

Running head: SUPPORTING STRUGGLING LEARNERS

VANCOUVER ISLAND UNIVERSITY

Supporting Struggling Learners Through BalAVisX Exercises

by

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SUPPORTING STRUGGLING LEARNERS

We accept this thesis as conforming to the required  
standard.

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**Abstract**

The purpose of this study was to evaluate the perceptions of a movement based program called BalAVisX in primary grades. The intent was to determine if this type of rhythmic movement provided an effective strategy to help support students with academics as well as focus and attention. In order to do this, I utilized a mixed methods research platform to answer: Is BalAVisX a valuable program to help improve our support for students with attention and academic challenges? The exercise program was set up for students in Kindergarten and Grade One who struggled with focus and attention. Over a three month period the students worked on sequential, rhythmic exercises, crossing the midline. After the three-month period, teachers, support staff, parents and students were invited to participate in a survey on their perception of the effectiveness of the exercises. The findings of the study supported that BalAVisX was a beneficial support program to increase academics and overall focus.

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## **Chapter One: Introduction**

### **Statement of the Problem**

“I have so many low students,” is a comment I hear so often from classroom teachers. Despite great, creative lessons and differentiated instruction, many of our students continue to fall behind their peers. Many of our students seem to struggle with an inability to focus. Rabiner & Coie (2000) suggested that success in learning, particularly reading, is often connected to an ability to focus. It is a reminder that, as educators, we need to consider what impacts a students’ ability to focus. How can we expect a student to learn if he or she cannot attend to what is going on in the class? As a student support coordinator, I frequently have teachers looking for advice or seeking support for the myriad of needs among his/her students in their class. Many of these students are high incidence students who do not qualify for the support from an educational assistant. As in most schools, my fellow educators and I build in as many supports as possible or as funding allows. I am part of a K-12 school, so I have the opportunity to see students as they work their way through the grades. Some students succeed, but for those who struggle, I feel that we have not adequately met their needs despite well targeted support. It then makes me wonder what or how my fellow teachers and I could have supported them better. Student engagement and learning is an integral part of establishing effective classroom procedures (Rand, 2012). Subsequently, the need for improving attention in the class is not just evident in our school, but a prevalent issue for all teachers as they support students.

Students come into Kindergarten excited to learn but some soon realize that learning is hard for them, which over time impacts their confidence and self-esteem. I see students getting frustrated and then engaging in work avoidance. Some students are little sponges and engage readily and regardless of teaching style are able to focus, attend and grasp the concepts taught.

In my experience, it has seemed that the majority of these are girls who cannot wait to learn how to read and write. Ready, LoGerfo, Burkam, and Lee (2005) queried whether girls were more ready for Kindergarten than boys. They felt that girls entered school with stronger literacy skills. The perception is that little boys want to be active and explore rather than sit. As a result, many of our staff at the K-12 school have taken workshops on Boy Smarts and gender equality (MacDonald, 2005) in teaching. Although these are all beneficial tools, we still seem to be struggling in setting up some of our students for success; boys as well as girls. I have frequently asked myself if there are other programs or strategies for learning that can be incorporated to help set more kids up for success.

Have the needs of our learners changed? Are the needs of 21<sup>st</sup> century learners different from what they used to be? As a child, my time outside of school consisted of playing and creating games and television watching was saved for special programs. However, this new generation of learners play and move less and spend more time on technology (YaeBin, 2013). Today's students have access to digital technology from an early age. "Our children's digital lives are turning them into much different creatures from us – and not necessarily for the better" (Conley, 2011, p. 3). "Research suggests that the use of digital media might have an effect on children's attention skills, such as increasing hyperactivity and difficulty in concentrating" (YaeBin, 2013, p.2). I think that when we, as teachers, ask students to sit still and pay attention, many of them will be unable to meet this basic request. As educators, maybe we need to make changes to how we approach teaching. How then do we prepare young minds to learn?

### **Special Education Context**

Our school believes that each student has unique gifts and talents and our desire is to see them grow and thrive. The BC Manual of Policies and Procedures states that, "All students



should have equitable access to learning, opportunities for achievement, and the pursuit of excellence in all aspects of their educational programs.... Special education programs and services enable students with special needs to have equitable access to learning and opportunities to pursue and achieve the goals of their educational programs” (BC Manual, p.9). This precludes that all students, regardless of gender, designation, cultural or non-designated should have access to opportunities that promote learning. In my experience, it is often these grey area students that fall between the cracks because there is limited support for them. We believe that early intervention is important, and want every student to be set up for success. We would love to take the “special” out of education and meet every child where they are.

Universal Design for Learning is one theory that recognizes the needs of diverse learners and advocates flexibility in our approach to teaching. “The education community began to recognize that many students - not just with disabilities – faced barriers and impediments that interfered with their ability to make optimal progress and to develop as educated and productive citizens.” (Meyer, Rose, Gordon, 2014, p. 5) In considering and responding to the theory of UDL, we felt that many of our students faced barriers to learning and our hope in trialing this program would address one of those barriers. As a result, our desire was to motivate all learners so they are engaged and excited to learn. Therefore, we need to design classrooms that support and engage all students, setting each student up for success (Hall, Meyer, Rose, 2012). In addition to responding to academic needs, we felt it was prudent to address why many students struggle.

### **BalAVisX Program**

I became interested in a program called BalAVisX which seemed to address the challenges of attention and learning. The focus of this program was to support all learners who

struggle and not differentiate between those who had a designation or not. As a school, our intent was to explore whether implementing a program like BalAVisX would be beneficial for our struggling learners. We decided to implement this program primarily for our Kindergarten and Grade 1 students. Some of these students were designated students with funding, but the majority of them were not.

“BalAVisX is a series of Balance/ Auditory/ Vision eXercises, of varied complexity, most of which are deeply rooted in rhythm. These exercises require full-body coordination and focused attention” (Hubert, 2014, P.3). BalAVisX, advocates that students need rhythmic movement, crossing the midline multiple times in different ways to optimally create the best opportunity for students to learn. These exercises are sequential in nature, working with a bean bag or racquet type ball and are established on the basis that focus and attention is developed through exercises and not forced on the student. Only then are students ready to learn.

Crossing the midline refers to an imaginary line down the vertical center of the body and one’s ability to reach across the middle of the body. This is an important developmental skill which impacts many areas of life. Children who have difficulty crossing the body’s midline often have trouble with skills such as reading, writing, completing self-care skills and participating in sports & physical activities’ (Edwards, 2011). Crossing the midline is important to awaken the brain and build the connectors between the left and right sides of the brain (Anaka, 2011).

As I looked at the variety of students who struggled in their learning, many of them were also awkward in their movement. In my role as a student support coordinator, I have observed a significant increase in the number of students diagnosed with a Development Coordination Disorder. Is this coincidental or are we getting better at diagnosing this? These students almost

always struggle with focus and academically. It seems logical to consider rhythm as a logical aspect of understanding how our body operates and what it might need for overall healthy development. Blomberg and Dempsey (2011), advocate that rhythmic movement is beneficial for learning, sensory, emotional and behavioural development. BalAVisX incorporates rhythm, movement and crossing the midline.

Bill Hubert (2014), the founder of the program, advocates that implementation of BalAVisX exercises significantly improves students' ability to attend which in turn affects their confidence and their academic performance. If this proves true, then the program could become a valuable tool to support not just struggling learners but all learners. This may also be an extremely powerful early intervention tool for specific types of learners. A parent at the conference of an autistic child shared that this program was the most influential program for her child. My hope is to begin to assess where, why and how we can use this program most effectively.

### **Movement and Learning**

BalAVisX is based on the assumption that moving is one of the key elements needed to promote learning. "Movement is the door to learning," is the motto of Paul Dennison, founder of Brain Gym (Brain Gym, 2016). Unfortunately, the digital age seems to be changing the amount of movement and play our students engage in. Incorporating technology into the classroom has opened up a new world of possibilities for students, but has the increase in a sedentary lifestyle impacted a student's ability to learn more than we have anticipated? As educators, we know that movement plays an important role in the level of engagement for all learners. Dr. Ratey (2000) states, "Movement is miracle grow for the brain" (as cited by Van, 2012 p. 3). I see teachers incorporating movement breaks frequently into their day which is beneficial for all

students, yet I hear frustrations that despite all their efforts in planning for all students and incorporating movement and hands on learning, some students continue to lag further and further behind. “Movement, however, is regarded by many as being essential to learning, and there seems to be a positive interchange between the brain and the body” (Bothma, 2014, p. 1). Bill Hubert, who has developed the BalAVisX program, advocates that movement crossing the midline in multiple ways in a rhythmic fashion is essential for student engagement and academic growth. In his experience, the schools that have incorporated BalAVisX into their day have seen significant improvement in attention and overall academic growth. BalAVisX is rooted in the correlation between joint attention, rhythm and movement. I was intrigued by the possibility of integrating these aspects in our school in order to assess its educational impact. As a result, we incorporated this program with the hope that it would make a difference for our primary and special education students who struggled academically as well as with focus and attention.

