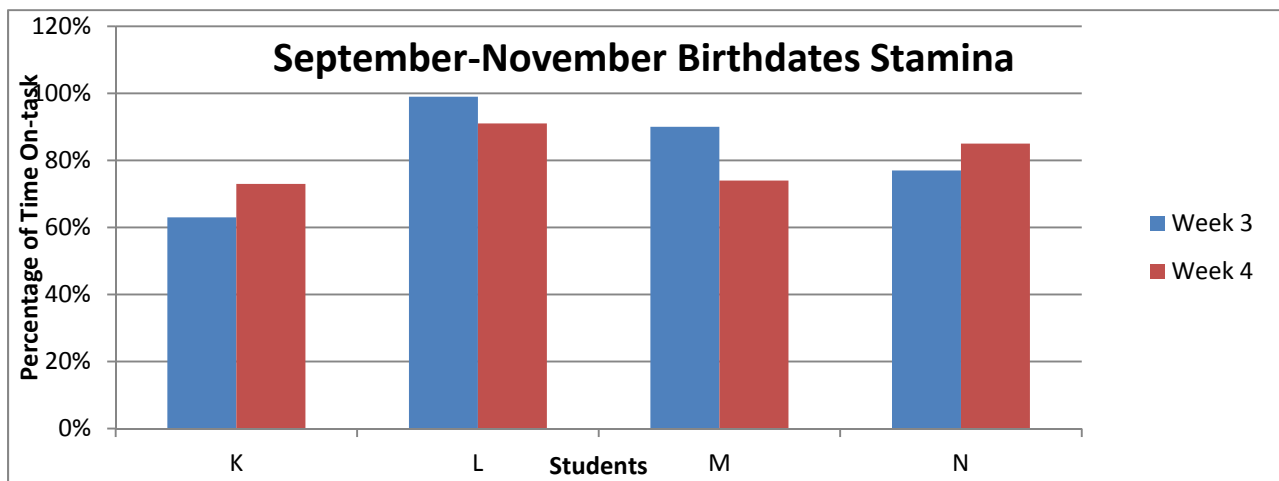


Figure 3-September through November Birthdates Attention Stamina

When comparing second quarter sight word recognition to third quarter sight word recognition, every student (all twenty) made an increase or retained all nineteen sight words assessed. Overall, ten students retained all nineteen sight words from quarter two to quarter three. Data in Figure 4 below shows the increase of students of the remaining ten students.

