

THE EFFECTS OF BAL-A-VIS-X ON STUDENT ACHIEVEMENT, TEST SCORES, AND  
SOCIAL BEHAVIOR FOR STUDENTS IN GRADES 1, 3, AND 5 AT DOUGLAS  
ELEMENTARY SCHOOL

By:

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## ABSTRACT

The purpose of this study was to take an in depth look at the impact of the Bal-A-Vis-X program when implemented in the classroom with students at Douglas Elementary School. Student academic progress and social behavior were monitored through a series of measures. Academic progress in reading and mathematics was collected three times throughout the school year: benchmark scores were established in the early fall, while monitoring scores were amassed both at the mid-year, January, and at year's end, May. The tools used were Measure of Academic Progress (MAP Test), the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), and Running Records. To monitor students' social behavior a teacher survey was created and students were evaluated at the same three times as the academic inventories were given. Classrooms (1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> grades), which became study groups, participated in Bal-A-Vis-X a minimum of four times a week for 30-minute sessions.

## INTRODUCTION

Learning is experience. Everything else is just information. ~Albert Einstein

This project researcher is an educator for the Saugatuck Public School District, and currently teaching in a 5<sup>th</sup> grade classroom. During her many years in education, she has seen an assortment of programs come and go. Some have come around again, just by a different name. What has not gone is the issue of students who struggle regardless of the program. Seeing students in the classroom today whose handwriting is illegible, who read below grade level, and who struggle socially, she has come to a juncture in her career where she sees that the daily routine of the classroom is not meeting the needs of the students. Some students are passing through the system with great difficulty and struggle with learning.

As these observations began to be made, so did the search for answers as to why so many of our school age children struggle academically today. The stress and pressure put on students by today's high standards of academic achievement and the lack of movement in everyday life contributes to the great difficulty students' experience. This search has taken her down the road of various movement based learning and brain integration programs, several of which promote physical movement in education. In turn, it has been found that movement helps students cope with the stress of learning and when their brains and bodies become integrated allowing for them to be in an optimal state of learning.

Bal-A-Vis-X, originated by Wichita teacher Bill Hubert, encompasses many of the components that have been beneficial in helping students develop brain-body integration which proves to be so necessary in learning. This program is a series of **B**alance, **A**uditory, and **V**ision e**X**ercises. These activities have varied levels of complexity which revolve around rhythm and require complete body coordination and focused attention. This series of exercises focuses on balance, auditory and visual teaming, and patterning. Mr. Hubert states in his book *Resonance*, that the use of the Bal-A-Vis-X program will help learning disabled students improve cognitive integration, help behaviorally disordered students "settle" their behavior, and help attention deficit and hyperactive students show decreases in impulsivity and increase attention span

(Hubert, 2007). He also asserts that at-grade-level students will achieve more academic success with less effort and that gifted students will improve physical coordination and experience less stress headaches.

It is believed by this researcher that although each child takes a unique path on the journey to learning, physical movement is essential to ALL learning. Through movement ALL are able to restore their integrated state of being. Hence, learners are more capable of receiving and processing the new information. The opportunity to study the effects of movement in learning and development in her own classroom has allowed this researcher to begin to pull together the threads that form the fabric of her beliefs that movement is essential to learning, that motor development is a life-long process, and that all ages benefit from movement.

### Statement of the Problem

The purpose of this study was to take a more in depth look at the impact of the Bal-A-Vis-X program with regard to students at Douglas Elementary School. We monitored students in the 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> grades to see if this program helped bring about an increase in student achievement and test scores, and observable positive changes in social behavior.

### Need for the Study

This study was initiated on the behalf of the students at Douglas Elementary who struggle with learning content material presented to them in a traditional school setting. Many students are asked to “sit-still” or “don’t fidget”: in other words, movement is removed from their daily routine of learning. The anticipated outcome of this study is to show a larger increase in learning from those students who participated on a regular basis in the Bal-A-Vis-X. Hence, this documentation lending itself to the implementation of a regularly staffed Bal-A-Vis-X lab at the Douglas Elementary site. The lab would serve as one component of a Response to Intervention (RTI) strategy in the areas of reading, math, and behavior.

## REVIEW OF LITERATURE

Stress is a part of everyone’s life. It is difficult to define because the symptoms and/or sensations displayed and felt tend to be subjective and differ from person to person. According to Harvard psychiatrist Dr. John Ratey (Spark, 2008), “anything that causes cellular activity is a form of stress” (pg. 59). What all researchers seem to agree upon is that stress is a necessity for our daily functioning up to a point. Stress can then begin to tear at the foundational structure of the brain.

When an individual is confronted with something in his life that he perceives as a physical or even psychological threat, the brain sets into motion a chain reaction to try to restore equilibrium to the body. Our bodies and brains are hardwired to react in this fight or flight scenario for the purpose of our own survival. The brain immediately jumps into action, dumping epinephrine, or adrenaline, and cortisol into the bloodstream. This usually triggers such symptoms as an increase in heart rate, blood pressure, and breathing rate. Blood flow is redirected away from the digestive system and to the large skeletal muscles in preparation for the fight or flight. Blood also leaves the frontal lobes of our brain and goes to the brainstem or our survival center. Our brains and

muscles get stiff and we can't think--we freeze. Due to this, "concentration and the ability to focus and reason using your higher brain functions is impaired" (Promislow, 2005, pg 47).

