Special Needs Students Benefit from
# Use of BrainWare Safari
School Year 2012-2013

In the 2012-2013 school year, Fillmore USD in Fillmore California implemented a pilot study with BrainWare Safari (BWS) in the 3rd grade classes at all four elementary schools. To provide the most information about the impact, they used a treatment-no-treatment model, with one class in each building as treatment and one class in each building as no-treatment. The no-treatment group followed their normal routine. The assessments for this particular study focus on the results of the California State Tests (CST). The 2012 2nd grade CST scaled scores will be compared to the 2013 3rd grade scaled scores for the same students for all four sites. One school also used the Otis Lennon School Abilities Test (OLSAT) was administered to the two classrooms at one site.

Some of the students who took the OLSAT were identified as having special needs. Adding this to the analysis has, in previous research, shown an impact for these students who have additional challenges in their lives, often in the specific areas of cognitive processing addressed by BWS. The special needs students in the treatment group worked with BWS at the same time and pace as their typically performing classmates.

Figure 1 contains the pre- and post-Total percentile OLSAT scores for the special needs students in the treatment group and the no-treatment group. Usually, students such as these are so far behind and dealing with such a large variety of challenges that any individual improvement could be very small, but still meaningful for that individual.

**Figure 1: OLSAT Total Percentile Score Special Needs**

In fact, two individuals in the treatment group show a clear impact in their total score. No impact was noted for either of the special needs students in the no-treatment group.
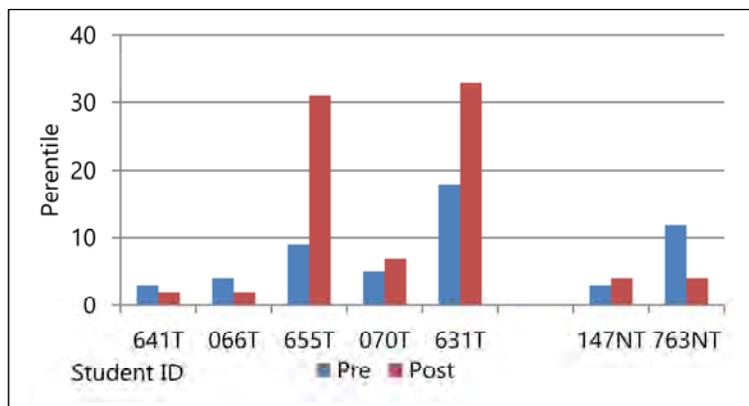
Student 655T achieved a 27 percentile-point increase in Total score on the OLSAT. Figure 2 shows the Verbal and NonVerbal OLSAT data for this student and also this student's ELA and Math CST scores. From the CST data, we learned that this student is classified as English Only. Student 655T used BWS for 40 sessions in an 11-week period, completing 96 levels. This is a very good level count for a student with Special Needs, and very close to the class median. In 2nd grade, student 655T received a scaled score of

**Figure 2: Student 655T – Verbal & Nonverbal Scores & CST scores**
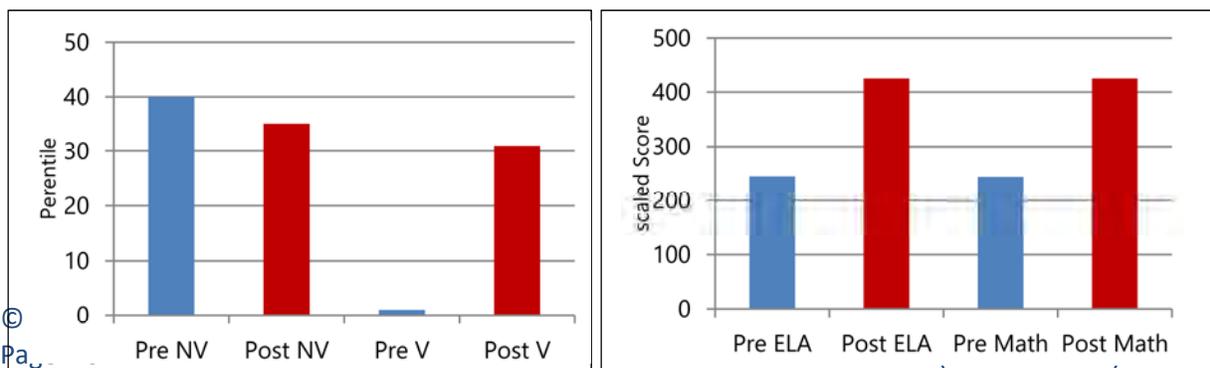
245 on the CST ELA, 116 units behind the state median. After using BWS, an increase of 180 units was achieved in the 3rd grade to an ELA scaled score of 425, surpassing the State median score of 345. Of particular note is that Student 655T's performance level on ELA in 2nd grade was Far Below Basic, moving up 4 levels to Advanced in 3rd grade. The Math CST score also increased for this student. In 2nd grade, the score on the CST Math was 244, 138 units behind the State median of 383. After using BWS in 3rd grade, this student's score improved by 122 units to 425, 26 units higher than the State median score of 399.   In terms of proficiency level, this student moved from Below Basic to Proficient, a 2-level increase in performance.

