



*Dr Caroline Leaf, a director of Switch on your Brain (LLC), was contracted as a consultant to the Advantage Academy group of schools to help improve instructional delivery by the introduction of the statistically researched and proven 5-step Switch on your Brain™ (SWOYB™), process in order to raise grades and TAKS scores and the amount of students passing TAKS. Over a period of 2 years Dr Leaf introduced the 5-step Switch on your Brain™ (SWOYB™) to 150 teachers, administration, leaders and 2000 students. The results showed a significant improvement in TAKS scores as well as significant qualitative improvement in academic knowledge for the subjects: Math, Science, Social Studies and Reading (English Language Arts).*

## **INTRODUCTION**

The Switch on your Brain (SWOYB™) 5-step learning process draws on an intersection of neuroscience, biology, cognitive neuropsychology, language and communication sciences and intelligence research. It is based on Dr Leaf's PHD research, her Geodesic learning theory and subsequent clinical and further research and application over 25 years.

The SWOYB™ process plays a vital role in the building of memory, which is the essence of the learning process. Research shows that true mastery of new information and skills is based on building, stabilizing and consolidating nerve cells in the brain. It is at these connections that information is actually stored.

The Metacog™ is the visual tool of the 5-step SWOYB™ learning process and is a brain-friendly way of writing that looks like the branching of a tree and its leaves. Its pattern and shape are dictated by the pattern and shape of the actual network that is being built as a person thinks. We are thinking beings and we think all day long. Thinking builds thoughts and thoughts occupy physical 'mental real estate' in the brain. Thinking properly will produce understanding and build good thoughts (which are the same thing as memories); conversely, bad thinking produced by 'jeopardy' TV quiz style quite literally make the brain toxic and dooms learning.

Everyone can think and learn, and the SWOYB™ system stimulates the natural design of the brain, which is good deep thinking that results in understanding and strong useful memory. Through the SWOYB™ 5-step learning process, students of all ages are provided with the skills necessary to become innovative lifelong learners. As such, the SWOYB™ 5-step learning process is at the cutting edge of brain and learning research because it teaches people how to think, learn and manage knowledge.

## **METHODOLOGY**

The SWOYB™ process was introduced in 2009 to AA teachers and is being implemented as a project in Advantage Academy over a 24-36-month period i.e. Phase 1 during 2009-2010 and Phase 2 during 2010-2011 and Phase 3 during 2011-2012.

### **Phase 1 (2009-2010)**

The timeline of Phase 1 activities is summarized below

- August 2009 – 3 day Teacher training in SWOYB™ 5-Step Learning Process by Dr Leaf.
- September to November 2009- Teacher implementation of SWOYB™ process. Creation of first set of Teacher Annual Metacogs™.
- December 2009- Problems encountered: implementation issues due to the structure of the instructional delivery and testing procedures not allowing for change in instructional deliver, teachers were trying to implement C-scope and weekly assessment which did not allow for sufficient teaching time.
- January to April 2010- Dr Leaf worked full-time as a consultant conducting classroom interventions and training principals, teachers and mentors at all four campuses in the SWOYB™ 5-Step Learning Process.
- May 2010- Curriculum Development involving creation of Annuals and Content Metacogs™ in all core subjects.
- June 2010- Intensive Teacher Training by Dr Leaf and development of an Operations Manual.

### **Phase 2 (2010-2011)**

- August 2010 (2010-2011 Academic Year) - Full implementation of the SWOYB 5-Step Learning Process under Dr Leaf's supervision
- Ongoing development of content Metacogs™ to finish the curriculum
- Virtual testing and correction of content and Annual Metacogs™
- Alignment of annual and content Metacogs™ for the 4 core subjects
- Ongoing teacher evaluation in order to assist in the conversion over from traditional teaching into the SWOYB™ classroom
- Ongoing teacher training and support to assist in the conversion over from traditional teaching into the SWOYB™ classroom



- Creation of training DVD's of the SWOYB™ process being implemented by teachers with students and narrated, produced and directed by Dr Caroline leaf to assist in the conversion over from traditional teaching into the SWOYB™ classroom

### **Phase 3 (2011-2012)**

- Oversee full implementation of the 5-step SWOYB™ process
- Ongoing support training of teachers in the 5-step SWOYB™ process
- Teacher evaluations

## **RESULTS**

### **The first TAKS administration**

Since the introduction of the SWOYB™ 5-step learning process the TAKS Accountability Standards for the first administration of the exam comparing the average of the 2006-09 to the 2010 results has shown:

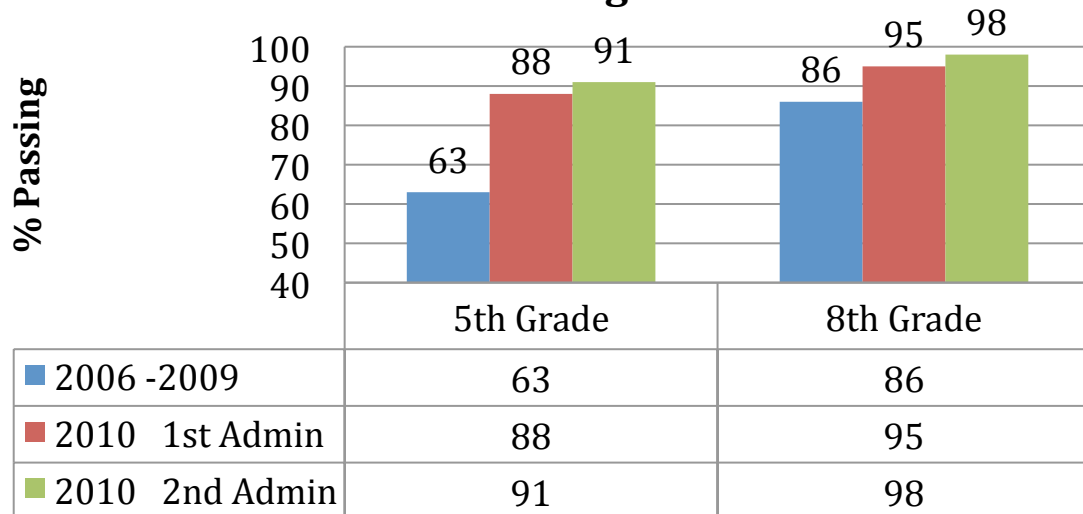
- 5<sup>th</sup> grade reading - 25% increase (63% to 88%)
- 5<sup>th</sup> grade math - 22% increase (55% to 77%)
- 8<sup>th</sup> grade reading - 9% increase (86% to 95%)
- 8<sup>th</sup> grade math - 11% increase (65% to 76%)

### **The second TAKS administration**

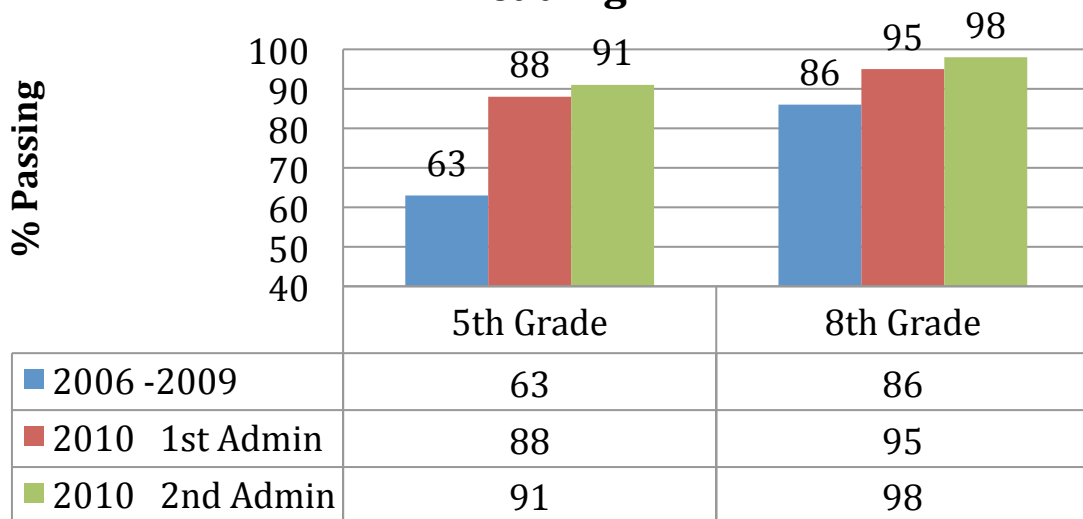
Accountability standards for the second administration has shown further increases:

- 5<sup>th</sup> grade reading - 3% increase (91% pass rate)
- 5<sup>th</sup> grade math - 10% increase (86% pass rate)
- 8<sup>th</sup> grade reading - 3% increase (98% pass rate)
- 8<sup>th</sup> grade math – 5% increase (92% pass rate)