Dr. Carla Hannaford, is a biologist and educator who has researched the physiological basis to learning. Through her research, which has been thoroughly supported through scientific studies, she contends that each person has a "dominance profile" (Hannaford, 1997). The premise of Dr. Hannaford's "dominance profile" is that each hemisphere of a person's brain controls the opposite side of their sensory input: visual, auditory, kinesthetic. Remembering then, that under stress blood flow leaves the frontal cortex, or the thinking part of our brains, and goes to the brain stem; it becomes apparent that much sensory input does not have a great impact/impression on the person. Relating this to a student in a classroom, if a student is stressed about school or the learning of a subject, he/she will have greater difficulty learning due to the brain's response to stress.

With the brain and body reacting this way to the stresses in one's life, the question needs to be asked, how does one move beyond the stress and continue to function in everyday school situations, such as decoding or spelling. Researchers have found that one of the brain's most powerful growth factors, Brain Derived Neurotrophic Factor (BDNF), which aids in the development of healthy brain tissue, is stimulated by exercise (Medina, 2008). BDNF help keep the stress hormones from doing their damage. Problems arise when there is not enough of the BDNF; this is when stress begins to control the person. The good news is that we can learn how to recognize the signs of stress in our own lives and transform it so that we make ourselves productive and not self-destructive.

In recent years the studies of neuroscience has taken off. It has been documented in several studies that exercise and movement help expunge the stress hormones from the body and help the brain/body find equilibrium once again. Dr. Hannaford states,

Cross lateral movement, like a baby's crawling activate both hemispheres in a balanced way. These activities work both sides of the body evenly and involve coordinated movements of both eyes, both ears, both hands and both feet as well as balanced core muscles. When both eyes, both ears, both hands and feet are being used equally, the corpus callosum orchestrating these process between the two hemispheres becomes more fully developed. Because both hemispheres and all four lobes are activated, cognitive function is heightened and ease of learning increased (Hannaford, 2005, pg 92).

Physical movement stimulates cognitive functioning. Bal-A-Vis-X is one such program.

Bal-A-Vis-X 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. The program utilizes beanbags, racquetballs, balance boards, and multiple principles and activities from Education Kinesiology. It demands cooperation, promotes self-challenge, fosters peer teaching. It consists of multiple thousands of physical/auditory/visual midline crossings in three dimensions, crossings that are steadily rhythmic and auditorily-based, their pace the natural outcome of proper physical technique. In distilled essence, Bal-a-Vis-X enables the entire mind-body system to experience the natural symmetrical flow of a pendulum. (Bill Hubert, 2007, pg. 101).

Bill Hubert was an educator for 30-years. His experience spanned from the lower elementary ages all the way through the collegiate levels. As an educator he tried to find what and how to help those students in his classes that struggled. Over numerous years he studied and pulled resources from several people: Frank Belgau, balance boards; Ingolf Mork, juggling; and Dr. Paul Dennison, integrative movements. He then put all this together in a rhythmic manner which has now become known as Bal-A-Vis-X.

## METHODOLOGY

The problem investigated in this study was to determine how the use of Bal-A-Vis-X would impact student academic achievement, test scores, and social behavior.

### Subject Selection

Douglas Elementary is part of the Saugatuck Public School District. During the 2007-2008 school year, there were approximately 419 students in the elementary. The ethnicity of the school is comprised of 94.5 percent white, 1.2 percent Black, 3.8 percent Hispanic, and .4 percent other. Two classrooms at each level of 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> were used in the study. One classroom at each level served as the control group, the other as the study group. Parents of the three study group classrooms were contacted to obtain permission for their son/daughter to participate in the Bal-A-Vis-X study program. The following table shows the distribution of students both by grade level and by gender.

Table 1: Gender Distribution of Study & Control Groups

	Girls	Boys	Special Ed. Girls	Special Ed. Boys
Control Group 1 <sup>st</sup> Grade	8	7	0	0
Study Group 1 <sup>st</sup> Grade	10	6	1	0
Control Group 3 <sup>rd</sup> Grade	11	4	0	2
Study Group 3 <sup>rd</sup> Grade	14	6	0	0
Control Group 5 <sup>th</sup> Grade	14	8	1	0
Study Group 5 <sup>th</sup> Grade	12	7	1	1

The final control group had 55 students, 34 girls and 21 boys with 3 being special education students. The final study group was comprised of 58 students, 38 girls and 20 boys with 3 being special education students. Note that some students were eliminated from the study due to their moving out of the district or due to absence of students resulting in missed data collecting assessments. Because Douglas Elementary is focused on Response To Intervention (RTI), there are other students in both the control group and the study group who received individualized help in reading, math, or both. For the purity of this study those students' data were not included.

## Implementation of Bal-A-Vis-X into Study Groups

The implementation of the Bal-A-Vis-X in the classrooms of the study groups varied at each grade level pending schedules, availability of personnel, and physical location. In all three groups, students were given individual instruction followed by larger group instruction of the proper technique for executing the exercises. Exercises began first with the “partner-bean bag rectangle.” Exercises progressed from the 1-bag rectangle with a partner, to the oval; then the 2-bag rectangle with a partner, and then the oval. During this time students were monitored for proper technique, rhythm, and visual tracking of the bag. Once students could execute the exercises without error twenty times they were given permission to move onto the ball exercises.