Student 631T achieved a 15 percentile point increase on the total OLSAT score. From the CST data we learned that this student is classified as EL. This student used BWS for 43 sessions over 10 weeks and completed 100 levels. This is higher than the median level count for the class and indicates the intensity that was achieved by this student in the program. Figure 3 represents the OLSAT Verbal and NonVerbal, in

Figure 3: Student 631T – Verbal & Nonverbal Scores & CST scores
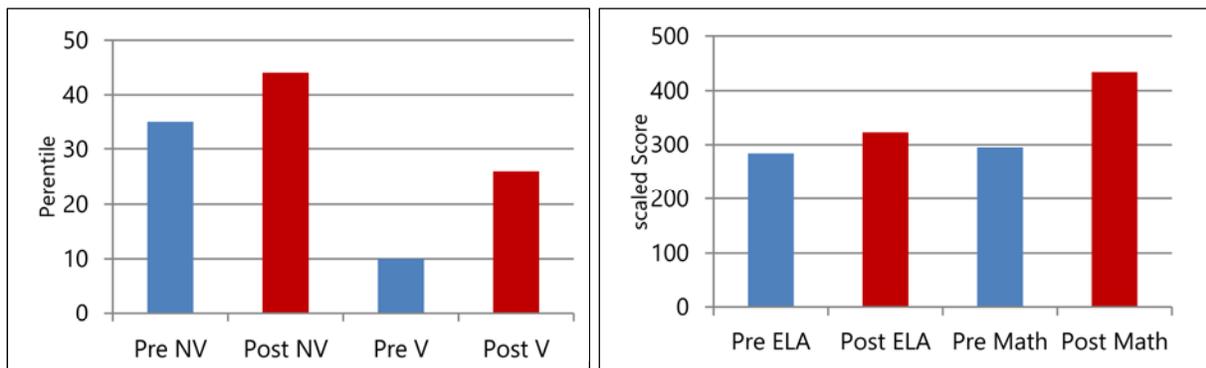
addition to the CST ELA and Math scores for Student 631T. In 2nd grade on the CST ELA, a score of 283 was achieve, 78 units behind the State median score of 361. After using BWS, in 3rd grade the ELA score increased 40 units to 323, closing the gap to the State median to 23 units.   On the CST Math in 2nd grade, a score of 295 units was achieved, 183 units below the State median of 383 points.   After using BWS, in 3rd grade this student's Math score increased 138 units to 433, 34 units above the State median score of 399. This student improved their proficiency levels in ELA from Below Basic to Basic and in Math from Basic to Advanced.

It is not an unusual result for students with specific learning difficulties who use BWS to make rapid progress in academic areas once the underlying cognitive deficits are being remediated.[1]

Overall Conclusions
- Two students with Speech and Language Impairments with notable OLSAT improvements also had notable CST improvements. Both increased on their ELA scores, the opposite of the trend of both the district and the State. They also both increased on their Math scores by more than the district (+19) and the State (+16).

1 . Abitbol Avtzon, Sarah. *"Effect of Neuroscience-Based Cognitive Skill Training on Growth of Cognitive Deficits Associated with Learning Disabilities" Learning Disabilities: A Multidisciplinary Journal. 18(5):2012 . pp 11-122.*