BrainWare Safari
Broad-Based Improvement of Developed
Cognitive Ability
October 2010

In the 2009-2010 school year, a district in South Carolina used BrainWare Safari with all second-grade students in three elementary schools[1]. Before and after using BrainWare Safari, the district administered the Cognitive Abilities Test™ (CogAT®), published by Riverside Publishing. The CogAT is a group-administered, ability test battery used to assess students' abilities in reasoning and problem-solving. It can be used with students from kindergarten through twelfth grade.

CogAT results show a balanced view of students' developed cognitive abilities of the students. The verbal section has three subtests focusing on reasoning skills, flexibility and fluency. The quantitative section tests the child's understanding of basic quantitative concepts and relationships essential for learning mathematics. The non-verbal section uses geometric shapes and figures to identify how students look for shapes and patterns. A separate score is reported for each section. A composite, or total, abstract reasoning score is also reported. There are several different scoring options for the test, including percentile rank. The percentile rank indicates the percentage of students in the same age or grade group whose scores fall below the score obtained. For example, a second-grade student with a percentile rank of 90 on a particular section of the CogAT performed better than 90% of the second-grade students in the standardized sample on that section..

Figure 1 shows the average percentile rank for each on each section of the CogAT for all 257 second graders in the three schools on the Fall (pre-BrainWare Safari) and Spring (post-BrainWare Safari) administrations of the test.[2]

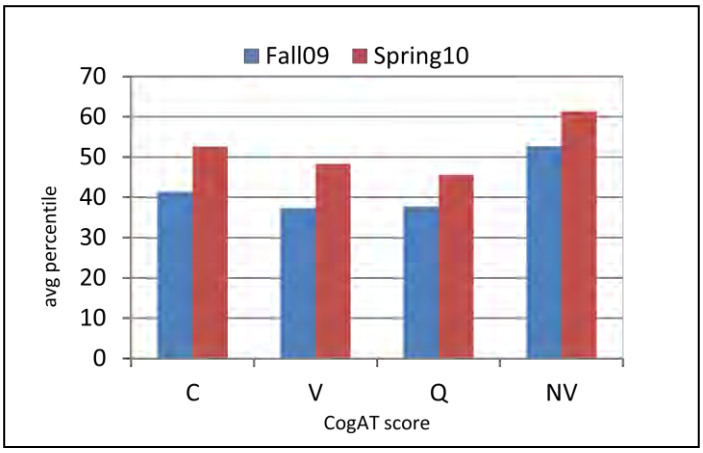

Figure 1: Average Scores 2009-2010 all students

On average, these students' scores increased 11 points on the Verbal section, 8 points on the Quantitative section, 9 points on the Non-verbal section. The average Composite score increased by 11 points. 95% of the students improved their score in at least one area. 72% of the students improved on at least 3 of the 4 scores.

The broad impact of the use of BrainWare Safari is evident in an analysis of the percentage of the students scoring within each decile of the percentile rank on the Compositive score. Because percentile is a ranking, rather than an average score, 10% of the overall population is in each decile. While 10% of the entire second-grade poplulation taking the CogAT is in each of the deciles, the percentage of a particular class or set of schools will likely manifest a different distribution.

Figure 2 shows the percentage of the 257 second-grade students with a Composite score at each decile on the Fall test. Before

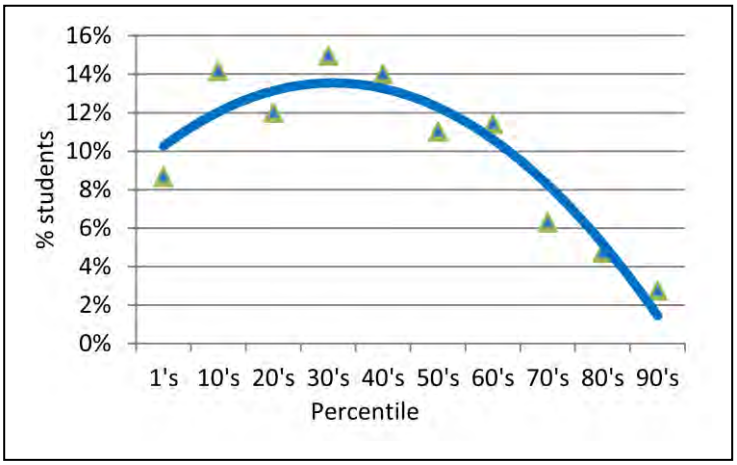

Figure 2: % Students Scoring at Each Decile (CogAT Composite)