Once the balls were introduced, students followed the same preliminary protocol of the partner rectangle and oval exercises. Partner groups were continually changing so that students became comfortable working with all other students in the group. At times, students who had mastered the technique would be asked to partner with a fellow classmate who was struggling. They were asked to teach their classmate how to execute the exercise properly. This peer teaching accomplished two things: 1) it built confidence in the student who was teaching, and 2) it allowed for the other student to learn to receive instruction from a fellow classmate. Because each of the three study groups were a part of that classroom’s curriculum, students did not experience being “pulled-out” nor was there any threat of physical, emotional, or academic damage by participating in this study. At this point instruction of the BAVX varied in each of the groups.

The first grade classroom BAVX program was led by both the classroom teacher and the PE teacher. Both teachers would assist and monitor progress of student skill and ability. Even though this was the smallest of the study groups, it was also the youngest. Also, due to their age, this group’s lack of fine motor development required much repetition of the exercises to achieve mastery. Hence, it was necessary to have the 2-to-17 ratio when working with this group. This group participated in BAVX four-times a week, for 30-minutes a session in the carpeted classroom. By year’s end many of the first graders were able to demonstrate proficiency in several of the partner exercises as well as many of the individual 2-ball exercises.

The third-grade study group, which was composed of 20 students, was led by the classroom teacher. This teacher has attended several BAVX training sessions and is quite adept at teaching the technique to students. For the purpose of this study, the classroom teacher reported that BAVX was used in the carpeted classroom 3-4 times a week with each session being approximately 30-minutes in length. It should also be noted that balance boards are a regular part of this classroom’s academic day. Due to space in the classroom, balance boards are not always used during BAVX but are made available.

The fifth-grade study group, due to classroom constraints, utilized the available gym space four-days a week for 30-minute sessions. The group was led by the classroom teacher and, for a portion of the year, also the PE teacher. An emphasis on technique was conveyed to the students as many of them might be asked to assist in BAVX training in other classrooms. Much of the warm-up with bean-bag was done with one partner standing on the balance board. Many students in this group--due to their age, motor development, and prior experience with BAVX--were able

to achieve many of the higher level exercises. Also made available to this group for the first half of the year were the eye-tracking exercises with the VISTAR Ball. This was implemented by a parent volunteer. During the first semester, most students received approximately 10 three-minute sessions tracking the VISTAR Ball.

### Instrumentation

Several pieces of data were collected throughout the year to measure student progress. Data collected for this study are as follows: DIBELS (Dynamic Indicators of Basic Early Literacy Skills), Running Record Reading Inventory, Visagraph, MAP Test Scores, and a teacher survey. Each is described below.

**DIBELS** - The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of standardized, individually administered measures of early literacy development. They are designed to be short (one minute) fluency measures used to regularly monitor the development of pre-reading and early reading skills. The measures were developed upon the essential early literacy domains discussed in both the National Reading Panel (2000) and National Research Council (1998) reports to assess student development of phonological awareness, alphabetic understanding, and automaticity and fluency with the code. Each measure has been thoroughly researched and demonstrated to be reliable and valid indicators of early literacy development and predictive of later reading proficiency to aid in the early identification of students who are not progressing as expected. When used as recommended, the results can be used to evaluate individual student development as well as provide grade-level feedback toward validated instructional objectives ([http://dibels.uoregon.edu/data/DIBELS\\_Data\\_System\\_Desc.pdf](http://dibels.uoregon.edu/data/DIBELS_Data_System_Desc.pdf), June 2008).

**Running Record Reading Inventory** – A Running Record is a record of reading behaviors that readers make as they are reading. Running Records were developed by Dr. Marie Clay, as a way for teachers to quickly and easily assess their students' reading behaviors "on the run", so to speak. Ken Goodman says that reading "miscues" are "windows into the reading process". They can give you a clear picture of the cueing systems that each student knows how to use and which systems s/he needs to learn. Having this kind of information about your students is invaluable when planning your next teaching steps and when working with individuals and small groups (<http://ww2.chandler.k12.az.us/tarwaterelementary/teacherresource/Running%20Records.htm>, June 2008).

**Visagraph** - Visagraph is an eye movement recording system with an analysis software, which makes it easy to evaluate reading skill. The system consists of an ordinary personal computer with analysis software, and measuring unit connected to an USB port on the computer and measuring goggles. You can use ordinary spectacles under the measuring goggles. The system records eye movements during reading of a short text on paper. The eye movement pattern is analyzed, and a number of characteristics for the reading are calculated automatically. After reading, the recorded eye movements can be studied as function of time. They can also be superimposed on the text read and played back in real time or slower. The analysis of the eye movements is completely automatic. Head movements are compensated and saccades and line shifts are localized. First and last line

of text read is discarded in calculation, since there can be irregularities on these lines. In the rest of the text, fixations, regressions and fixation times are counted and calculated. The result is compared to established standard values and presented both as absolute values and as values relative to standard values (<http://www.visagraph.com/>, June 2008).

