

# Does Gymnastics Enhance Reading? Yes!

*By Ralph R. Barrett*

## **Introduction**

As a gymnastics professional, you probably have taken for granted the exceptional achievements your students experience in school. More than likely, as most of us have done, you realized that your gymnasts success in school is a result of their dedication, time management skills, organizational abilities, and other attributes which they have likely acquired through regular participation in your gymnastics program. No doubt, this is true. However, has it ever occurred to you that there is another factor, perhaps far greater in its influence, which predisposes your gymnasts to success in school, particularly in their ability to read effectively? As a professional educator with over 20 years experience in public schools, as well as the former owner of Brown's Gymnastics Osceola in Kissimmee, Florida, my recent research is continuing to validate the direct result that gymnastics-type instruction has in developing neurological pathways in students. This enables them to be more successful in school than pupils not involved in sensory motor developmental activities comparable to those you offer.

## **Background Information**

Brain research over the past 50 years, particularly during the last 10 years, has demonstrated a direct mind-body connection. Of particular interest is the research by Dr. James Fadigan, who holds a dual doctorate in neuroscience and psychology. Especially noteworthy to those in the gymnastics community is the fact that Dr. Fadigan was a world class trampolinist in his day. During his numerous years of research, he has worked with stroke victims who have lost function of one of the hemispheres of their brain yet have reached 75-80% recovery in as little as one year's time. Fadigan has spent an immeasurable amount of time reviewing the research of such educational, neuroscience, and psychology gurus as Piaget, Gardner, Guilford, Gagne, and Bruner. In a nutshell, Fadigan's research revealed that the brain develops its ability to process information as such:

1. From conception to two years, various sensory motor skills are developed;
2. Thereafter, 26 identifiable cognitive skills (or multiple intelligences) are acquired; and,
3. After further enhancement of these two areas, content assimilation occurs.

The most interesting manifestation regarding this process is that most public and private schools teach exclusively at the third level. Furthermore, when students in schools exhibit problems with assimilating content, remediation is given in the form of additional content: generally either one-on-one tutoring or small group instruction. Thus, America's public education system does not adequately address the need to get to the root of the children's problems by providing sensory motor training. Albeit, millions of dollars are spent annually for occupation therapists, physical therapists, and other specialists who work sporadically with exceptional education students exhibiting underdeveloped sensory motor skills. Dr. Fadigan has developed and markets a highly successful program to address development of both sensory motor and cognitive skills. As a physical education instructor with limited funds, minimal facilities, and an exceedingly high student to teacher ratio, I utilized my vast gymnastics coaching experiences, as well as my public education teaching experiences, to

develop a SMILE Lab (Sensory Motor Intensive Learning Environment) to enhance the sensory motor skills of the students at our school. The results have been excellent!

## **SMILE Lab Development and Implementation**

When you started your gymnastics business, very likely you ran into financial challenges. As a physical education teacher, in order to develop new and innovative programs, monetary constraints are likewise a major obstacle. In order to purchase necessary materials to begin implementation of the SMILE Lab, I was fortunate enough to write two \$500 grant proposals which were funded by the Osceola Education Foundation, as well as being granted an additional \$1,000 from the Ross E. Jeffries Parent-Teacher Organization. Activity mats which help children develop such skills as cross laterality, visual acuity, and both dynamic and static balance were purchased. Over the past two years, the lab has been tweaked so that presently we can facilitate anywhere from one to 36 students at any given time.

The lab consists of a series of stations, each of which works on one or more motor skills. Students ranging in age from 3 to 18 have effectively used the lab. The concept is similar to many pre-school gymnastics programs across America, which emphasize movement, movement, movement. Safety is of utmost importance, as balance activities are done on either the floor or balance beams which are only a couple inches off the ground. Students receive training and guidance on the expected movement activity at each station. Nevertheless, as students master each station, they are encouraged to engage in "higher order activities." For example, in lieu of merely walking forward touching heel-to-toe on the balance beam, students walk backwards touching toe-to-heel with each step. Furthermore, with each step, students recite this simple poem as they perform the related movement: "Heel to toe, nice and slow; bend my knee and count to three; one, two, three." Even pre-schoolers can quickly master both this poem and its accompanying movements. For more specific information on the stations of the SMILE Lab, contact Ralph Barrett via Internet at Rbarrett13@aol.com.