1 . A full analysis of the investigation is available in a separate report.
2 . The students used BrainWare Safari with the expected fidelity of 3 to 5 times a week for 10-12 weeks for 30 to 60 minutes each session .

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using BWS, 15% scored in the 4th decile (between the 31st and 40th percentile), while less than 3% scored in the top decile (at the 91st percentile or higher). A best-fit second order- polynomial was calculated and is depicted by the solid blue line. This clearly shows that these 257students were generally performing below the national population on this test.

Figure 3 adds the results from the Spring test (depicted by the solid red line) administered following the students' use of BrainWare Safari.

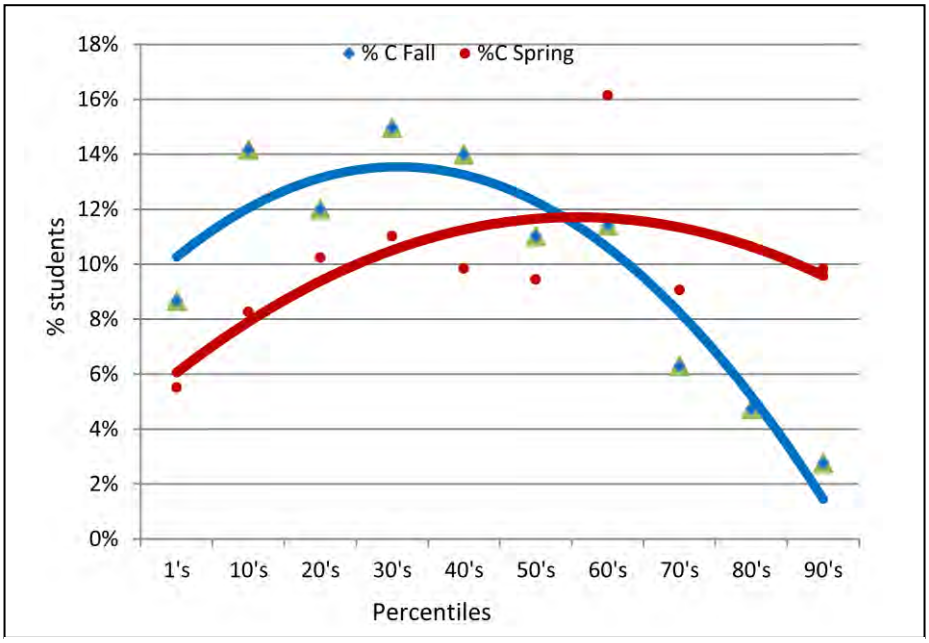

Figure 3: % Students Scoring at Each Decile Fall and Spring (CogAT Composite)

The performance of these students shifted markedly between the two tests, with lower percentages falling in the bottom deciles and higher percentages scoring in the top deciles. For example, the percentage of students scoring in the 4th decile (between the 31st and 40th percentile) fell from 15% to 11%, while the percentage scoring in the top decile (at the 91st percentile or higher) increased from 3% to 10%.

Conclusion:

BrainWare Safari has been shown to be effective in developing students' foundational attention, memory, visual and auditory processing, sensory integration and thinking skills. In this study, the impact of the improvement was shown for students at all levels of performance, from the lowest 10% of students to the highest 10% of students on the CogAT test. The second-grade students who participated in this study went from performing generally below national averages to performing better than national averages.

The CogAT test is used to predict achievement scores and for student placement. Thus, improving overall developed cognitive ability, demonstrated by the significant improvements in CogAT scores should foster stronger student achievement in academic pursuits and enable schools to challenge students with more advanced material.

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