### **Implementing BalAVisX**

As a school, we have acknowledged that movement is important for learning. Many of the elementary classes start the day off with some sort of daily physical activity, which includes dance movements, brain breaks or a short walk. Various studies have focused on dance, brain gym, brain or active breaks and other similar types of movement to increase student engagement. In my observation, I noted that many of the students who really needed to engage in these activity breaks sat on the sideline and did not engage or participate. These students were not benefitting from our good intentions. This led me to ask how we can intentionally incorporate movement, especially for those who are more vulnerable. Are certain types of movement more beneficial than others?

After taking a workshop on BalAVisX, I felt quite strongly that this is what our students needed. BalAVisX is designed for every learner, but has been most impactful for students with learning, behaviour and attention challenge (Hubert, 2014). We decided to incorporate BalAVisX exercises into the day for all students with learning and behaviour challenges in the Kindergarten and Grade 1 class. In addition, many of the Educational Assistants, built this into the schedule for their students. Our intent was to work with each of these students 3 times a week for 10 minutes over a 3-month period and then evaluate its effectiveness.

### **Overview of Study**

Implementing a BaAVisX program in our school became the basis for my research study. Did this make a difference in the child's ability to focus, complete their work and improve their confidence? Through this program, the focus of my research was to investigate the following question:

### **Is BalAVisX a valuable program to help improve our support for students with attention and academic challenges?**

As part of my research, I chose to engage in a mixed methods survey, which looked at qualitative and quantitative information collected from a survey sent out to parents, teachers, educational assistants and students. The questions addressed academic, ability to focus, attending to work, confidence, as well as querying if it impacted certain types of learners more. This study was limited to a twelve-week time frame which was evaluated only through a survey at the duration of the program. Each question was given a rating scale with room for additional comments to support their choice of answer. In this thesis, the perceived value and impact of the BalAVisX program within our school community is explored. Its purpose is to both provide evidence for future support decisions and to contribute to the field of research on movement

based strategies and student attention. The data may help to determine the value of the program and its impact on learning not only for our school but for educators as they determine the rationale and basis for incorporating specific movement in their class.

## **Chapter 2 – Literature Review**

This literature review focuses on research exploring the connections between movement and learning, as well as the impact of brain development on learning. It addresses that the need for movement may be more important now than ever before. The connection between movement and brain development with its impact on learning is explored. It clarifies that the need for movement may be more important now than in the past. Movement type activities can impact attention, visual tracking development as well as auditory skills. As these aspects are being developed, two different programs incorporating movement will be addressed. It addresses the need for movement not only for brain development, but how rhythmic movement is essential to improve physical deficiencies, which impact a student's ability to learn. "It is reasonable for a teacher to suggest that the physical should be functional in order for the cognitive to thrive with reasonable effect (Hubert, 2014, p. 69). Student learning, then, involves utilizing attention, vision and auditory skills which can be developed through rhythmic movement. As a result, the importance of understanding the needs of learners is key to setting them up for success academically.

### **Today's Learners**

Movement and learning has gained more attention in the education world. Are educators more aware of the need for movement to promote learning or have the needs of students changed so that movement is increasingly important? In order to evaluate how to meet the needs of students, it is important to address who the students are before they enter the school.

School readiness is having the brain stimulated and ready for learning. Boost Up/SMART and Brain Gym (DeBoer, 2004) both agree that children in today's age enter school not ready to learn. Just because students are able to sit, listen and write their name does not

equate with school readiness (DeBoer, 2004). DeBoer (2004) believes that movement stimulates the brain which creates the right condition for learning. He believes that school readiness has changed due to a decrease in the amount of movement starting at a young age. "Today's infant is 'baby-sat' by television, seated in a walker, or strapped in a car seat for hundreds of precious motor development hours" (Jensen, 2005, p. 24). This may be of significant impact to the learners of today. "In 1960, the average two-year-old spent an estimated 200 hours in a car. Today's two-year-old spends an estimated 500 hours in a car seat" (Jensen, 2005, p. 24). This study was completed ten years ago and the assumption is that these hours have continued to dramatically increase. In the article titled, *The Impact of Technology on the Developing Child* (Rowan, 2013), states that this lack of movement and play in young children is delaying developmental milestones which in turn is affecting their academic readiness. It suggests that children need two to three hours of physical, active play in their primary years to build overall body awareness and control. These are the building blocks necessary for learning.

The lack of movement is changing how a child develops. Hannaford (1995) suggests movement is necessary to prevent vestibular system developmental delays, which is important for overall attention. A study on children under 3 concluded that, "young children report associations between screen time and cognitive development outcomes, such as short-term memory skills, academic achievement in reading and math, and language development" (Duch, Fisher, Ensari, Harrington, 2013, p. 2). It should not then, surprise educators that there are more and more students who struggle and do not seem ready to learn especially in the primary grades. This affirms what many educators see in the classroom. "The students of today have much different brains than students of previous years" (Anaka, 2011, p. 80). Anaka believes that the digital age, in addition to the increase of poor eating habits, television and the shift in family



patterns has changed who our students are. They thrive on instant gratification and endless stimulation resulting in shorter attention spans (Rowan, 2013). Bunker notes that “play is perhaps the most important aspect of a young child’s life ... children use movement to learn about their world. They move to learn, and they also learn to move.” (Bunker, 1991, p. 467) As a result, educators need to be more aware of who their students are, and find ways to engage students in new and different ways.

### **Movement and the Brain**

Anaka (2011) strongly suggests that educators need to change because today’s students are different. “Brains were made to seek not ‘sit and get.’ The digital natives coming into our classrooms today are used to seeking, yet we expect them to be in ‘receive mode’ when they enter school” (p. 147). Unfortunately, as Sousa (2011) states, schools and teachers are not changing fast enough to keep up with the brain of today’s learner. Educators must meet students where they are at and let go of previous assumptions or teaching methodologies. “Movement awakens and activates many of our mental capacities. Movement integrates and anchors new information and experiences into our neural networks (Hannaford, 1995, p. 107). Ratey (2010) states that physical activity is the building block of learning. A lack of exercise affects our mood, anxiety and attention. The brain has become a fascinating topic of research. Researchers and Educators alike are trying to understand the complexities of the brain and what can be done to improve it. Looking at the correlation between movement and the brain is of great value, especially for educators.

Physical activity is needed for survival now more than ever. “Sedentary lifestyles are creating a health crisis, not only for the body, but for the brain” (Hylock, 2011, p.25). Hylock studied the relationship and perceptions between academic performance and movement. Some

provinces and states have mandated a certain amount of physical activity for all students, yet not all students are meeting this targeted amount. She notes that from a health perspective, the lack of exercise is contributing to more obesity and health problems, but as a society we still have more to learn about the emotionally and academically effects (Hylock 2011). Often students do not seem to understand or embrace this possible correlation. In her study, students in grade 11 and 12 were asked to fill in a quantitative survey and based on their response, a follow up qualitative survey was sent out. The survey asked a variety of questions on how much, how often, and what types of physical activity the students engaged in on a regular basis. In addition, students were asked if, in their perception, they felt that physical activity had any impact on their academic performance. The school registrar provided the researcher with the student's GPA as a comparison. The information was evaluated to determine if there was a correlation and how accurate the student's perception was. In her findings, Hylock concluded that the students felt that they performed and were able to concentrate better if they were involved in physical activity or sports. They felt that being active helped them be more alert, to sleep better and gain confidence. However, the results, when compared with student's GPA, were actually inconclusive. The researcher looked at a variety of other factors, such as socio-economics, environment and interests, which would affect these results. She questioned whether including students in grades nine to twelve would have been more effective than just eleven and twelve. This study looked at physical activity in general, but did not address when or how often it took place. A student may engage in physical activity only on the weekend and not during the day which may impact their overall academic performance. One must ask what frequency of physical activity is needed in order to make a difference. Unfortunately, due to the number of

variables in looking at the role of movement and academics, more research is required to confirm or refute connections between academic success and physical activity.

As a result of the lack of conclusive data, teachers are often reluctant to sacrifice learning time for physical activity. Carmahalan and Ipock (2015) conducted research in physical activity breaks and student learning. They felt that giving up small amounts of instructional time improved attentiveness in students. In their study, teachers recognized that they saw positive results in attention during class time with the inclusion of more physical activity.