## Quantitative Analysis of TAKS Pass Rates- Reading



## Quantitative Analysis of TAKS Pass Rates- Reading



### Qualitative Analysis Of The 4 Core Subjects (math, science, reading, social studies)

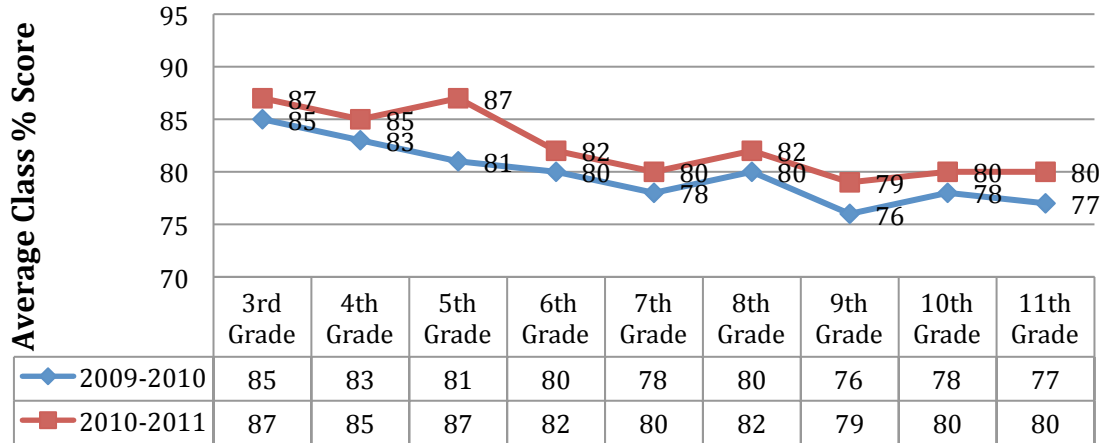
This analysis looks at the quality of content mastery (knowledge and understanding) of subjects as opposed to just *how many* students passed the TAKS. It is therefore qualitative as well as quantitative. Class averages across grades 3-12 were compared between 2009/2010 and 2010/2011.