**MAP Test** - NWEA developed Measures of Academic Progress (MAP), a state- aligned computerized adaptive assessment program that provides educators with the information they need to improve teaching and learning. Educators use the growth and achievement data from MAP to develop targeted instructional strategies and to plan school improvement. With the ability to test students up to four times a year, MAP test results help educators make student-focused, data-driven decisions.

More than 3100 school districts and educational partners use MAP Mathematics, Reading, and Language Usage tests to help all students learn. These assessments are unique in that they adapt to each student's ability, accurately measuring what a child knows and needs to learn. In addition, MAP tests measure academic growth over time, independent of grade level or age. Most importantly, the results educators receive have practical application to teaching and learning. MAP test results provide educators with timely information that guides instructional planning and school improvement (<http://www.nwea.org/assessments/map.asp>, June 2008).

**Teacher Survey** – Classroom success and social behavior were monitored by the classroom teacher through the use of a questionnaire filled out at the time of MAP Testing in October, January, and May (see Appendix A).

### Testing Procedure

The DIBELS and Running Records benchmarking tests were established at the beginning of the year for all students. The tests were administered by employees of the school who are responsible for reading interventions. The administrators of the test went to each classroom and tested each child individually. This set the beginning benchmark for students. From this benchmark students were identified as “at-risk”, “some risk”, or “low risk.” These tests were administered again in January and May.

The Visagraph testing was made available to this study through the office of AK Chiropractic Research Center. A technician was sent to the school on three separate occasions. In the fall the three study groups had their eyes evaluated for fixations, regressions, average duration of fixation, and anomalies. Due to scheduling complications only the fifth grade study group was tested in mid-year. And all three of the study groups were re-evaluated again at the end of the year.

The MAP testing is a district wide test administered by the media specialist to all students in the school computer lab. The test is used by the district to monitor AYP (Adequate Yearly Progress) of the students. Testing is typically administered over the course of a few weeks.

The final piece of data collected and used in this study was a survey administered to the



classroom teachers. They were asked to evaluate student behavior and performance in October, January, and again in May. These data were collected each time and teachers received an unmarked survey each time as not to be “swayed” in their evaluation of students.

## RESULTS AND DISCUSSION

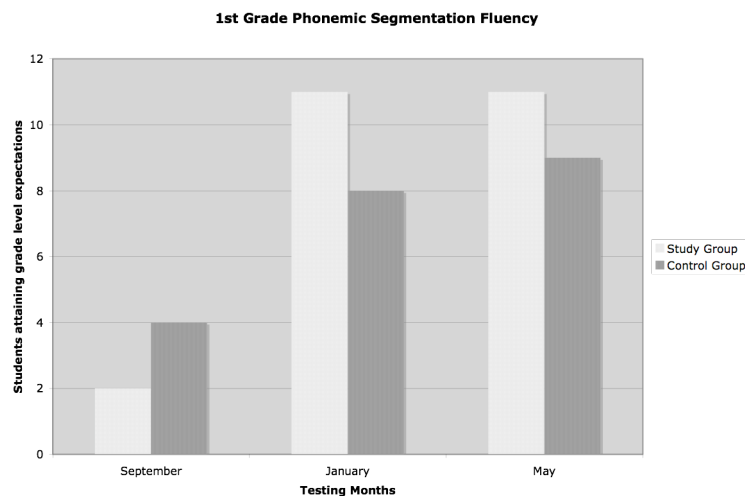
The problem investigated in this study was to determine how the use of Bal-A-Vis-X would impact student academic achievement, test scores, and social behavior for students in grades 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup>.

### Results and Discussion for First Grade

When looking at the testing results for the first graders, both groups seem to show good growth. However, upon taking a closer look, one will see that the study group, which ended up being comprised of eleven students exhibited larger growth.

The DIBELS testing for the first grade consists of three different components: Phonemic Segmentation Fluency, Nonsense Word Fluency, and Oral Reading Fluency. Chart 1 shows how both groups had 100 percent of their students achieve grade level expectations. The study group demonstrates greater growth and attained it by the mid-year.

Chart 1:



With the Nonsense Word Fluency test, both groups showed the same amount of growth, yet the study group demonstrated this growth by mid-year (Chart 2). Although these first two results reported show similar results between the study and control groups, mastery of these pre-reading skills in the early grade levels correlate to better reading fluency and comprehension. The study group’s oral reading fluency increased from 6 to 10 students, while the control group actually decreased in the number of students attaining grade level expectations in the reading fluency (Chart 3). In triangulating the data, again it is the study group that showed the larger gains in reading on the MAP Reading Test (Chart 4). The study group shows a 19.14 average increase in the groups RIT Scores, while the control group only showed a 7.83 increase.