Continued lack of movement based activities integrated in learning, suggests that educators have not always acknowledged the need to understand how the brain works (Sousa, 2011). It is imperative to acknowledge that education is about the whole child, so one must look at all the variables, such as the brain, that contribute to learning. In order to function, the brain needs a continuous supply of oxygen and glucose. Glucose comes primarily from the food that is eaten, so students are often told how important it is to eat healthy. However, the other important variable to keep healthy functioning brains is oxygen; which comes from physical activity. Physical activity is essential to increase the number of capillaries in the brain which allows for more oxygen to move through the blood stream. The more oxygen in the blood stream, the greater the capacity to learn. "Movement helps pump blood to the brain" (Sousa, 2011, p. 137). Research also suggests that exercise plays an important role in the production of new brain cells (Ratey, 2010). In addition to the brain needing oxygen, dopamine is an essential neurotransmitter to stimulate the brain and send messages to the rest of the body. Dopamine helps to increase student engagement which in turn promotes greater learning. Anaka (2011), "suggests that diet and nutrition can help, but in the classroom, movement and exercise are the essential prescription (p. 137). Blaydes (2004) states that it is helpful to think of the brain as a

muscle. “One of the best ways to maximize it is through exercise and movement” (p.1). This seems to be a concept that many, young and old, either do not realize or do not take seriously.

Exercise also increases the level of brain-derived neurotrophic factor (BDNF) in the hippocampus part of the brain which is central to learning and memory. Researchers believe that this BDNF molecule directly impacts our cognitive function. A research study by Cotman and Berchtold (2002) found the “evidence they need to support the notion that exercise improves learning, mental performance, and long-term mental performance retention” (p. 296) An animal study was used as their protocol which allowed them to isolate exercise as the central variable. When looking at the effects of BDNF on the brain, they found that exercise promoted changes to the central region of the brain which enhances learning and memory. It was acknowledged that additional research would be beneficial, but felt that scientific studies are supporting the premise that exercise can benefit brain function. Anaka reinforces this stating that, “exercise and moving literally builds up brain circuits. The more circuits you have the more capacity you have to grow” (Anaka, 2011, p. 2). He believes this is the key for learning. Sousa emphasizes the need to add movement and physical activity into the day for students. He states that, “armed with the knowledge that movement is connected to cognitive learning, teachers and administrators need to encourage more movement in all classrooms at all grade levels” (Sousa, 2011, p.233).

### **Movement and Attention**

Pilote (2014) acknowledged that movement is important for learning. Her action research explored the effects of dance movement on attention and academic work. Students in her grade 4/5 class participated in mandatory dance movements after working on a particular subject for 40 minutes. The researcher recorded students on and off task behaviours after each dance session for 5 weeks. Quantitative data was also collected through journals, student self-

reflections and surveys. This study and research goal was clearly laid out to ascertain the effects of a specific type of movement, during set times on student engagement and performance. Determining the effects on students who struggle with attention and impulse control was of significant interest to her. After collecting the data, she “realized that implementing a dance program as an intervention for students, who have difficulties attending to tasks in appropriate ways, definitely helped them to increase their level of engagement in class” (Pilote, 2014, p. 58). In addition, she concluded that, “Implementing the dance movement program worked not only for students who have difficulties controlling their impulses and sustaining their attention, but also for all the other students who also need to move” (Pilote, 2014, p. 58). This study was based on a small group of students in one class. It may be debatable whether this small representation was sufficient to clearly make the correlation between dance movements and attention, however her results indicate that more study into movement and attention are warranted. Are there specific elements of dance movement that contributed to the increased ability to attend and maintain greater impulse control?

### **Attention**

When addressing the needs of struggling learners and establishing learning structures designed for optimal learning, the factors of attention must be addressed. In her research study, Cerrillo-Urbina, A. H. L. G (2015) focused directly on the connection between exercise and attention. Their study involved 249 students, ages six to eighteen, diagnosed with ADHD who participated in a physical movement program. The students were given a choice of activities either aerobic, including walking, jogging, swimming and dancing or yoga. This was compared to a control group that received no physical education intervention. No restriction was placed on frequency or duration. The mean duration was five weeks with an average frequency of two to

three times a week. Seven criteria were compared as indicators utilizing the Connor's Rating Scale. Their study showed that involvement in aerobic exercises showed improvement for student with attention, hyperactivity, impulsivity, anxiety, executive function and social disorders; however, no statistical improvement was shown for students who participated in yoga. The study did not attempt to understand why aerobic exercise was more impactful. In their study only nineteen students participated in yoga as opposed to two hundred thirty students in aerobic exercises. This may have impacted the effectiveness of this part of the study. The study does show that attention in general is impacted by movement, however it still leaves questions as to why one type of movement was more significant.

Another study done by Trinchitella (2016), looked at the effects of exercise on pre-school children. She theorized that exercise promotes brain growth and development, which in turn can yield behavioural change. Her study was limited to nine of the nineteen students who qualified for data collection. Her data was based on a pre-and post-assessment on the teacher's questionnaire on the Behaviour Assessment Scale for Children (BASC). She had one group of students participate in an exercise video which lasted ten minutes and a control group of students that engaged in sedentary activities. This study did not yield significant results; however, there was enough information to suggest further exploration of this topic would be warranted. She felt that exercise is an important component in education and that considering alternative types of exercise might be valuable. "The possibility that physical activity in the classroom may help to improve students' attention, focus, and motivation has positive implications for students" (Reeves, Miller, Chavez, 2016, p. 119).

**Rhythm**

Neuro-physicists have found that the brain responds to rhythm. In *Science Daily* (2011), it is noted that,

the brain learns through changes in the strength of its synapses -- the connections between neurons -- in response to stimuli. Now, in a discovery that challenges conventional wisdom on the brain mechanisms of learning, UCLA neuro-physicists have found there is an optimal brain "rhythm," or frequency, for changing synaptic strength.... The researchers found that not only does each synapse have a preferred frequency for achieving optimal learning, but for the best effect, the frequency needs to be perfectly rhythmic -- timed at exact intervals. Even at the optimal frequency, if the rhythm was thrown off, synaptic learning was substantially diminished (Wheeler, 2011, paragraph 1).

This is fascinating research into the complexity of the brain. Not only does one need movement to stimulate the brain, but rhythmic movement develops a healthier brain which in turn promotes better learning conditions

**Auditory and Vision**

A program called iLS (Integrated Learning System) also combines all of the aspects of rhythm, movement and vision into one therapy program. This program utilizes auditory stimulation with movement and visual activities to improve brain function and regulation. Movement is the key element in combining vestibular, auditory and vision (iLS, 2017). Calhoon (2009) studied the effects of this program on thirty-two students in Kindergarten to Grade 2. The goal of the study was to develop auditory sensory integration and free play in developing the whole child. These students participated in an Alpha program, an aspect of iLS, for three months. This program combines listening therapy with musical, visual, verbal,

spatial/kinesthetic and logical modes of learning (iLS, 2017). In her study, Calhoon (2009) found that there was a significant improvement in listening skills. In addition, most of the students gained an average of two grade levels in reading fluency and comprehension. Mitchell (2012), advocates that “movement, physical activity and rhythmic patterns enhance learning and understanding” (p. xiv). Utilizing more modalities increases the ability for the brain to retain and retrieve information (Mitchell, 2012). In addition, she believes that the development of eye tracking is necessary for the child’s ability to learn. The Boost-Up/Smart (2003), program stresses the importance of physical balance with the ability to track left to right and up and down. These are essential skills for students entering schools. An imbalance in these skills often shows up in difficulties learning to read.

### **Movement Based Programs**

Movement and learning has been widely explored in a variety of ways, however not all the studies have come up with conclusive evidence. There seems to be an interesting correlation between vision, auditory and physical movement to enhance attention and learning. Carter & Foreman (2011) contend that skills like reading, are contingent on acquiring certain perceptual and motor skills. They felt that a variety of exercises, including balance, are necessary for academic success. Specific movement programs have arisen as a response to the research on movement and learning. It is valuable for a school to select a research based program, considering its value for student learning needs.

### **Brain Gym**

Brain Gym is one such program that incorporates movement and crossing the midline. It advocates that simple exercises help to engage the brain and increase learning and engagement. Templeton and Jensen (1996) conducted a study inquiring whether brain gym activities would



improve the classroom climate and academic performance of grade 4 students. The study was conducted for seven weeks in which the students performed brain gym activities before starting new tasks. Students filled in a survey before and after the study. Although the majority of the students indicated they would like to continue with the brain gym activities, the data was inconclusive as to whether it made a difference within the classroom atmosphere and academically. It was recommended that better structures could be put in place in order to have enough space and time, which might in turn possibly increase the effectiveness of the brain gym activities. The question then arises if there are still gaps in the understanding of movement and learning.