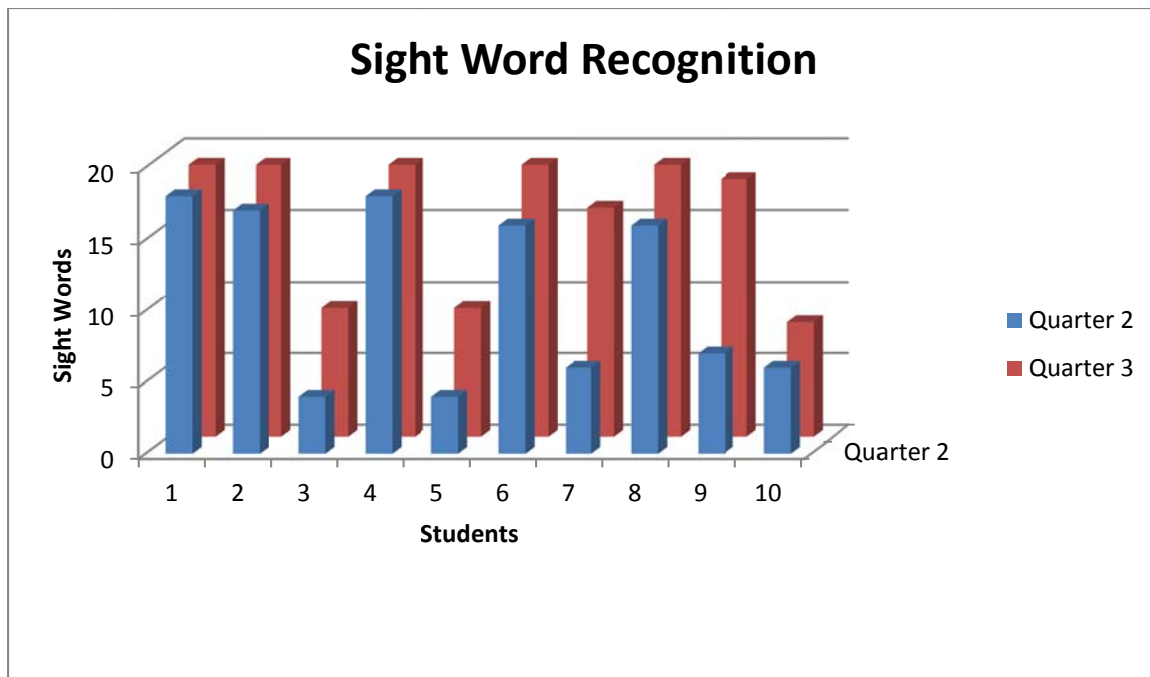


Figure 4-Sight Word Recognition Comparison

Data was also compared for four students who had missed recognition of uppercase letters, lowercase letters, and beginning sounds from quarter two to quarter three. The four chosen for this data did not master all of the letters and sounds taught during quarter two. All four students showed improvement on the eleven letters and sounds that were assessed. Figure 5 shows this increase.

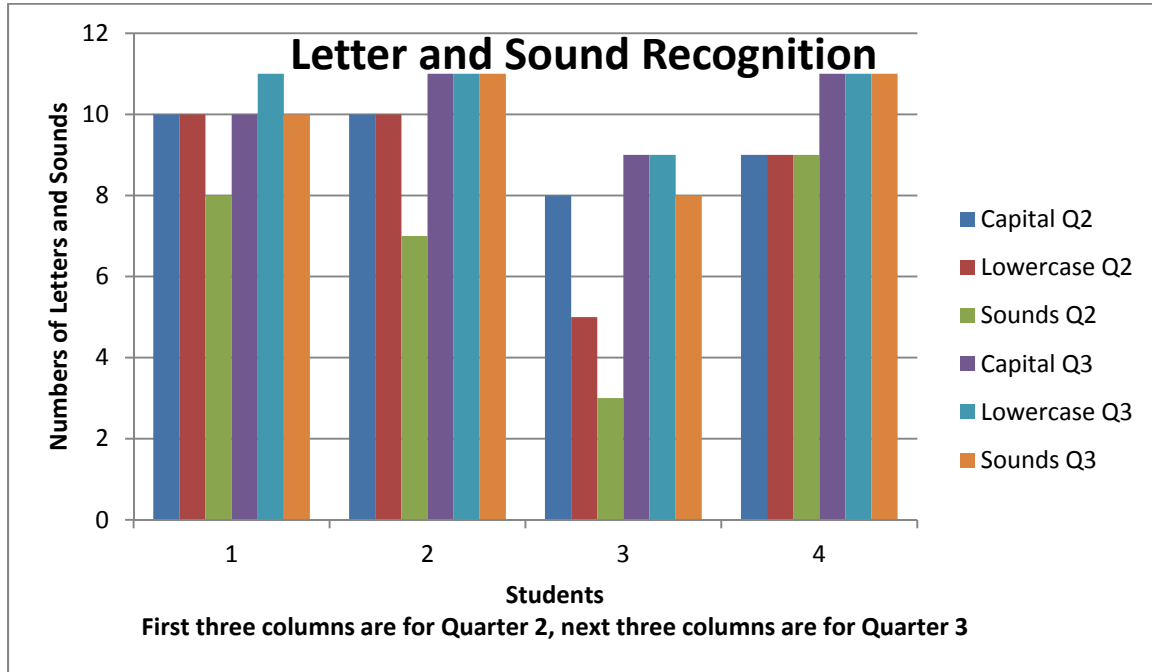


Figure 5-Letter and Sound Recognition Comparison

Interpretation and Analysis of Results

It is evident, based on the data listed above movement (S.M.A.R.T.) has had a profound effect on the researched class. There were gains in attention span, sight word recognition, letter recognition and sound recognition.

When comparing male to female, the researcher focused primarily on the ten students that had the birthdates from March to August. Six students were female and four were male. Growth in the males’ attention stamina averaged 40%. Growth for the females’ attention stamina averaged 37%. This leads the researcher to believe that the males benefited only slightly more than the females. Overall there is not a profound difference.

When comparing older to younger students, the researcher discovered that the older students started off with higher attention stamina and their average stayed fairly consistent (with an exception of a lesson mentioned in the

limitations portion of the paper). These students seemed to do well from the start with the actual S.M.A.R.T. activities. The older students also seemed to retain the information that they had already mastered in quarter two. It would be interesting to note if this is totally developmental or if the younger students had an opportunity to start movement activities from the beginning of the school year, they could maintain the material they have mastered at a faster rate.