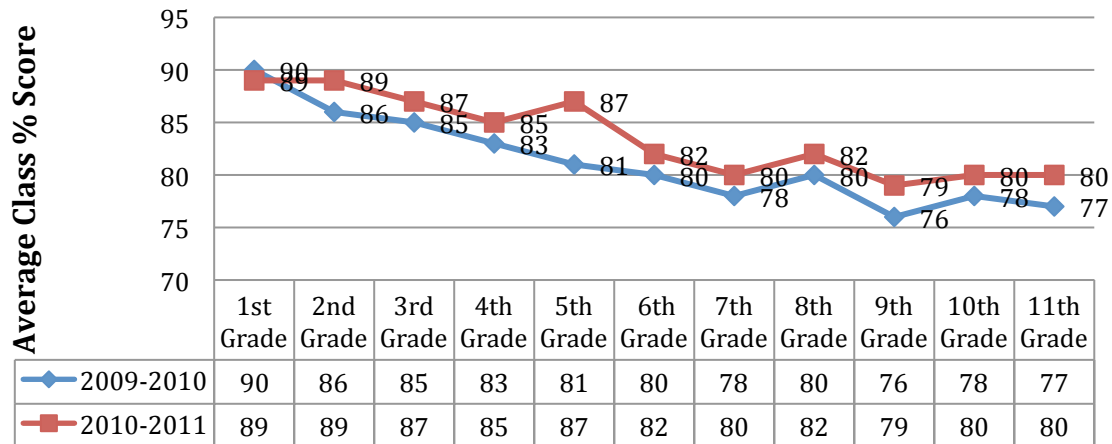
## SUMMARY

**MATH** - There was an overall increase of between 3-6%

### Qualitative Analysis of Content Mastery of Math

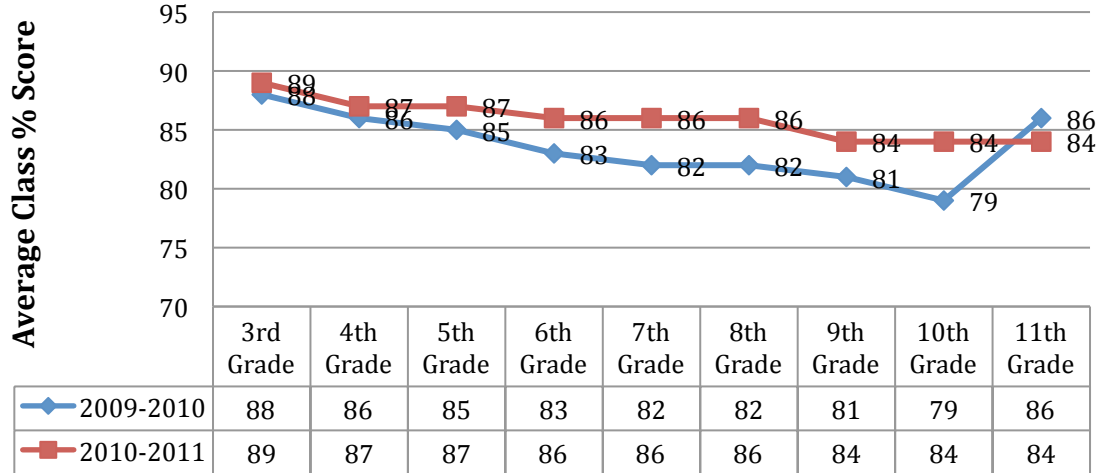


### Qualitative Analysis of Content Mastery of Math

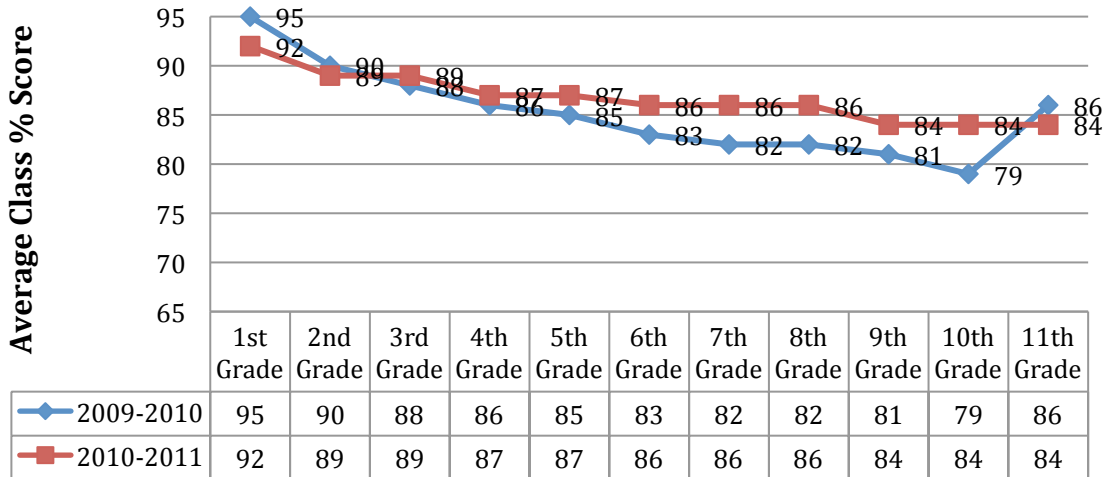


**SCIENCE** - There was an overall increase from grades 3-11 of between 3-5%

## Qualitative