### **BalAVisX**

BalAVisX is an exercise program incorporating balance, vision and auditory exercises. BalAVisX advocates the need for a rhythmic, auditory component as well as visual activities as an integral part of the movement exercises. Went (2015) conducted an action research study, utilizing the program BalAVisX, to determine if this helped improve focus, motivation and improvement for students in keyboarding. She hypothesized that, “movement helps students’ brains awaken and become fully equipped to absorb and process information” (Went, 2015, p. 2). Went recruited 21 students, ranging from fourteen to sixteen years old, and coming from a variety of social and ethnic backgrounds as well as learning needs. The students met every other day during a 51-minute class period to participate in specific exercises which incorporated crossing the midline. The researcher incorporated a pre-and post-keyboarding test as well as made observations concerning student’s posture, hand placement and eye tracking. In her results, she determined that these exercises showed definite improvement in the student’s focus in general. The students themselves indicated that the exercises had helped them. In a study like

this, it may be difficult to correlate improved test scores with increased attention. The focus of the study was primarily on attention and not confidence or academic performance.

In BalAVisX, “every exercise has a requisite sequence and pace based on requisite technique that demand constant attention” (Hubert, 2014, p. 58). Rhythm is a natural part of life. Walking, breathing and our heart beat is an example of how our body engages in rhythm on a daily basis.

### **Conclusion**

Clearly the world of education must address what all students need to set them up for the most success in learning. Sousa (2011) reinforces this by stating that, “clearly, educators have to rethink now, more than ever, how to adjust schools to accommodate and maintain the interest of this brain” (p. 35) Various programs or movement activities have been developed in response to the student learning and engagement which has a component of movement in some format. Some incorporate rhythm and crossing the midline with minimal to moderate success. Each of these has value, however none of them address that physical deficits of vision, coordination and attention which are directly remediated through systematic rhythmic movement activities. These skills can also have an impact students socially and emotionally. At this point, the research is limited on the combination of these aspects, especially utilizing a BalAVisX program. BalAVisX activities build attention, and the ability to track visually through rhythm (Hubert, 2014, p. 67). I would like to explore further the relationship between learning, focus and movement. In my research, my intent is to evaluate the perception of the effects of the BalAVisX exercises on academic performance, attention and confidence in elementary students.

### Chapter 3 – Methodology

#### Theoretical Framework

The purpose of this study was to evaluate a program to determine its effect to increase confidence, academic ability and overall focus specifically for students with learning challenges. In order to do this, I utilized a mixed methods research platform to answer:

#### **Is BalAVisX a valuable program to help improve our support for students with attention and academic challenges?**

The perceptions of the school community are important determinants of the effectiveness of a new program, and can help to guide our decisions as we move forward in supporting struggling learners. A mixed methods platform provides a strong method to receive informed feedback. In addition, this data provides knowledgeable feedback for others interested in this or similar programs. Mixed methods research integrates quantitative and qualitative research approaches. The combination of these two helps to gain a better understanding of the question or problem addressed. According to Cohen, Manion, and Morrison (2000), mixed methods addresses the what and how. It “yields real answers to real questions that are useful in the real world” (p. 26). Cohen, Manion and Morrison (2000) state that the mixed methods approach can “enable a more comprehensive understanding of phenomenon to be obtained than single methods approaches and answers complex research questions more meaningfully, combining particularity with generality, patterned regularity with ‘contextual complexity’” (p.24). This allows for a variety of perspectives and provides a wide variety of knowledge and information. The diversity of mixed methods research allows for a more thorough evaluation of a particular questions. As a result, the knowledge generated provides a strong basis for future decisions. A mixed methods

approach, then, provided a logical platform to evaluate the effectiveness of a program, helping us to guide not only a program, but the elements within it that promote optimal learning conditions.

### **Study Context**

This study was conducted in the school that I work in. As a student support coordinator, my role is to support teachers and to ensure that all students have optimal learning opportunities. I was first introduced to the BalAVisX program in the fall of 2015 and felt that this program had great potential within a school system. After taking the training, we as a school, decided to host a training so that more of our staff could be trained to utilize this program. Bill Hubert, the founder of the program, requires that someone be trained in order to use the program with students. We felt that training the Educational Assistants would be of most benefit because of the flexibility in their time schedule and ability to incorporate it into their day with the students that they work with. Our main focus was to support struggling learners in Kindergarten and Grade 1.

The intent of the research was to evaluate a program that we had already incorporated into our school. We hosted the BalAVisX training in January, 2017 and started to implement it in the beginning of March. Our intent was to run the program for the duration of the school year and then evaluate the perception of its effectiveness. When we looked at establishing the program, we decided to primarily target students in the Kindergarten and grade 1 class as part of early intervention. Utilizing this program was new to the staff and school community so there were no prior impressions or knowledge to draw on. As a result, all the data collected was based on the current implementation of the program.

Teachers in the Kindergarten and Grade 1 were asked to submit the names of students who struggled with focus and attention as well as academically. In addition, the Educational

Assistants in the elementary grades, included BalAVisX exercises with their designated students. Parents of these students involved in the program were sent an email outlining the purpose of the program that their child was participating in. They were informed that this was a pilot program that the school was implementing with the intent of supporting struggling learners better. All the trained Educational Assistants helped to support the implementation of the program in the primary grades during times when they had some flexibility in their schedule. I was able to rearrange my schedule to be able to work with the primary students three mornings a week at the start of the day until recess. We felt that starting the day off with movement activities would be the most beneficial. Each student would participate in BalAVisX exercises three times a week for at least ten minutes a session. In total, thirty students were participating in the BalAVisX exercises.

As part of a mixed methods research, we felt that getting feedback from a variety of perspectives of those involved directly or indirectly would be the most beneficial. Because staff were working with the students, teachers and EA's were invited to participate and comment on any changes that they saw within the classroom. It was also helpful to get feedback from parents and students themselves on their thoughts on the program. A survey was set up utilizing Google forms to be sent out to teachers, parents, educational assistants and students. There was a potential of eighteen teachers and Educational Assistants as well as thirty students and their parents to complete the survey. In order to address confidentiality, all parents, teachers, educational assistants, and students involved in the program were invited to participate in a survey on their perceptions of its effectiveness. This was done by inviting all parties involved to participate with an explanation of its purpose along with a link to the survey. It was clearly stated, that participation was strictly voluntary and completely anonymous. The researcher

would not know who filled in the survey and who did not. Further, it would be specifically noted that participation in the survey would not jeopardize any future participation in the BalAVisX program. Because I was collecting information from my own school community for the purpose of a master's research project, a letter was sent to the school's Board of Directors providing information on the intent of the survey, its implication for our school and outlining its confidentiality. The board was asked to sign their endorsement of the use of confidential information to assess a school program as part of a master's paper.

As part of research ethics, it was important to address the concept of 'power over' support and teaching staff in doing research at my own school. All staff were explicitly informed that there was no obligation to complete a survey and that any participation was anonymous. This was important especially for the Educational Assistants in which there is a perception of power over. It was critical for them to remember that the survey was evaluating a program they were participating in and was in no way evaluating them. The questions and format of the survey completely respected the persons involved. There was no risk for anyone. Participants who completed the survey were informed that any statements that they made could be included as part of the thesis but there would be no way to link it back to them.

### **Data Collection**

In a mixed methods research, both qualitative and quantitative data is collected. This data focused on the participants' perception of whether the BalAVisX program had value for struggling students. The information collected looked at the program as a whole and not individual students. Overall themes of student engagement, increased academic performance and confidence were considered. All the information collected was from one single survey sent out at the end of the year. Quantitative survey results were put into a chart to determine if

specific conclusions can be made. Questions utilized ordinal format. This data looked at whether there appeared to be an improvement in overall focus, confidence and academic performance. Qualitative survey results were categorized looking for specific themes or a clarification of the data received. All the questions were based on observed changes and not on specific data. A comparison of the two research methods helped to determine if there is a strong positive, negative, or neutral correlation, between those who participated in the program and a change in them academically or in ability to focus, to support the program. These two types of survey questions complement one another to facilitate strong research data.

#### **Data Analysis**

The data analysis looked at specific trends in regards to three specific areas: focus and attention, academic improvement, and confidence. A comparison was made to assess the perception of the parents, teachers, educational assistants and students. Were the perceptions consistent with one another or was there a discrepancy between them? How and why might these have been different? What factors have contributed to this? These results were determined on the basis of the qualitative and quantitative data collected.