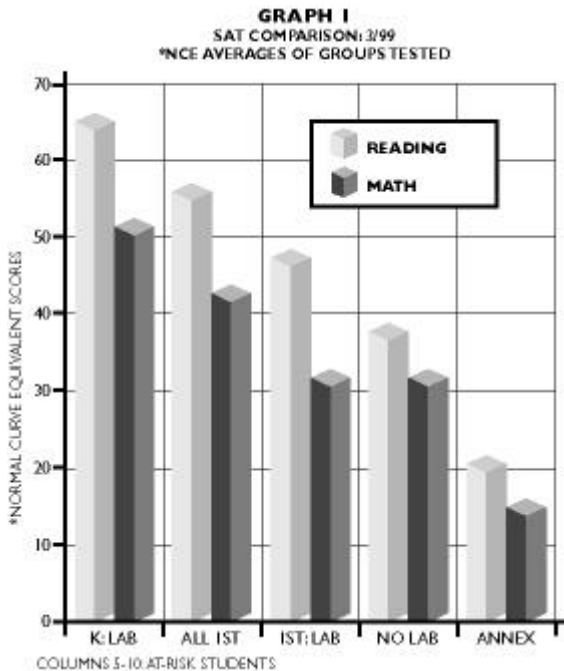
## **Validating Results**

In the two years the SMILE Lab has been operating, numerous positive results are revealing a direct correlation between gymnastics related movement activities and enhanced reading scores. The initial research involved kindergarten and first grade classes from Ross E. Jeffries Elementary and another elementary school in St. Cloud, Florida. Students from Jeffries visited the SMILE Lab twice weekly for 12 weeks, while the students from the other school were not involved in special sensory motor activities. The research served as the main component of a doctoral dissertation, with positive results being generated by the Jeffries students. The Gates-McGinite Reading-Readiness Test was given prior to the beginning of the research project and after the project concluded. The test generated "statistically significant" increases in the reading-readiness levels of the students who regularly visited the sensory motor lab.

During the 1998/99 school year, we continued to monitor the progress of this particular group of students at Jeffries Elementary. When administered the SAT for reading and math, the group demonstrated higher average test scores than their classmates who did not regularly visit the SMILE Lab.

Graph 1 displays these results, as the first two columns show the average Normal Curve Equivalency (NCE) scores for the kindergarten students who were now first graders. For both reading and math, this group scored nearly 10% higher than comparable first graders from the school. Columns five and six reveal the average NCE for a selected group of "at-risk"

students who regularly visited the SMILE Lab during the last semester of the 1998/99 school year, as opposed to columns seven and eight, which indicate the average NCE of comparable at-risk students who did not participate in special sensory motor activities. The last two columns on the right side of the graph disclose the test results of at-risk students who attended the school's annex in a rural setting, nearly 30 miles to the closest town.



**Columns 1 & 2:** First grade students who regularly attended the SMILE Lab as kindergarten students.

**Columns 3 & 4:** Combined averages reading and math scores for all first grade students in the study.

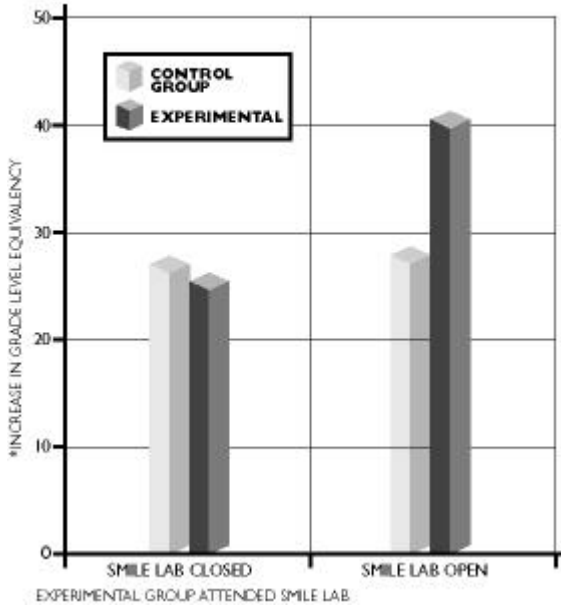
**Columns 5 & 6:** At-risk first grade students who attended SMILE Lab.

**Columns 7 & 8:** At-risk students not attending SMILE Lab.

**Columns 9 & 10:** Students attending school's "annex." Located nearly 30 miles from the school, the annex serves predominately low income students whose parents work on ranches or are migrant workers. No SMILE Lab was available to these students.