Observations (not included in the data above) by the classroom teacher, the school social worker, the occupational therapist, classroom aides, among others were also documented. Written observations show that students from the researched class have also made gains in gross motor skills, fine motor skills, in addition to displaying increased confidence in themselves. Blending and phonemic awareness activities have begun to flourish with students who may have had difficulty prior to the study. A more structured, routine environment has also become more apparent. The students collaboratively transition much more effectively and are able to complete tasks in a more efficient time frame.

Limitations

Throughout the research, several limitations have been noted. During the last week of the study, a lesson that followed S.M.A.R.T. activities had a drastic effect on data collected for that day. An outside group joined the classroom to teach a lesson. The format of the lesson included a story being read while students colored and decorated an activity sheet with stickers. The students were asked to complete several tasks at one time which resulted in an extreme

drop in attention stamina, not only for the whole group (3%), but for the majority of the individuals tracked as well. In turn, the averages for the week in whole group stamina, March through August birthdays, and September through November were greatly impacted. Perhaps this would have allowed the two students that decreased in their attention stamina to either maintain or increase had the lesson been in a different format.

Another limitation could be the few occurrences where S.M.A.R.T. activities were altered to a different time. In addition to a different time, the weather played a factor. An early release, a late start (both due to weather), and a week of spring break (in the middle of data collection) may also have altered data results.

One of the greatest limitations quite possibly could be the constant traffic that is coming and going during the reading lesson of the researched class. Approximately three adults and three children are either joining the class or leaving for a brief moment during that time. In relation to the distraction of people, roughly one third of the class requires preferential seating, special chairs, and/or fidget tools.

A few changes with students also occurred throughout the research. Three students qualified for special education services, one of which exited from Title I services to special education. Two students entered into Title I services. Two additional students are currently undergoing evaluation for special education services.

Study Two

Methodology

Participants

Twenty-two students initially participated in this study. Two students moved to a different location before the study ended. Participants consisted of five students with diagnosed special needs (down to four as one moved a week before the study ended) in addition to a select few (three to four) that were being considered for Tier II interventions. Two students are half Hispanic, half Caucasian, one was half Asian, half Caucasian, one was half Native American, half Caucasian, and one was half African American, half Caucasian. Roughly 50% of the participants were utilizing the free and reduced lunch program.

Materials

Materials included several items for gross and fine motor development in addition to particular items for eye and brain development. Materials used in Study One were again used in Study Two such as: balls, beads, buttons, bean bags, clothespins, curriculum materials (letters, sight words, numbers, etc.), gross motor equipment (balance beam, creep track, half tunnel, and trampoline), markers, pointers, poster board, S.M.A.R.T. manual, tweezers, and/or other fine motor grip tools. All quarter one assessments were used in addition to stamina graphs tracking attention span during reading lessons.

Setting and Procedures

This study was conducted at an elementary school in Red Wing, MN. This particular building educates kindergarten through second grade students. There are nine sections of kindergarten, nine sections of first grade, and three sections of second grade. The S.M.A.R.T. (Stimulating Maturity through Accelerated Readiness Training) program was implemented daily from 9:30-10:00 a.m. in a specified kindergarten class.

The class was divided into two predetermined groups that were separated for two fifteen minute sessions. Group One started in the gym with our school social worker (who has been trained in S.M.A.R.T.) focusing primarily on gross motor academic skills, while Group Two stayed in the researcher's classroom focusing on fine motor, along with brain and eye development. Students in the researcher's classroom were in small groups consisting of three-four students and rotated between three different stations. Students in the gym worked together as a whole group. After fifteen minutes, the groups rotated from the classroom to the gym and vice versa.

Students were pre-assessed using a standard beginning kindergarten screener that includes: letter identification, concepts about print, colors, shapes, counting, printing and name recognition. Students were also screened on letter naming fluency using the AIMSweb benchmark assessment. Over the first three weeks of school, the researcher also completed a Kindergarten Student Entrance Profile (KSEP) for each student. The KSEP is a rubric-based

screeners incorporating both social-emotional items and school-ready knowledge items.