A positive correlation on whether the surveyed participants felt there was value in the program, was done by looking at the quantitative data, themes, and comments in the quantitative data. This will support the value of the program to the participants and will determine the continuation and possible expansion of a BalAVisX program at our school.

#### **Limitations**

The data collected in this survey was based solely on a single questionnaire. This was limited to the number of participants who were willing to complete the survey. A more detailed evaluation could have been attained if a pre-assessment and post-assessment was completed on

each of the students. It might have been beneficial for the teacher to fill in a rubric or journal observations throughout the week. As a researcher, I chose to limit my study to a post survey which, to a certain degree, limited the data collected. This ensured that the study focused on the program and not the students and allowed for the most ethical means so as to fully respect all the persons involved.

This study was based on the assumption that all students engaged in BalAVisX exercises for 10 minutes three times a week. The validity of this was based on the ability to ensure that this was fully carried out. This was hard to maintain due to student absence or changes in schedules which prevented the follow through as designed. The conclusiveness of the data is affected by the number of a survey participation, a short time frame, inconsistencies in the implementation of the program or the limitation of the survey. All of these may affect the overall results, but may not truly reflect the effectiveness of the program. A re-evaluation of the program in another year or two may be valuable for school purposes.



### **Chapter 4 - Results**

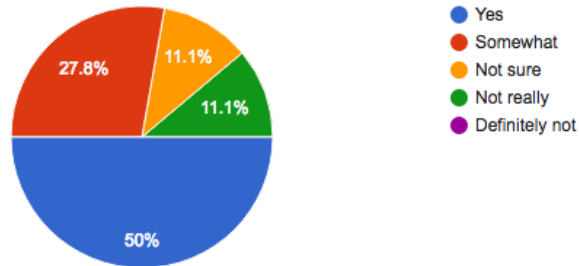
In order to determine the perception of whether the BalAVisX made a difference for the students with learning and/or focus challenges, a survey was sent out soliciting a response from the teachers, EA's, parents and students themselves. The information from the data collected were analyzed to determine whether they answered the research question:

#### **Is BalAVisX a valuable program to help improve our support for students with attention and academic challenges?**

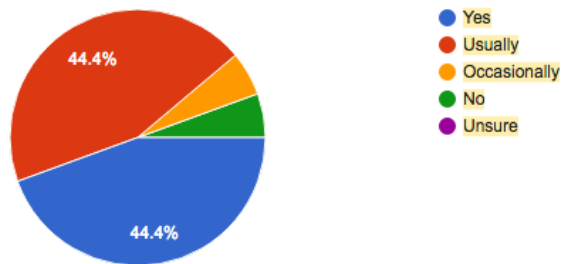
This study was based on direct intervention with thirty students. There were thirty-three responses from the survey results; eighteen were teachers and EA's, twelve were parents and three were students. All of them consented to participate and allowed their submissions and comments to be used in the findings of the research study. In order to answer the research question, specific aspects related to the program that might impact learning were surveyed. This included, attention, concentration, and academic performance in particular. Upon reviewing the data, the overall impression indicated that the BalAVisX program had a significant impact on the targeted students.

#### **Teachers and Educational Assistants**

The survey for the teachers and EA's involved twenty-one questions. The first question inquired whether the students enjoyed participating in the BalAVisX exercises. Almost all of them responded that their students enjoyed doing them, with the exception of one, who answered he or she was unsure. The teachers were then asked if they felt that releasing the students to participate in the exercises was worth it. The responses are noted in the following chart.



Overall, 72% of the respondents felt that it was generally worth releasing the students for the ten minutes. Then the teachers and EA’s were asked if their students were able to settle down quickly upon returning to class and start their work. This would be one indication that a break, whether directly related to the BalAVisX program, was beneficial and helped to promote increased brain engagement. Sixteen people responded “yes” or “usually” to this question.

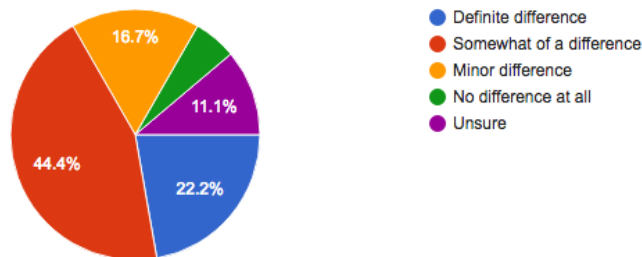


Teachers and EA’s were also asked to comment on the students’ ability to get back to work. In combining the results of those who said “yes” and “usually”, this represented 88.8% who felt that their students were able to return to work quickly. Looking at the qualitative results, two themes emerged from the responses given. Some of the responses are included below.

focus	<i>“more focused”</i>
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	<p><i>“One of my students had a great improvement in his focus in the long term, and for some it seemed to help in the short term.”</i></p> <p><i>“Some of my students were able to work and focus well upon returning, others took a bit of time but settled in after.”</i></p> <p><i>“The student was focused right away.”</i></p>
calm	<p><i>“Some were more calm that struggled with needing to move all the time.”</i></p> <p><i>“I found that one particular student, with behavioural challenges seemed more calm and ready to focus during center times after BalAVisX.”</i></p>

Another question was asked if they noticed any difference in their students’ ability to concentrate on their work. It was valuable to find out if students could return to work quickly and also concentrate longer than usual. The chart below shows the responses given on students’ ability to concentrate. Eight indicated that they noticed a difference and four indicated there was somewhat of a difference.



When asked to describe how it was different, teachers commented by saying:

*“They seemed more focused in the last few weeks.”*

*“For some students, it was a definite difference. They were able to work on writing for a longer time and seemed to have less trouble on specific*

*tasks that they needed to complete. Others needed more reminders to stay on task and took more time to complete their work."*

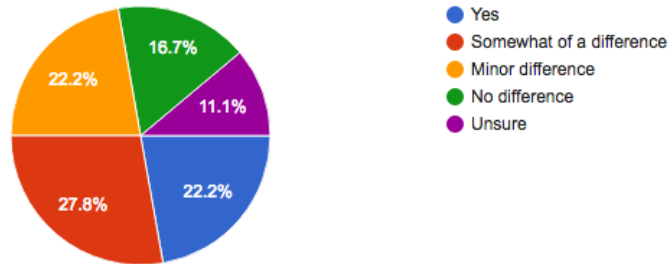
*"The student I work with has anxiety and BalAVisX helped reduce his worry therefore helping him concentrate on the task at hand."*

*"I would work one-on-one with him after doing Balvisx he was usually a bit better at focusing on the work at hand straight away, when other times when we didn't do the BalAVisX he would be more distracted and want to do different things."*

*"The student was focused and able to keep going."*

Our society in general operates at a fast pace and taking the time to think and concentrate is not always encouraged. Sprenger (2010) claimed that inability to concentrate affects all aspects of learning. The findings from this study offer a potential solution, suggesting noticeable changes in attention. This supports that the digital age may be a factor in the increasing number of students with attention problems. An inability to concentrate affects all aspects of learning as well as emotional intelligence. In their research, Carmahalan & Ipock (2015) found that movement was especially important for student learning. They concluded that movement was especially important for students who had difficulty focusing and attending in class. It is not clear whether it was movement in general or the specific movements of BalAVisX that led to the comments about concentration and improved focus.

Teachers and EA's were also asked if doing the exercises also translated into an improvement in listening or attending to instructions. The results for this question were mixed which are highlighted in the chart below.

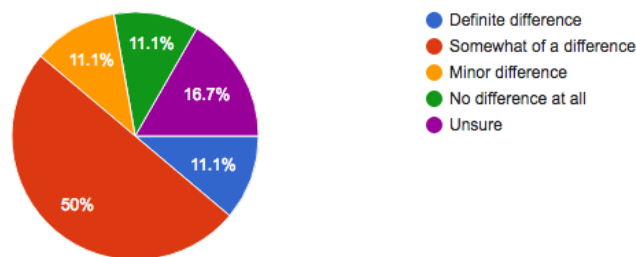


Another aspect of interest that was surveyed, asked whether there was a difference in the students' confidence and how it might have changed. In addition, they were asked about any possible mood changes.