Analysis of Content Mastery of Science

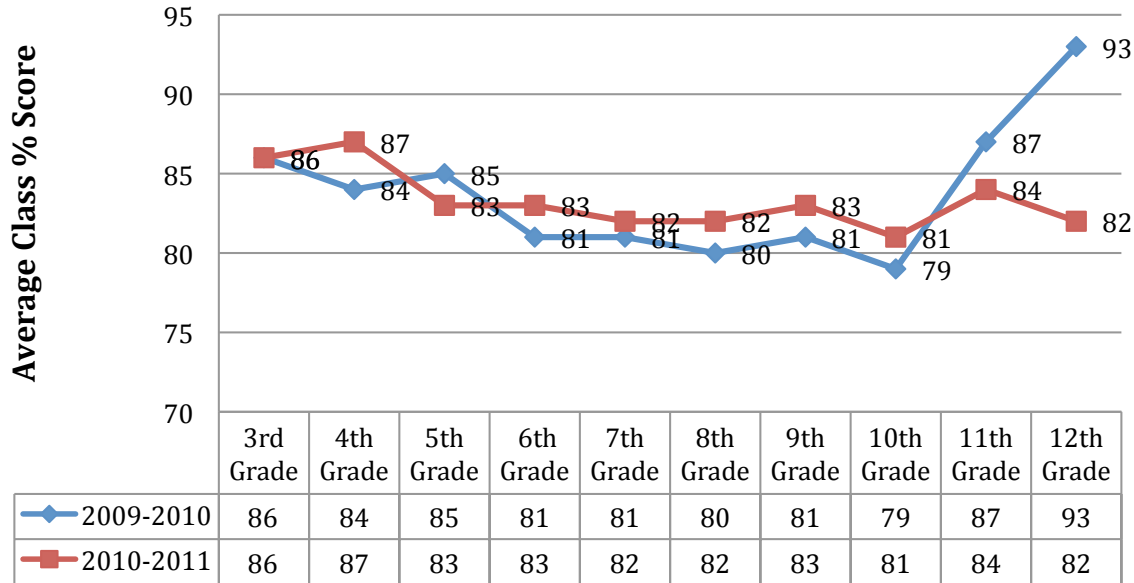


## Qualitative Analysis of Content Mastery of Science

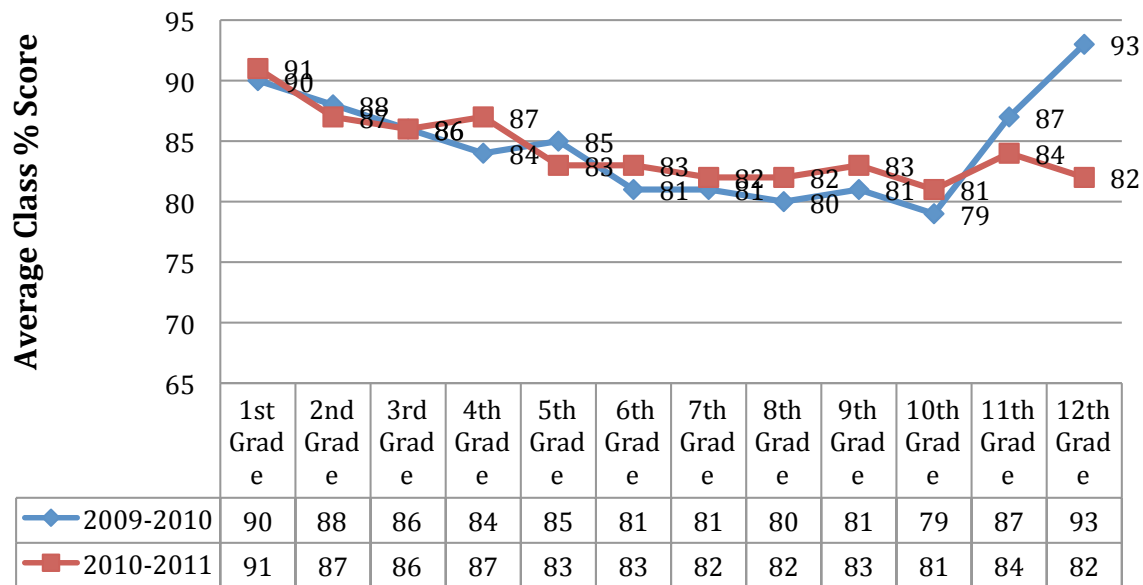


**READING** - There was an increase in grades 4<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>,10<sup>th</sup> ; of between 1-3%; 3<sup>rd</sup> stayed the same; 11<sup>th</sup> and 12<sup>th</sup> grade dropped