S.M.A.R.T. activities were incorporated into the normal school day starting the first whole week of school (day four of kindergarten). Data was collected for six weeks. Observations were recorded by the classroom teacher, the school social worker, an educational assistant, and the occupational therapist at the elementary school. Whole group stamina of attention span during the researcher's reading lesson following S.M.A.R.T. activities was documented. Students that have been diagnosed with special needs were specifically observed during the reading lesson and throughout the S.M.A.R.T. activities. These students were tracked for the full six weeks of data collecting. Starting week three, the researcher observed an additional six students that specifically presented hyperactivity, academic concerns and/or motor concerns. During week four, students participated in S.M.A.R.T. only on Monday and Friday. Week six also had one day that students did not participate in S.M.A.R.T. activities.

The classroom teacher used the DRA Word Analysis (Tasks 1-6) to assess students throughout the six week period. The tasks assessed: distinguishing pictured rhyming words, distinguishing initial sounds of pictured words, isolating initial sound of a word, recognizing capital letters, recognizing lowercase letters, and understanding words printed language concepts. Task 4 (understanding words printed language concepts) was given to students that were being observed for Tier II instruction. The classroom teacher also collected quarterly

information on each student including letter identification of letters taught, sound recognition of letters taught, and sight word recognition of sight words taught throughout the six weeks. The pre-assessment data was used to compare and contrast recently collected data from the end of the study.

Findings and Results

The duration of on-task behaviors during reading lessons following S.M.A.R.T. was tracked for the whole group for six weeks. On week four, students participated only two days in S.M.A.R.T. activities. Week six also included one day without S.M.A.R.T. activities. The whole group decreased stamina on the weeks that had fewer days of S.M.A.R.T.

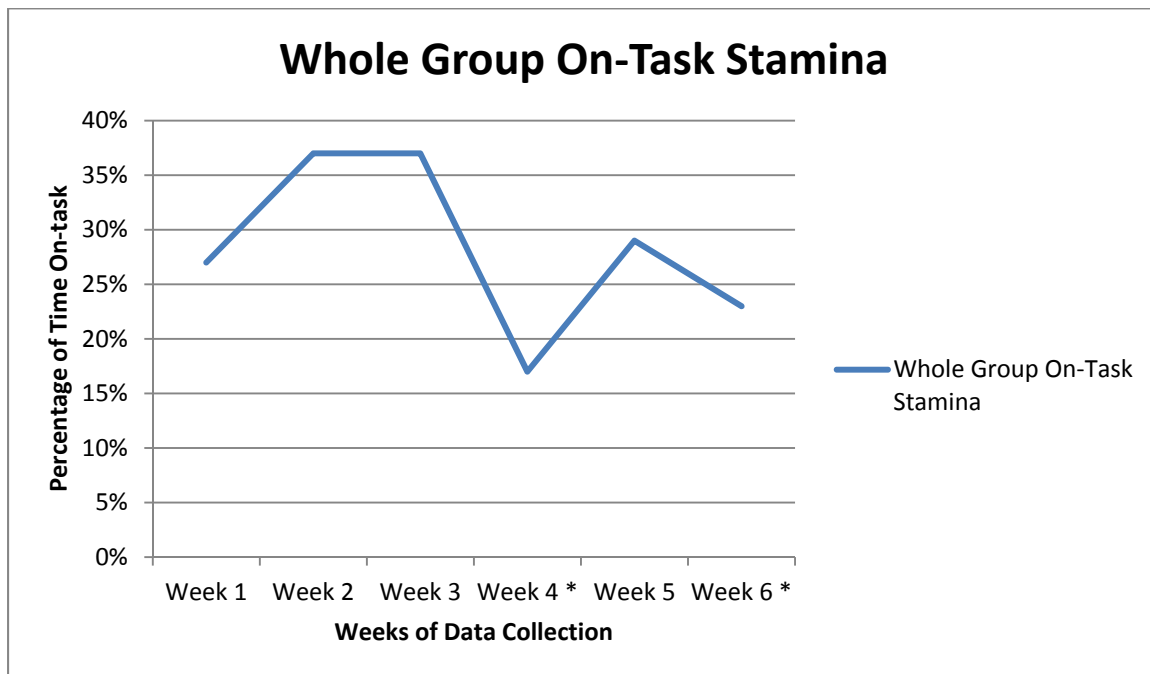


Figure 6-Study 2: Whole Group Attention

Students diagnosed with special needs were specifically tracked (on-task stamina) for six weeks as well. Data was collected for the minutes that the students stayed focused during the reading lesson following S.M.A.R.T. activities. On the chart below, week one and week four show a contrast between a full week of S.M.A.R.T. activities (week one) to only two days within the week of S.M.A.R.T. activities (week four).