Chart 2:

1st Grade: Nonsense Word Fluency

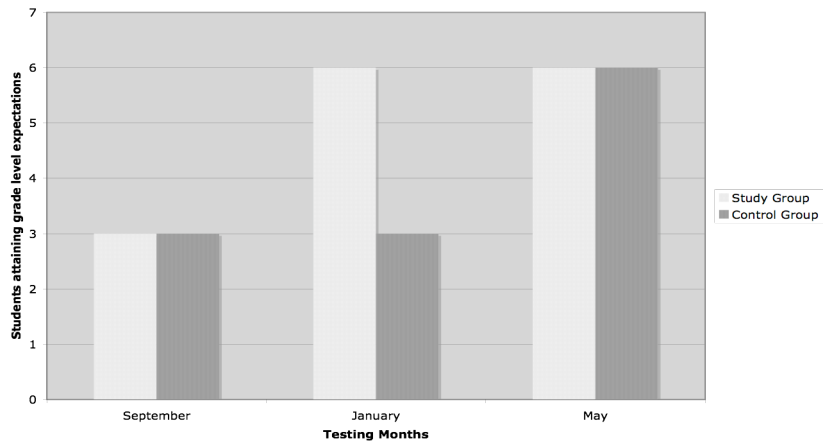


Chart 3:

1st Grade: Oral Reading Fluency

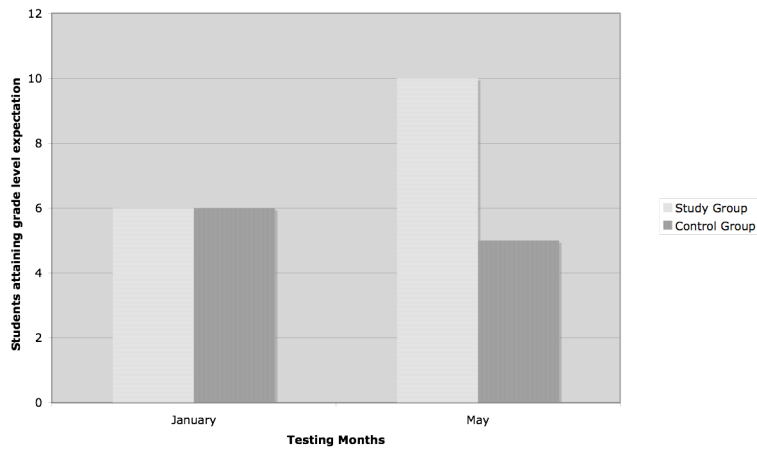
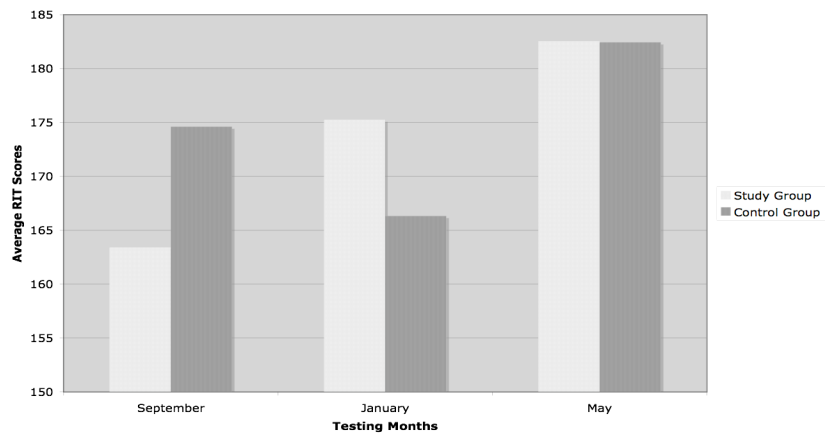


Chart 4

1st Grade: MAP Reading Average RIT Scores



Another test given only to the study group was the Visagraph. Cross-correlation of the reading scores offers evidence that improved eye tracking and movement lends itself to improved reading. Table 2 shows both the regression and fixation scores for both the right and the left eyes at the beginning of the year compared to the end of the year. While a few students did not show an improvement in their eye tracking, most students show vast improvement. The group’s average of fixations for the left eye dropped from 247 to 180; for the right eye 196 to 170. Similar results are found in for eye regressions: left eye went from almost 83 to 52, while the right dropped from 67 to 48.

Table 2: 1<sup>st</sup> Grade Visagraph

Student	Fixation / Left Eye		Fixation / Right Eye		Regression / Left Eye		Regression / Right Eye	
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
A	241	249	151	253	82	55	45	62
B	420	294	133	299	156	63	42	107
C	602	385	494	267	235	121	201	60
D	456	224	387	303	155	87	134	108
E	353	251	231	247	129	74	93	78
F	263	231	128	141	85	84	37	39
G	244	223	246	212	76	41	66	39
H	360	246	343	246	125	67	121	67
I	529	486	515	474	183	192	213	178
J	314	283	306	267	36	69	55	63
K	419	194	410	186	146	30	137	22
Averages:	247.11	180.35	196.70	170.29	82.82	51.94	67.29	48.41

Classroom success and social behavior were the last components of data looked at for each group. Once again, both groups showed growth and improvement through teacher scoring. Both sets of students showed the greatest increase for question number 5: Student’s oral reading is smooth/fluid (see Appendix for complete Teacher Survey). Teachers of both groups noted measurable changes (Charts 5 & 6). Yet the Study Group, whose changes in other reading data were more dramatic, validated the improved reading with teacher observation.