Confidence	<p><i>"Really enjoyed showing what he could do to the other students in the program."</i></p> <p><i>"more confidence"</i></p> <p><i>"It has improved for most of the students involved with this."</i></p> <p><i>"A few students I work with struggle with printing and once their hands were warmed up, and they were focused in exercises for 10 minutes, I think the writing didn't feel as big a hurdle. They were more willing to write on their own and write at a greater length."</i></p> <p><i>"The student was willing to try more."</i></p>
mood	<p><i>"More confidence"</i></p> <p><i>"none to note"</i></p> <p><i>"More positive attitude towards self and work."</i></p> <p><i>"The student was more cooperative."</i></p> <p><i>"The children's mood did not change."</i></p>

Learning is compromised when stress level is elevated, which in turn affects overall confidence. Movement can impact stress by reducing the stress hormones and increasing the feel-good hormones. Learning requires taking risks, however numerous variables can contribute negatively to a student's stress level. Educators need to be aware of what the brain and body needs in order to learn (Gregory, Kaufeldt, 2015). Bunker (1991) affirms that movement is an essential component for children to learn and feel confident about their ability to learn. When viewing the qualitative data, staff noted positive impacts on overall confidence. This reinforces that confidence is an important aspect in learning.

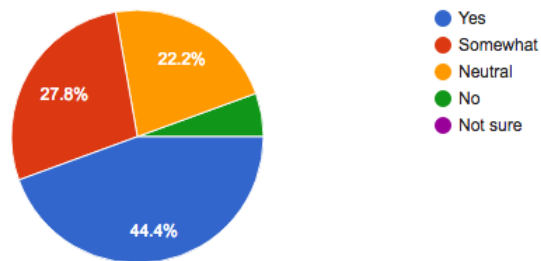
Another goal was to determine whether the BalAVisX program made a difference for the students academically. The following chart notes the responses to the question, "Did you notice an improvement in your students' academic ability after participating in the program?"



When asked what areas the teachers and EA's saw improvement, they noted; writing, tracking for reading, working harder on class tasks, reading and writing, as well as math. Most staff members felt that their students improved in at least one of these areas. Because BalAVisX works on visual tracking when doing the exercises, staff members were asked if they noticed a difference for the students' in their class work. The following showed the responses to this question which was answered by eleven people

Number of responses	Visual tracking Aspect
6	Does not his lose his place when reading as often
4	Improved fine motor skills
4	Does not skip words when reading as much
5	Better at copying
3	Does not move head as much when tracking words in reading

The last questions focused on whether teachers and EA'S felt that the program was beneficial or not, and if it was, who they felt benefitted from it the most. Fourteen of the eighteen responses felt that this was a beneficial program. They were then asked if there were students with particular profiles that benefited more.



Number of responses	Student profiles
9	Students who were behind academically
11	Students with poor focus and attention
7	Students with poor fine or gross motor coordination
6	Students with behavioural challenges

3	Students on the autism spectrum
0	Other

Teachers all do a variety of movement breaks within their day. When asked whether the students preferred class movement breaks or the BalAVisX, there was a wide mixture of responses. This seems to indicate that students value movement breaks but did not differentiate what type of break it was. A future study for school purposes, could compare the effects of students participating in a BalAVisX program with students engaged in random movement. The staff was also asked to comment on any negative impacts that they noticed. Time was the predominant theme that came out of almost all of their comments.

*"Finding the time in the day to be consistent with the program."*

*"There are times that the students miss out on important learning opportunities/lessons, so perhaps we could reschedule BalAVisX at a time when they would be something like Go Noodle instead?"*

*"It would be nice for the students to be able to be pulled out at a consistent time and even better at a natural transition time in the day."*

*"The students get taken out when there is a lesson going on and they tend to miss out of some academics."*

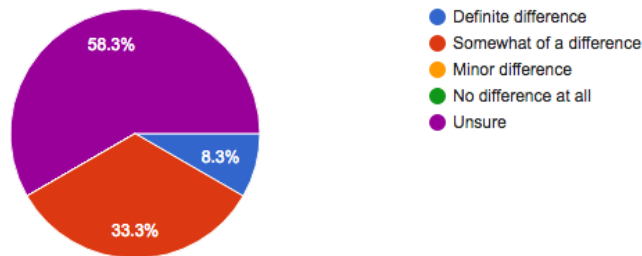
When asked if they would recommend for the school to continue the BalAVisX program with select students, 72% responded with a yes, 11% said maybe, with 17% neutral. Half of the staff felt that the program should be expanded and another 44% indicated maybe. As a result, the challenge of implementing the program within the day may have contributed to the staff's perception on the effectiveness of the program.



### Parents

The parent survey consisted of thirteen questions on the same themes as the staff. It was important to get parents' feedback on whether they felt that the program was positive and beneficial. When asked if the overall experience was positive, 75% felt that it was, 8.3% said somewhat and 16.7% were unsure. None of the parents heard their child expressing anything negative about participating in the BalAVisX program.

Parents were then asked if they noticed any difference on their child's ability to focus and attend to tasks in general and if so, to describe how it has changed. The chart below shows the responses.



Half of the parents commented on the improvement they have seen.

*"My child feels he can stay focused and pay attention with greater ease."*

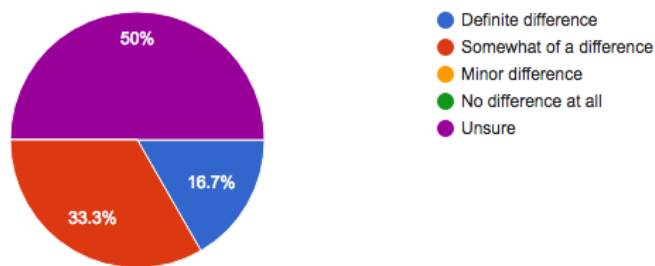
*"It really helps him to slow down to listen and learn. Movement is very important for him to learn."*

*"Both twins have excelled more in their school work and are somewhat more able to focus."*

Parents were also asked if they noted any difference in their child's confidence. In my experience, improved confidence can positively impact a student academically. Of the twelve

responses, 71% felt that there was definite or somewhat of an improvement in their child's confidence. One parent said, "My child has had increasing confidence since he started this program."

Another question asked the parents if they noticed any difference in their child's academic ability. The chart below shows the responses given.



Half of the parents felt there was a difference while the other half were unsure. When the program was set up initially, parents were given an overview of possible benefits but were not asked to look for improvement in specific areas. It is my impression that parents focus their attention on completing teacher directed activities and dealing with social conflicts but are not as aware or reflective with the role of interventions and its impact. Some parents are very involved in their child's school program, while others appear more disengaged. When incorporating additional supportive programs for a student, it would be beneficial to provide more awareness and feedback for parents. On the survey, it may have been valuable to ask the parents how aware of the program they were.

When asked to comment on what they have seen, parents commented as follows:

*"All over improvement"*

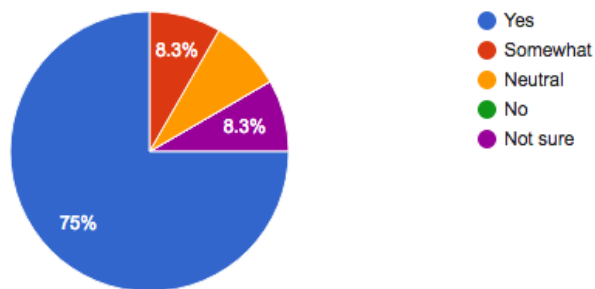
*"Everything has improved but with her young age it is hard to tell if it is because we are almost at the end of the year."*

*"I believe he uses BalAVisX as a body break, and I think it helps him calm and recenter if he is feeling overwhelmed."*

*"Willingness to do academic work."*

This qualitative data suggests, that some of the parents observed noticeable differences academically. Parents were not asked if they felt that the difference was a result of the movement exercises, but it is assumed that the change was more noticeable than in the past.

Finally, parents were asked if they felt that this was a beneficial program and whether the school should continue to offer a BalAVisX program. Of the twelve responses, ten felt that it would be good to continue the program, while the other two said maybe. The chart below shows the responses on their perceptions of the benefits of the program.



It is interesting to note that 50% of the parents were unsure of the benefit of the program, yet 75% of them recommended that it continue. This may indicate that the parents have a strong trust in school based recommendations when supporting students. In addition, parents may need more information or involvement to raise awareness of possible benefits and what to look for.

**Students**

Only three students filled in the survey. The intent was to compare the perspective of the students with that of the staff and parents. The survey was advertised as an invitation, which parents may not have passed along to their child. It is unclear whether parents felt that the students were self-reflective enough to fill in a survey or if the parents felt that they spoke for their child as well. The questions for the students were intended to gain a feel of what they thought of the program and if they felt there were any direct benefits. It provided them with opportunities to comment on whether they noticed any difference with focus or class work. The three students who filled in the survey were given consent to have their answers used for the purpose of the research study. In order to gain a strong sentiment from the student's perspective, a higher percentage of survey results was needed. As a result, this data is viewed as simple observations, but has no statistical value. Of the students who participated, two of the three, expressed that they enjoyed participating in the BalAVisX program, while the third one said he or she liked it a little bit. When asked to comment on anything they disliked about the exercises, one student said he or she liked everything, one felt that the balls were hard to catch and another felt they sometimes got tired doing the exercises. This seems to indicate that the students were focused on the individual aspects of the program, but were not aware of the intent of the program. If we expected students to be self-reflective, we may need to provide them with a greater understanding of the purpose of self-regulation strategies and what their body needs. The students were then asked to comment on whether they felt they noticed any improvement in the following categories.