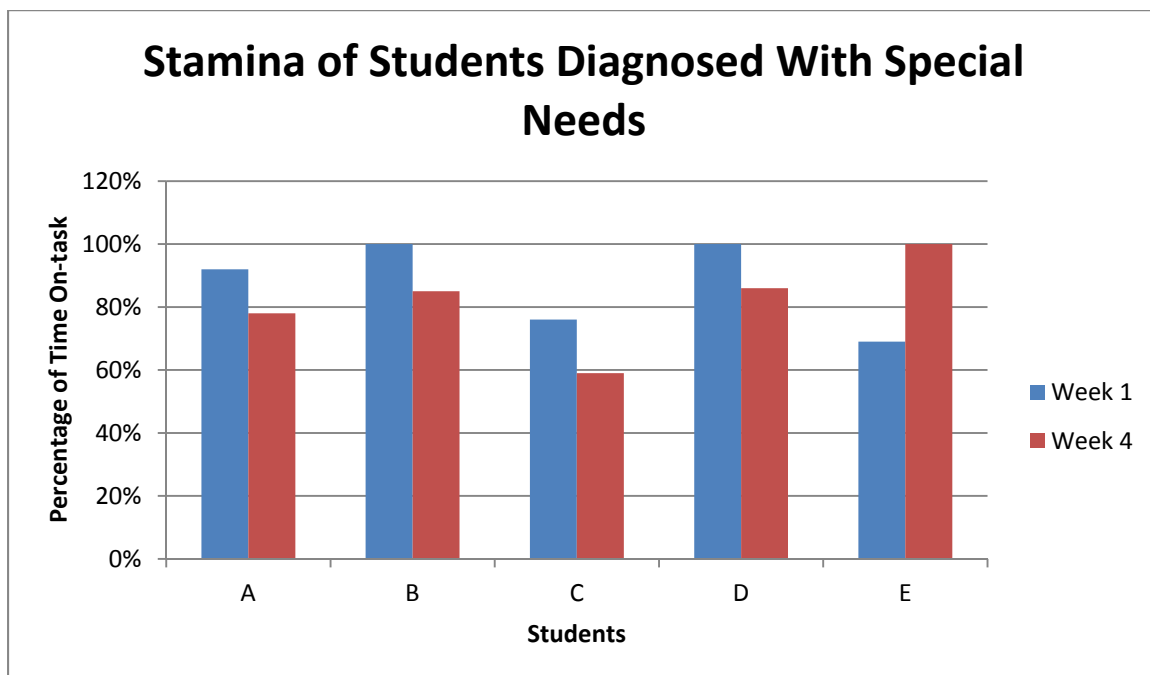


Figure 7-Study 2: Diagnosed Special Needs Stamina

On week three, students were added to the stamina graph based on observations made by the classroom teacher. Students selected presented hyperactive behaviors, academic concerns and/or motor concerns. Data was collected for the minutes that the students stayed focused during the reading lesson following S.M.A.R.T. activities. On the chart below, week four and week five show a contrast between two days within the week of S.M.A.R.T. activities (week four) and a full week of S.M.A.R.T. activities (week five).