Chart 5

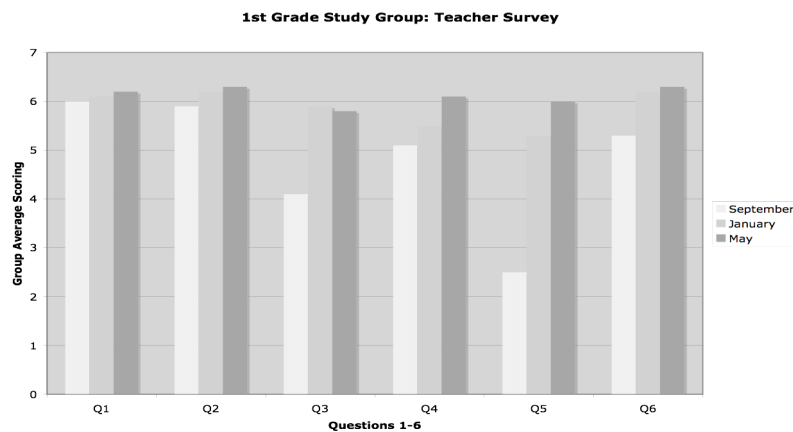
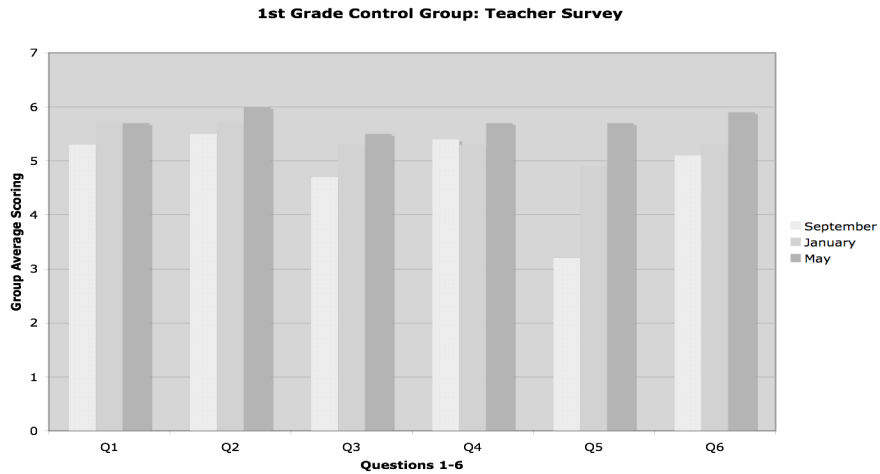
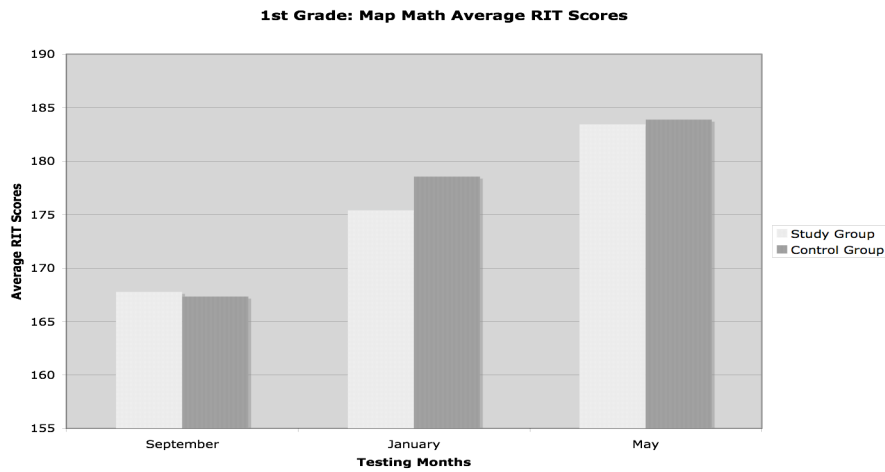


Chart 6



The two first grade groups showed parallel growth trends in math (Chart 7). The findings do not show one group out performing the other group.

Chart 7



### Results and Discussion for Third Grade

The findings among the study group and the control group in the third grade are similar to those found in the first grade. The study group results indicated improvements in the Oral Reading Fluency and the MAP reading test. The oral reading fluency improved by 21 words a minute (Chart 8) while the classroom average RIT score improved by seven points (Chart 9).