Number of responses	Student self-evaluation
2	It helped me concentrate
2	I got more of my work done
2	I was in a better mood when I got back to class
3	I am getting better at lots of things
0	I didn't notice any difference in any of them.

These comments reflect a supportive indicator that the students were able to identify some positive outcomes from doing the BalAVisX exercises. All of the students felt they were getting better at lots of things where as two of three felt it helped their mood, could concentrate better and get more work done. The first three statements focused more on an immediate impact whereas the last statement is more of a general statement. This may have been easier for students to comment on. In order to gain a greater understanding of their perception on immediate effects, a simple rubric on how they felt before and after, would have been valuable.

Finally, the students were asked what they thought of the program overall. When asked what type of movement exercises they preferred, the students indicated that they like the BalAVisX exercises and the class movement exercises equally. All three students said they would like to continue with the BalAVisX exercises and thought that other students should have a chance to do them as well. One of the students commented that, "it might help them calm too and they might learn new things and meet new teachers." Despite the low numbers of surveys filled in, the feedback provides encouraging thoughts on the value of the exercise program. It helps to gain a broader understanding through the varying perspectives, on the overall perception of its impact and value.

**Data Analysis**

In looking at the results provided by the survey, I used the statistical recommendations by Mujs (2004) as noted in Research Methods in Education (Cohen, Manion and Morrison, 2007).

An effect size can lie between 0 to 1 when using Cohen's  $d$ :

- 0 - 0.20 = weak effect
- 0.21 - 0.50 = modest effect
- 0.51 - 1.00 = moderate effect
- >1.00 = strong effect

In order to analyze the data and determine the effectiveness of the program, the results were broken down into three categories: concentration, academics and overall benefits.

**Concentration**

In general, according to the teachers, their students were able to settle down quickly and return to work. It cannot be determined if the BalAVisX exercises were the sole contributor or if they benefited from the break away from class itself. There was an effect of 0.22 for definite difference in improvement in concentration and a .44 for somewhat of a difference. In combining these, this results in a moderate effect. The mode for the question, "Did you notice any difference in your students' ability to concentrate on his/her work?" was somewhat of a difference. It appears this impacted many of the students to a certain degree in a positive way. Many of the comments seemed to affirm that the exercises did indeed make a difference. Out of the thirteen qualitative responses, eleven wrote affirming comments about their students being able to concentrate better, which results in 61% of the total respondents. This is consistent with the quantitative results. On the parents' results, only 8.3% of them felt that it made a definite difference while the majority of them were unsure. It can be concluded that the teachers noticed some difference, but the effects were not wide reaching enough to be noticed at home. All of the

students indicated that they could concentrate better, however the effectiveness is hard to determine with the small sample size.

### **Academics**

Academic improvement was one of the goals of implementing the program. The combination of the “definite difference” and “somewhat of a difference” puts it at a .61 which is a moderate effect. Ten staff members commented that they noticed a difference in at least one area of academics and made positive comments about the program. Parents rated the academic improvement slightly lower, placing the results in the weak effect, although most stated that they were not able to judge accurately. The following chart compares the results of the parents and teachers/EA’s. The mode for the parents indicates they were unsure, however the mode for the staff members was somewhat of a difference. I consider these positive indications taking into account the short time frame for the study.

#### **Have you noticed any difference in his/her academic ability?**

	Teachers/EA’s	Parents
Yes	2	2
Somewhat of a difference	9	3
Minor difference	2	0
No difference	2	0
Unsure	3	6

It is helpful to note that teachers felt the improvement in the students’ level of confidence was consistent with their academic improvement. All of the students felt that they were making improvements in their school work. The following chart compares the results from the staff

members and parents. The mode for the parents indicated they were unsure, but the mode for teachers and EA's was somewhat of a difference. Twelve of the eighteen staff members noticed a difference to some degree in their students' confidence.

**Have you noticed any difference in his/her confidence?**

	Teachers/EA's	Parents
Definite difference	5	1
Somewhat of a difference	7	4
Minor difference	2	1
No difference	3	0
Unsure	1	6

Lavoie (2002) affirms the impact of confidence on a student's skill development. He also notes that academic improvement also improves confidence. Essentially, confidence plays an important role in student learning. Anxiety can be seen on the opposite spectrum as confidence. One of the comments from a staff member felt that his or her student showed much less anxiety after being a part of the program. This aspect was not part of the research question; however, it may be worthwhile to keep in mind in future considerations. In addition to feeling more successful in class, students may have benefited from receiving one on one attention from a staff member.

**Overall Benefit**

This study has reflected on, and analyzed data, to determine if utilizing a BalAVisX program has been beneficial for our students in helping to support them as learners. I concluded



that the response from parents and staff members strongly supports the program as a whole. The following chart shows a comparison of the responses given.

**Do you feel this has been a beneficial program for your students/child to be a part of?**

	Teachers/EA's	Parents
Yes	8	9
Somewhat	5	1
Neutral	4	1
No	1	0
Not sure	0	1

When reviewing the answers from teachers on which types of learners benefited most, the highest responses were given for students with learning challenges and those with poor focus and attention. These were the targeted areas addressed in my research proposal. This seems to indicate that there is a correlation between the BalAVisX and supporting struggling students. I would suggest that further research and study needs to be done to validate these findings but the perception is that this program has been beneficial.

**Conclusion**

The intent of this study was to answer the research question, "Is BalAVisX a valuable program to help improve our support for students with attention and academic challenges?" The study found that, in the perceptions of the participants, BalAVisX contributed to positive changes in the students. In reflecting and reviewing the data collected in the survey, specific themes arose which contributed to answering this question. This affirms that movement is beneficial for student learning. In order to assess whether this program seemed to make a

difference for students who had difficulties with attention, questions and comments were directed at the students' ability to get back to work, concentrate better and listen more attentively to instructions. Overall, the perceptions were affirmative for all of these aspects which are linked to an improvement in attention. Student learning is contingent on an ability to focus and attend in class.

In order to note whether there was any difference academically, questions related to confidence, visual tracking, fine motor skills and overall growth were addressed. Teachers commented that the students who benefited the most were those who struggled with academics and poor focus. It was observed that many of these students did not lose their place as often when reading which resulted in improved reading ability. Confidence also arose as a theme that also contributed to overall learning. Blaydes (2002) affirms that movement can instill significant improvements in memory skills, reading, concentration as well as communication. The limitations and potential of the program will be explored further however the general perception affirms the effectiveness of the program.

## Chapter 5 – Discussion and Implications

### Discussion

Supporting students and setting each student up to promote optimal learning possibilities is the goal of every educator. The new BC Education curriculum focuses on personalizing and meeting students where they are at in a stronger way than ever before. Education is about a learning trajectory, which means that not everyone learns and masters concepts at the same rate. This is reassuring for teachers and instills an educational model that honours everyone. Therefore, our guiding focus must address what each student needs in order to learn. Understanding the role of rhythmic movement and student learning has been the focus of this project. As a school, we believe that movement is an essential aspect in a students' day. We decided to implement a movement program called BalAVisX, which has its roots in rhythmic movement and crossing the midline. It was challenging at times to implement mainly due to scheduling challenges when working with students. I found that, once the novelty had worn off, many of the students in the grade 1 class, were at times reluctant to leave class when they were in the middle of a task. They settled in quickly once they got started on the exercises, and were generally engaged in what they were doing. However, student responses varied from accommodating to exceptionally keen, with all students participating willingly. These students were enthusiastic about the program and the self-confidence they were building was great to see. The Kindergarten students, on the other hand, were always willing to participate. They were focused on what we were doing all the time.

In my reading, research and through overseeing the BalAVisX program in place, I believe that BalAVisX has strong potential, utilizing rhythmic movement, to promote optimal learning conditions. Does it work for every child? That is a question that would need further

exploration, but I do believe that it has made a difference for some of our students. In the book, written by Loren Eiseley (1969), called; “The Star Thrower,” a boy is walking on the beach after a storm and notices the beach is littered with star fish. As the sun begins to rise he starts to throw starfish in the ocean, one at a time. A man tells him he will never be able to save all of them. As the boy reaches down and throws another one in the ocean he affirms that it made a difference for that one. Our goal in education is to reach every child but sometimes what we do or implement makes a stronger impact in some students than others. I believe that the potential of BalAVisX, has strong potential and am convinced that it worth continuing and expanding. We implemented it with specific students in mind; however, it may be just as valuable to establish for a whole class. This is a little harder to manage but may be something we can build toward.