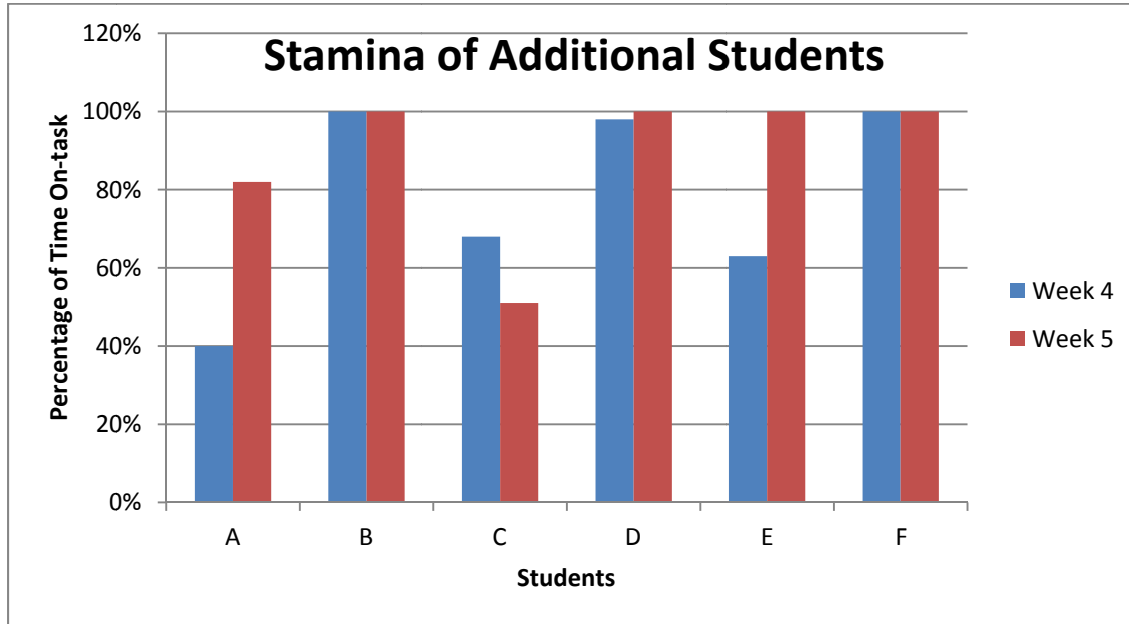


Figure 8-Study 2: Stamina of On-Task Behaviors For Additional Students

Data from Study One in the spring shows the whole group started at 5% on-task the first week (the beginning of second quarter) of S.M.A.R.T. activities. Starting the first whole week (day 4) this year, the whole group started at 27% on-task. The end of Study One had an increase to 43% on-task behaviors for the whole group. The end of Study Two shows a slight decrease at 23%.

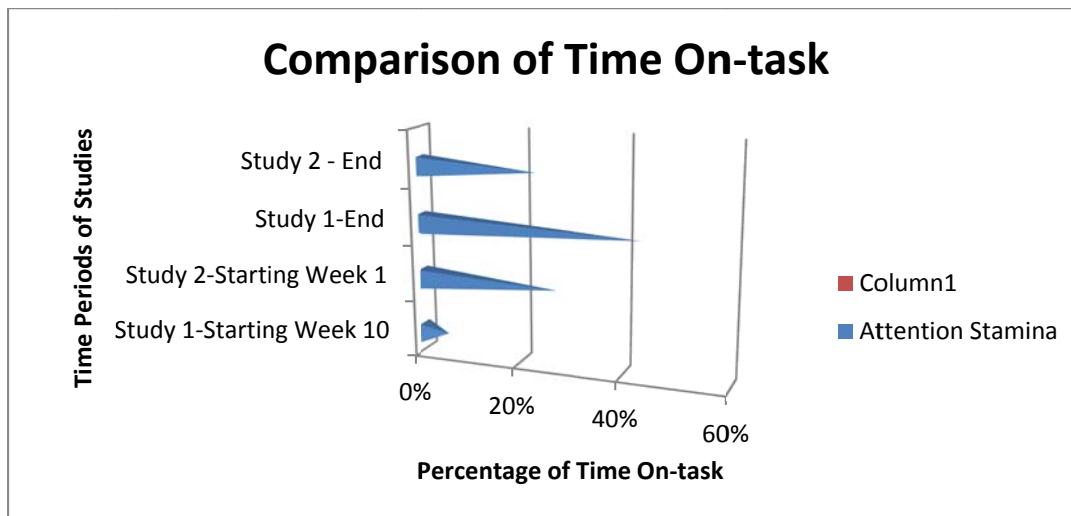


Figure 9-Study 2: Comparison of Spring and Fall Attention Stamina

Students that had not known letters Mm, Rr, and Ss on the beginning kindergarten screener were assessed at the end of the study on these letters to check for mastery. Every student increased their mastery of the letters presented. All students that had known letters Mm, Rr, and Ss on the beginning kindergarten screener retained their mastery.