## Qualitative Analysis of Content Mastery of Reading

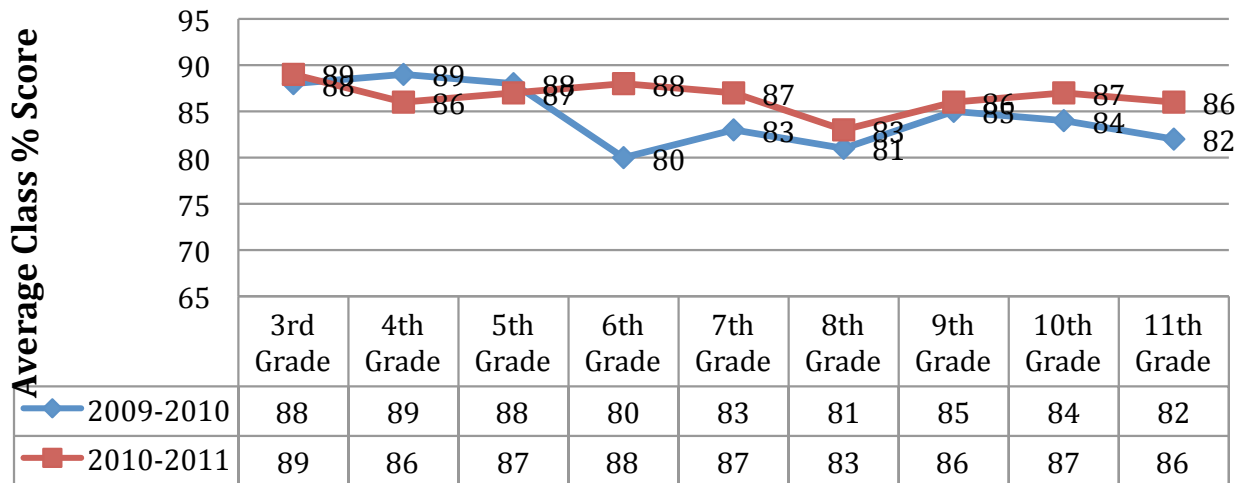


## Qualitative Analysis of Content Mastery of Reading

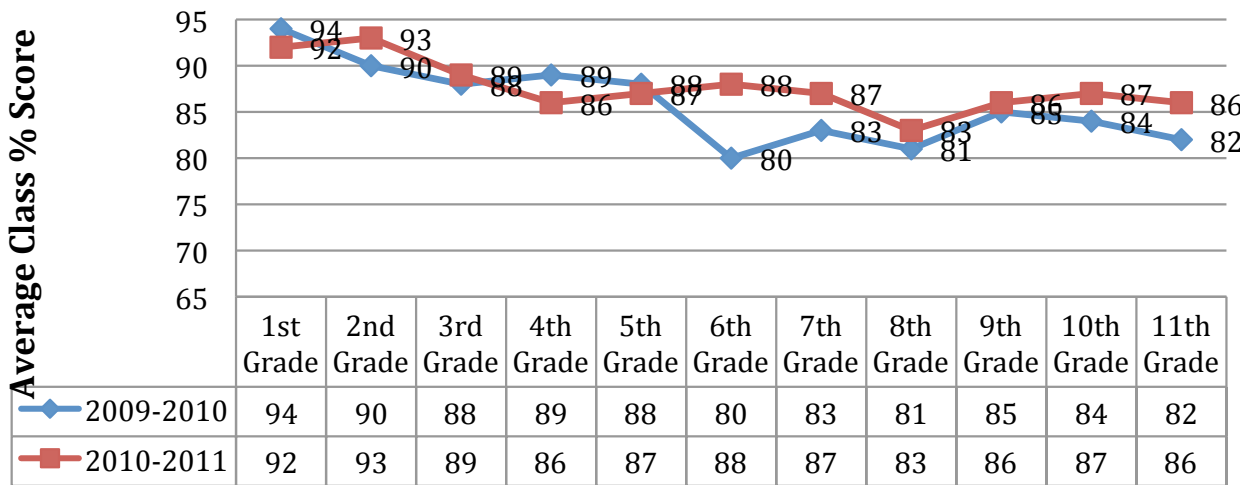


**SOCIAL STUDIES** – There was an overall increase from 3-12<sup>th</sup> of between 1-4%

## Qualitative Analysis of Content Mastery of Social Studies



## Qualitative Analysis of Content Mastery of Social Studies





## **DISCUSSION**

The results show that the students thinking, understanding and knowledge have improved over the 2010-2011 school year with introduction of the SWOYB™ 5-step learning process. Trends for the years 2006-2009 still have to be identified, which will give a stronger indication as to whether the trends have been altered in a positive direction, as has been achieved with the TAKS results. However, even though the improvements are conservative, it can be hypothesized that the changes we are seeing above are significant and have altered the trend of Advantage Academy in a positive direction because improvement was shown across the board and more students in AA are passing TAKS. Thus the implementation of the SWOYB™ classroom is starting to change the way the students and teachers think and approach learning. The few cases where we see drops can be linked to teacher knowledge, attitude and skills and is diagnostic.

I believe that these results show that the AA students are starting to think for themselves and learn to understand as opposed to memorization of random facts and over drilling and teaching-to the test, the latter of which are doomed to failure. This is evidenced across the nation in poor results and a drop in the creative quotient of 10 points annually.

These results are encouraging and further increases are targeted for 2011/2012 because the SWOYB™ curriculum will be stabilized and the staff and students more comfortable in its application.