#### **BalAVisX Program Recommendations**

In reflecting on the findings of the study, with implications for program implementation, a number of recommendations have become evident. A more consistent time frame during the day would be beneficial and possibly effective. During the program, a chart was used to keep track of how many times each week a student performed the BalAVisX exercises. A little over half of the students were able to get in three consistent sessions each week. This was due to student absences or changes in the class schedule which prevented students from participating in the exercises. The program was established so that students were taken out to do the exercises between 8:30 and recess with the assumption that starting off the day with movement would set them up for optimal learning. Most of the primary classes had Daily 5, a language arts program, during that time which was not always the ideal time for students to be taken out. Re-evaluating the time of day when students would participate in the exercise program would be beneficial. Overall the teachers had positive comments about the program, but felt that the timing was one

of the main criticisms. This is a sequential skill based program which does not allow for whole class participation like a class wide movement break. One of my goals is to train an older class so that each student in a primary grade has a specific person to work with. This may have great potential, but takes time to establish.

The length and time frame of running an intervention program should be re-evaluated. The program was started at the end of March and ran for 3 months, until the end of June. In a typical school calendar, the end of the school year has many distractions which affects the consistency of the program. It would be valuable to look at a longer time frame to see if that made more of a difference. Is there more of a cumulative effect that was not present in the time frame that we had established? I chose a ten-minute time block based on a minimum movement time needed, however, the ten minutes was an arbitrary number. There is limited research that indicates the length of a movement break that is necessary.

Additionally, it would be beneficial to provide parents with more and ongoing information of the program. Parents were sent an email providing them with basic information about the BalAVisX program prior to its start; however, parents were not given a schedule of what days their child participated in the exercises. This may have been valuable for them so they could make closer observations on how their child's day went, however it did provide authentic data and the parents were not 'primed' to be looking for improvement. Providing parents more detailed information on the schedule would have involved weekly or daily contact. The goal was to get three sessions in a week, but as noted before there were many disruptions to the established schedule. There were also changes in the schedule to account for the availability of the EA's or myself who were running the program. As a result, the schedule became quite fluid, which, again was frustrating for classroom teachers. In addition to the lack of an informed

schedule given to the parents, it appears not all the parents read or remembered receiving the initial informational email. I had contact with quite a number of the parents during the three-month time frame and realized that they seemed to lack an understanding of the purpose of the program.

### **Limitations**

A number of limitations arose when reviewing the study. One such limitation was the low response of the parents and students. A higher percentage of survey responses would have provided more clarity when reviewing the possible benefits of the exercise program. Because the data was based on a limited number of participants, it is hard to generalize the effects outside of our school community. This study was specifically set up in the Kindergarten and Grade One class, however, the impacts throughout the elementary grades may have been interesting to see. Are the benefits of this program wide reaching or is it more effective as early intervention? In this study, only students who were identified as having learning or focus challenges were included in the exercise program. It is widely believed as studied by Sousa (2006), that movement is beneficial for all students and learners. He states that, “armed with the knowledge that movement is connected to cognitive learning, teachers and administrators need to encourage more movement in all classrooms at all grade levels” (p. 233). Incorporating a larger percentage of students throughout the grades may have provided further data into its perceived effectiveness.

In addition to this, teachers and parents were asked to comment on changes they may have noticed. Due to challenges in research ethics, a pre-and post-test was not established but may have provided valuable information. This would have contributed further data that may have provided more specifics on the impacts, especially when looking at the variety of student profiles. Teachers were asked to make comments primarily about generalized observations, but

not individual students. Further program evaluations, conducted by the school community, rather than for publication, may provide us with more specific information.

Finally, the study was set up only as a follow up survey. More frequent feedback throughout would have provided more insightful information as to progress of students. This study was limited to overall perceptions so as not to evaluate students. In the future, a school based review of the program would not be limited to research ethics and could provide further insight into its effectiveness.

### **Significance**

Movement and crossing the midline are not new in the education world, but combining these with rhythm using bean bags and racquet balls are. This study provides valuable feedback not only for our school, but other schools as well, who want to strategically build movement into the day for struggling students. Including and surveying four different participant groups provides a broad perspective in which to evaluate the perceived benefits of this program. This study contributes insightful information for other schools to utilize when reviewing the type and benefits of movement. It affirms that we need to be intentional and informed on what movement looks like. Random movement may be a waste of time for some of our students. In my experience, teachers engage a wide range of movement types of breaks, whether a walk or run outside, dance or online movement videos. Because of the low number of student responses, this is hard to verify in this study. We need to further explore what types of movement are needed for the variety of students in our class. This data seems to indicate that this type of movement does increase student engagement, overall confidence and academic growth. It showed that there was a moderate effect on students' being able to settle down readily and get back to work, an improvement in overall academics as well as in their ability to concentrate. This research, based

on a single school, produced a strong platform for further study into the benefits of rhythmic movement. Holt, Bartee, and Heelan (2013) advocated that incorporating movement in the day is worth the time; showing that it can, “improve time on task, increase concentration and decrease classroom fidgeting (p. 485). In this study, students participated in 20 minutes of physical activity, typically a walk or run. They did not have any specific data to confirm their observations, but felt that students were much more engaged, alert and ready to complete their work with regular movement. This study contributes data to affirm their sentiment. Almost all of the teachers in this study felt that the time out of the class was worth it for their students. As educators, we need to continue to explore the effectiveness of different types of movement to enhance learning for all students. This research contributes valuable information for our school as we make decisions on future programs, and effective ways to evaluate them as well as a strong base for future studies for all schools.

### **Implications for My Own Practice**

As a student support coordinator, one of my roles is to recommend valuable programs for implementation that support students on a Tier 1, 2 or 3 bases. Based on the information gathered from the survey, after running a three-month pilot program in the school, I would like to recommend that we continue with a BalAVisX program to meet the complex movement needs. I am convinced that many students need more than just movement to help set them up for learning. BalAVisX focuses on a variety of aspects; balance, vision, auditory movement, which all work together. In addition, the confidence that students attain doing these exercises adds to its benefits. In meeting the requirements for the research ethics board, so as not to be exclusive, we focused on too many students in too many classes for the time frame that we had. I would like to recommend to our school that we focus only on one or both Kindergarten classes and also work



with some students who want to be assistants in the program. The flexibility in the Kindergarten class is easier to work with for the personnel that we have. In addition, I would like to see Educational Assistants continue with their student during their established break times. This provides a purpose for their breaks as well.

As I reflect on this program, it leads me to reflect on how to implement future programs. I believe it is important to make informed decisions when establishing new programs or ideas. Establishing where our students are through pre-and post-test evaluations would provide us more specific feedback on its impact. In addition, I would establish more student self-evaluation throughout. Student feedback is important, which is also a skill students are being encouraged to further develop in the new BC curriculum. This study then, provides valuable research not only for our school, but other schools considering movement based programs to support students who struggle academically and with focus and attention.

#### **Recommendations for Future Research**

I believe that the BalAVisX program has value and potential to provide a holistic movement break as opposed to the random movement breaks frequently set up by the classroom teachers. Further study should be made on the effects that the length of the program, as well as the length of the exercises themselves, have for different types of students. Essentially, we need to figure out how often and how long the students need to perform the BalAVisX exercises in order to make a visible difference. It cannot be assumed that BalAVisX was the primary contributor to the changes seen. A study within the school could be done by tracking different groups of students engaging in different types of movement. Overall, this study provided information that is valuable to understand how to support learning, but also lends itself to further questions.

**Conclusion**

This research study explored whether, “BalAVisX is a valuable program to help improve our support for students with attention and academic challenges.” I believe we have so much more to learn about how the brain and body works. Further to this, educators need to acknowledge that students now may be coming in with deficit skills which need to be addressed. Movement is fuel for the brain, however, I also believe that further study is needed to understand the effects of different types of movement. BalAVisX seems to have made a difference for some of our students so that they could concentrate better and as a result gain academically. In addition, the general perception of parents, teachers and students was an increase in confidence which over time will result in a greater willingness to take risks and try new skills. As an educator, that is one of our ultimate goals. Sousa (2011) drives this point home by stating, “clearly, we educators have to rethink now, more than ever, how we must adjust schools to accommodate and maintain the interest of this new brain” (p. 35).

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