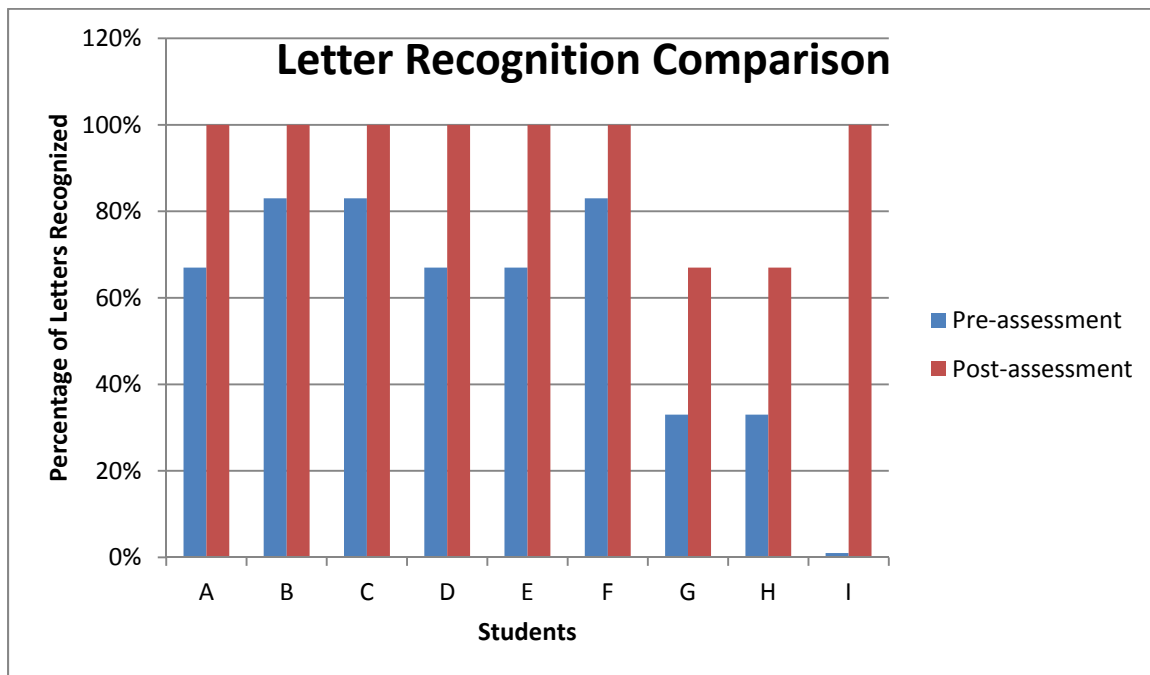


Figure 10-Study 2: Growth of Letters Mm, Rr, and Ss

Students were assessed on sight word recognition for the words: *I, see, can, the, is, and like*. Sixteen out of twenty mastered all six words. All four students that have been diagnosed with special needs mastered all six words. Compared to last year, this is a drastic increase. Data indicated only seven of twenty students from Study One had mastered all sight words presented in quarter one.