Chart 8

3rd Grade: Oral Reading Fluency

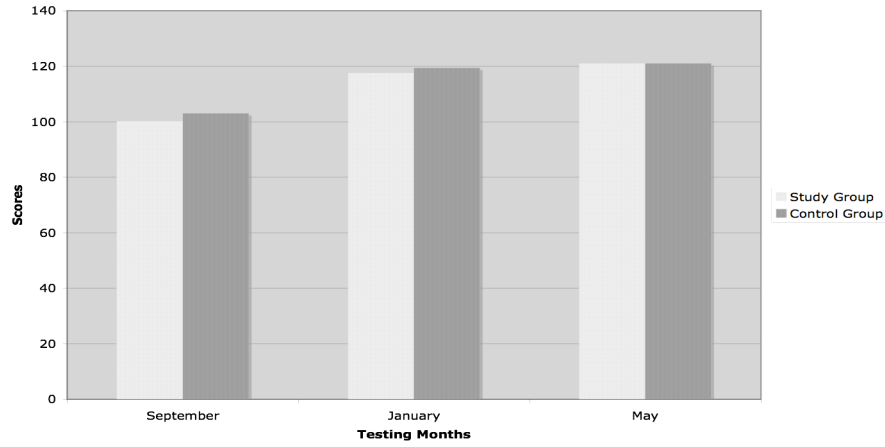
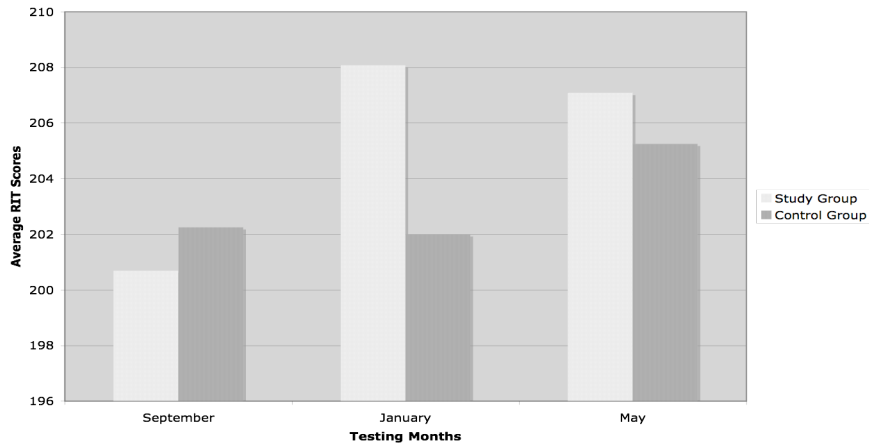


Chart 9

3rd Grade: Reading Map Average RIT Scores



Other data utilized in this study for the third grade were parallel in performance. Not only were the academic results similar, but the teacher ratings of academic advancement and social behavior were found to have little or no significant differences between groups (Table 3).

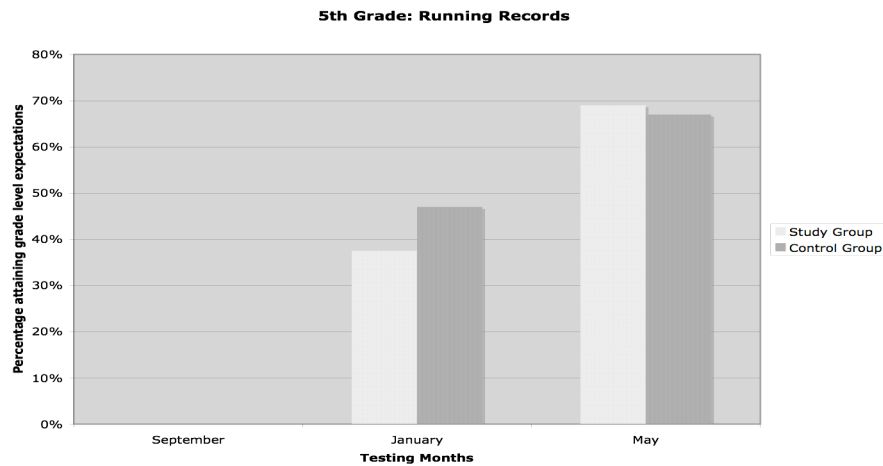
Table 3: 3<sup>rd</sup> Grade Average Scores on Teacher Rated Survey

	Study Group		Control Group	
	Sep	May	Sep	May
Question 1	8.38	8.5	9.16	9.18
Question 2	9.69	9.5	10	9.7
Question 3	9.69	8.75	10	2.9
Question 4	9.3	9.4	10	9.9
Question 5	7.61	8.75	8.75	8.45
Question 6	8.9	9.75	10	9.54

### Results and Discussion for Fifth Grade

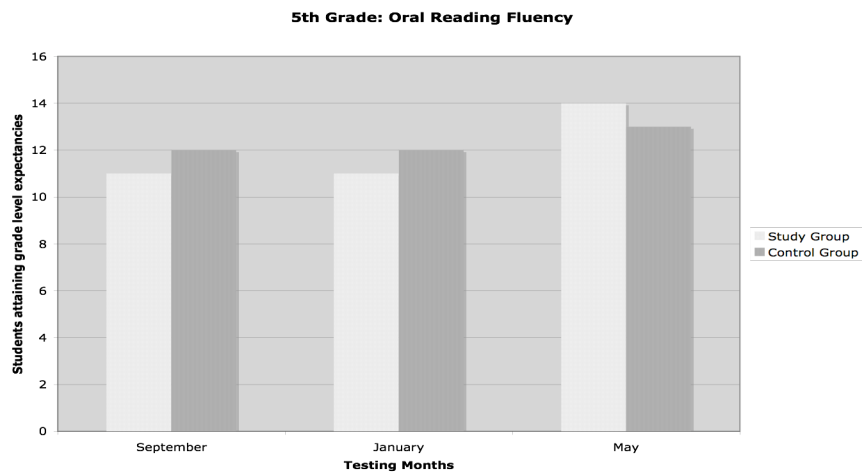
The fifth grade study group showed greater increases in the testing data. The results from the running records reading inventory show that the study group had a 31.5 percent increase in students attaining grade level expectations. Neither group showed any student attaining grade expectations at the onset of the school year. However, by the mid-year testing date the study group recorded 37.5 percent achieving the goal, while the control group recorded 47 percent. By year's end the study group made tremendous growth and had 69 percent scoring at or above grade level expectations, and the control group having 67 percent (Chart 10).