Perhaps the most dramatic results were revealed by **Graph 2**. This represents second grade students from the school who participated in the school's federally funded Title I lab. The initial two columns on the left show the average increase in Grade Level Equivalency on both a control group (which did not attend the SMILE Lab anytime during the research period) and an experimental group (which attended the sensory motor lab during the last portion of the research period). While the control group remained relatively static in their average GLE scores, the group attending both the Title lab and the SMILE Lab showed remarkable increases, jumping from the mid-twenties to an over 40 percent increase. This represents "accelerated" learning; i.e., improving at a rate of nearly two years during only a one year span.

**GRAPH 2**  
1999 SMILE LAB RESULTS  
MATH & READING COMBINED SCORES



**Column 1:** Combined average reading and math increases in Grade Level Equivalency (GLE) from October 1, 1998 through January 1, 1999 of at-risk second graders, as determined by computer generated results established while attending the school's federally funded Title I Lab.

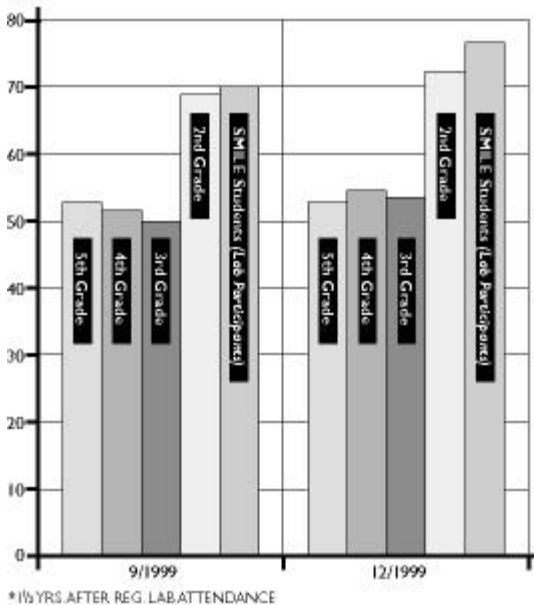
**Column 2:** Same as Column 1; results for students who would later attend the SMILE Lab in addition to the Title I Lab.

**Column 3:** Scores of students from Column 1 who attended only the Title I Lab; calculated from January 1, 1999 to March 1, 1999.

**Column 4:** Scores of students from Column 2 who attended both the Title I Lab and the SMILE Lab; calculated from January 1, 1999 to March 1, 1999.

**Graph 3** represents STAR reading test results from September until December, 1999. For the school, the best results were generated by second graders, and within the second grade the best results were generated by those students who had participated in the doctoral dissertation research one and one-half years previously.

**GRAPH 3**  
STAR READING TESTS  
Avg. Percentile Scores



**STAR Reading Test Results, measuring average percentile scores.**

The first five columns denote reading levels during September, 1999, while the last five columns demonstrate these levels as of December, 1999. The highest average levels were clearly demonstrated by second graders, especially those who attended the SMILE Lab regularly as kindergarden students, whose average approached the top quartile.

## Practical Application

Barrett's research, as well as over 50 years of related studies, serves as the impetus to begin promoting gymnastics, especially at the pre-school level, as a proven means to enhance students reading scores (Not to mention the increase in self-confidence, muscular development, listening skills, and all the other characteristics attributed to successful pre-

school, recreational, and competitive gymnastics programs). Indeed, Barrett was recently presented with the prestigious "Special Judges Award" from the Walt Disney Teacheriffic Awards judging committee. SMILE Labs are now being duplicated in school districts throughout Central Florida. The lab can easily be implemented into a pre-school gymnastics program.

## **What About Your Gymnasts?**

If possible, please take a little time to survey your current and former students to see how well they perform in school. If you send the results to Barrett via the Internet at Rbarrett13@aol.com, you will receive a copy of the compiled results. In addition to the positive impact gymnastics has on the physical development of children, as we continue to document the direct impact gymnastics has on learning, every gym owner will have another formidable marketing tool to promote the great sport to which you are committed. And isn't it always nice to have more students in your gym?

## **About The Author**

Ralph Barrett has spent over 20 years teaching in public schools. Additionally, Barrett has over 20 years gymnastics coaching experience. With a master's degree in educational leadership, Barrett has been recognized for his ability to take educational theory and put it into practice. His SMILE Lab (Sensory Motor Intensive Learning Environment) was recently awarded the Walt Disney Teacheriffic Special Judges Award. The Lab is generating positive results in the areas of increased reading levels and math test scores of participants. The SMILE Lab incorporates best practices of gymnastics instructors.

This article appears in the May 2000 issue of *Technique*, Vol. 20, No. 4.