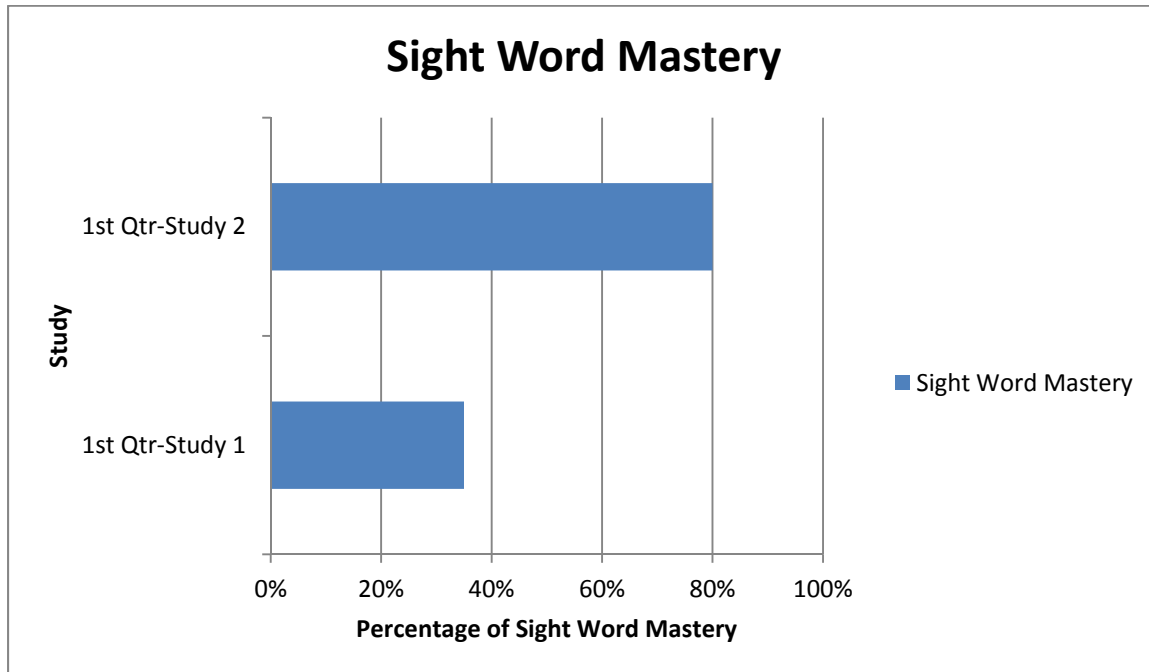


Figure 11-Study 2: Comparison of Quarter 1 Sight Word Mastery

Interpretation and Analysis of Results

The dynamic changes between the full weeks and the weeks with limited S.M.A.R.T. demonstrate a need for a routine movement opportunity for this particular kindergarten class. Perhaps not every student would particularly need this movement in correspondence to the attention stamina during the daily reading lesson. Student E in Figure 7 and Student C in Figure 8 show an opposite outcome when compared to the other students.

Overall, the students in Study Two have started out their school year with a higher ability to attend and focus during a reading lesson when compared to the students from Study One. Study One students started with the S.M.A.R.T. program week 10, while students from Study Two have started in the first full week of the school year. This appears to have a positive effect.

When comparing data from the pre-assessment tool on letter recognition to the post-assessment, all students either maintained their knowledge of letters Mm, Rr, and Ss or increased their mastery.

A comparison was made between the number of students that had mastered the sight words presented in quarter one from Study One to the number of students that had mastered the sight words presented in quarter one from Study Two. There was a drastic difference. Only 35% of the participants researched in Study One had mastered the sight words presented whereas 80% of the students from Study Two had mastered the sight words presented. One could make a correlation between the repetition of sight words in a daily routine movement opportunity and the increase of mastery.

Limitations

Throughout Study Two, a few limitations were presented. Two students (one of which was diagnosed with special needs) moved and certain data could not be obtained regarding these children.

Another limitation that could have interrupted data collection was the need to change seating arrangements during the reading lesson. Week four was the initial change. Certain students seemed to benefit from this change. Coincidentally, two of the students were Student E and Student C from Figure 7 and 8. Their ability to stay on task appeared to increase even without having S.M.A.R.T. activities. On the contrary, the whole group stamina data showed a decrease in ability to stay on task this same week and the weeks following.

When reviewing observational records, the researcher noticed that three particular students that were moved next to each appeared to be the students with off-task behavior the majority of the time. Perhaps having those students spread out could impact their ability to attend.

Week 5 and week 6 could have potentially had some limitations as well. A guest speaker came and read with the class during the reading lesson week 5. Although it was fun and different, the majority of the students had difficulty attending for the entire session. Week 6 was a three day week. The students had fire safety prior to the reading lesson and with the excitement, it was harder to attend.

Reflections

The use of movement in the kindergarten classroom has had a definite positive impact on literacy development. It also appears to benefit all students regardless of age or gender. S.M.A.R.T. activities are an engaging way to introduce, review, and master academics. Students can use a kinesthetic approach to learning and have fun at the same time.

It would be logical to start movement activities at an early preschool age and continue for years to come. The researcher anticipates incorporating movement opportunities through the use of S.M.A.R.T. and other kinesthetic approaches from the start of the 2013-2014 school year to the end. It will be equally as important to keep track of the students that have benefited from this research for the upcoming year.

Although it is obvious more research is needed, one would hope that implementation of appropriate movement opportunities would diminish the need for Tier two and Tier three interventions. With the demands of standards and expectations for teachers and students on a steady climb, movement just may be the key to enhancing literacy development.

Based upon the results from Study One, the researcher made an informed decision to focus Study Two on the implementation of S.M.A.R.T. the first full week of school. The focus question was: Does starting movement opportunities earlier in the school year have a more immediate impact on attention span, letter and sound mastery, and sight word mastery? Study Two also had a specific focus on students who had been diagnosed with special needs along with students considered for Tier II and Tier III interventions. The researcher wanted to explore whether movement alone was enough of an intervention to make an impact on literacy development for these particular students.

The use of movement in the kindergarten classroom has played an important role in literacy development in both action research studies. Observations and data collected throughout the studies implied that S.M.A.R.T. has had a positive effect not only on confidence with mastery of literacy concepts, but with maintaining them as well.

It was apparent that starting the S.M.A.R.T. program at the beginning of the school year was beneficial to kindergarten students, specifically in the mastery of sight words. One might consider starting movement opportunities in

a preschool setting. It would be interesting to research the impact on kindergarten readiness after students have participated in the S.M.A.R.T. program compared to those who have not.

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