Chart 10



Similar data were recorded for the Oral Reading Fluency. The study group started with eleven students making the grade level benchmark yet grew that by three more students to end the year with fourteen students at grade level. This translates to an 18.75 percent increase of students reaching and/or surpassing grade level expectations. The control group, however, began the year with twelve and ended the year with thirteen. This represents an increase of 6 percent (Chart 11).

Chart 11



Math scores between the two groups were comparable. The study group began the year with eleven students at grade level and ended the year with fourteen. This represents an 18.75 percent increase in students attaining grade level expectations. The control group also recorded growth. During the year the control group had a 7 percent increase in students who reached grade level expectations.

Among the fifth grade study group, cross correlation of the data shows improved eye movement along with improved math and reading scores for many of the students (Table 4). Several students, (B, C, D, F, H, J, and P) made gains in all academic areas. This represents 44 percent of the students; and another 25 percent of the students improved in all but one area.

Table 4: 5<sup>th</sup> Grade Cross Correlation of Data

Student	Running Record		DIBELS		MAP Math		MAP Reading		Eye Fixation/L		Eye Fixation/R	
	Sep	May	Sep	May	Sep	May	Sep	May	Sep	May	Sep	May
A	3 <sup>rd</sup>	3 <sup>rd</sup>	109	124	217	228	224	221	202	134	186	135
B	3 <sup>rd</sup>	5+	93	115	215	235	202	220	185	46	185	172
C	5	5+	122	169	227	233	223	232	124	99	117	100
D	5	5+	94	142	197	215	199	214	216	185	219	179
E	3 <sup>rd</sup>	4	72	104	209	230	216	214	261	218	250	217
F	4	5+	108	142	215	220	215	223	215	195	217	191
G	3 <sup>rd</sup>	5+	122	144	202	216	214	205	111	118	88	117
H	3 <sup>rd</sup>	4	116	139	196	210	208	212	133	101	133	102
I	5	5+	173	195	230	227	237	234	89	83	88	94
J	5	5+	106	136	216	234	218	223	160	126	163	123
K	5	5+	138	153	222	240	219	216	143	128	144	127
L	3 <sup>rd</sup>	3 <sup>rd</sup>	117	119	228	225	215	213	175	162	173	164
M	5	5+	157	155	199	211	217	232	146	114	92	114
N	3 <sup>rd</sup>	4 <sup>th</sup>	81	107	218	218	213	211	120	131	83	130
O	5	5+	160	153	219	225	215	214	132	93	131	93
P	5	5+	150	159	219	226	216	221	113	62	113	60

## FINDINGS AND RECOMMENDATIONS

The implementation of Bal-A-Vis-X at Douglas Elementary School by classroom teachers with their students has proven to raise academic achievement and improve social behavior. While both the study and control groups at each grade level showed progress during the academic year, the study groups recorded marks indicating greater increase in one or more areas than the control groups. Many individuals in the study group displayed improvements in their personal affect in regard to attitude toward schoolwork, interacting with peers, and self-esteem. One can substantiate from this study that the use of the Bal-A-Vis-X program has been found to help facilitate learning for many of today's school children.

## REFERENCES

- DIBELS - [http://dibels.uoregon.edu/data/DIBELS\\_Data\\_System\\_Desc.pdf](http://dibels.uoregon.edu/data/DIBELS_Data_System_Desc.pdf) (June 2008).
- Hannaford, Carla, Ph.D. (2005). *Smart Moves, Why Learning is Not All in Your Head, (Revised Edition)*. Salt Lake City: Great River Books.
- Hannaford, Carla, Ph.D. (1997). *The Dominance Factor: How Knowing Your Dominant Eye, Ear, Hand and Foot Can Improve Your Learning*. Arlington, VA: Great Ocean Publishers.
- Hubert, Bill. (2007). *Resonance: Elise and other Bal-A-Vis-X Stories*. Wichita: Bal-A-Vis-X, Inc.
- MAP Test - <http://www.nwea.org/assessments/map.asp> (June 2008).
- Medina, John. (2008). *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School*. Seattle: Pear Press.
- Promislow, Sharon. (2005). *Making the Brain Body Connection, Revised*. Vancouver: Enhanced Learning and Integration Inc.
- Ratey, John J., MD. (2008). *SPARK: The Revolutionary New Science of Exercise and the Brain*. New York: Little, Brown and Company.
- Running Records - <http://ww2.chandler.k12.az.us/tarwaterelementary/teacherresource/Running%20Records.htm> (June 2008).
- Visagraph - <http://www.visagraph.com/> (June 2008).



## APPENDIX A

Appendix A: Bal-a-vis-x Questionnaire

Below are 6 questions/statements to be rated on a scale of 1-10. 1 being least often and 10 being most often observed.

Student interacts positively with peers	1	2	3	4	5	6	7	8	9	10
Student increases the number of words correctly spelled from pretest to post test	1	2	3	4	5	6	7	8	9	10
Student is able to work independently on math seat work	1	2	3	4	5	6	7	8	9	10
Student returns homework assignments when due	1	2	3	4	5	6	7	8	9	10
Student's oral reading is smooth/fluid	1	2	3	4	5	6	7	8	9	10
Test performance improves in all subject areas ( <i>this includes ease of test taking as well as scores</i> )	1	2	3	4	5	6	7	8	9	10