



## Overview

Perez Elementary School used BrainWare Safari (BWS) starting in middle of November 2012 and continuing to the middle of March 2013 with 22 students in 2<sup>nd</sup> grade and 16 students in 3<sup>rd</sup> grade.

There was significant improvement in academic performance for both the 3<sup>rd</sup> grade and 2<sup>nd</sup> grade students who used BWS.

- The students in the 3<sup>rd</sup> grade who used BWS experienced twice as much growth on average in their NWEA MAP reading scores as classmates who did not use BWS.
- 89% of the students in the 3<sup>rd</sup> grade who used BWS met or exceeded their projected growth on the test, compared to 76% for those who did not use BWS.
- The students in the 2<sup>nd</sup> grade who used BWS made significant progress in reading comprehension as measured by their TRC levels. At the beginning of the year, almost 2/3 of the students were performing below or far below grade level. At the end of the year, only about 1/3 of the students were performing below grade level and 2/3 of the students were performing at the proficient level or above.

## 3<sup>rd</sup> grade: BWS and NWEA Reading

NWEA Map testing is an adaptive, grade-level assessment that is aligned to content area of the state standard. Often schools will use this test as a way to determine what areas the students are weaker in so that the course work can be appropriately differentiated. There are various MAP tests – Reading and Math are the most common at the elementary schools and it usually is not used before the 3<sup>rd</sup> grade, although it is available for younger students.

This analysis includes data from two third grade classrooms. Class 1 used BWS with 16 of 25 students. Of those 16 students, there were 9 who also had NWEA Reading Scores. In addition, there were students in class 1 who had NWEA reading but no BWS. Class 2 had no students that used BWS. Table 1 provides a legend of the groups of data that will be discussed in this report.

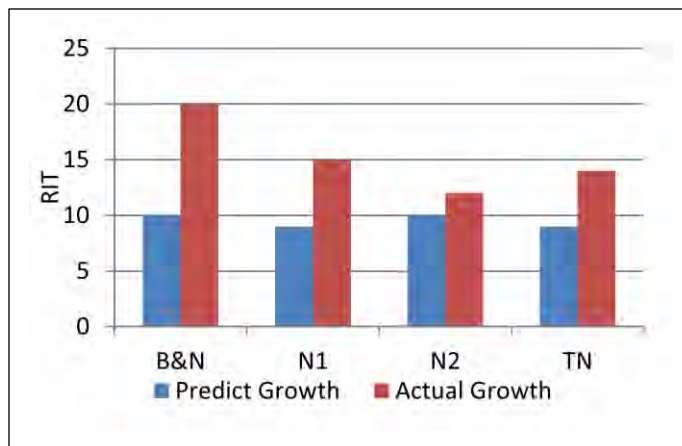
<b>Description</b>	<b>Symbol</b>
BWS + NWEA class 1	B&N
NWEA class 1	N1
Class 2	N2
Both NWEA only	TN

The 9 students who used BWS started November 19, 2012 and last logged in March 13, 2013. Allowing for school breaks, they had 14 weeks of BWS usage. During that 14 weeks, they averaged  $24 \pm 2.2$  sessions with a minimum of 19 and a maximum of 26 completing an average of  $103 \pm 17$  levels with a minimum of 68 and maximum of 125 levels. This frequency of usage is generally consistent with the recommended protocol of 30 to 50 sessions in a 10-14 week period. The intensity of usage, indicated by the number of levels completed with an average of 103 levels (compared to an average of 105 levels for 3<sup>rd</sup> grade in previous studies with fidelity to the protocol), suggests that the 3<sup>rd</sup> graders at Perez had the appropriate intensity.

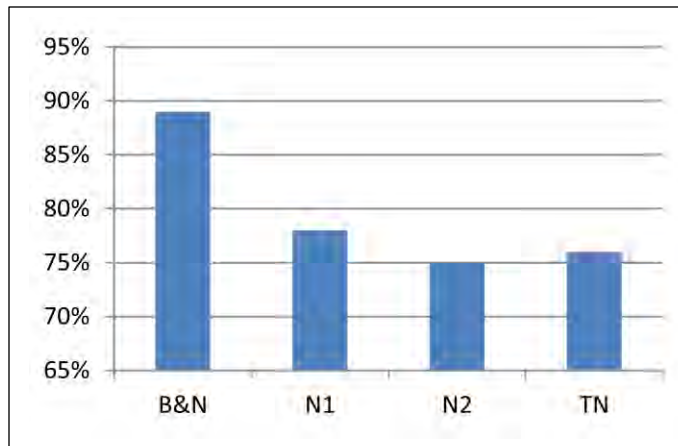
At the time of Fall testing, each student receives an RIT score and a projected RIT score. The projected RIT score is based on the student's actual score and on the average RIT growth of students in the normed sample who were in the same grade and tested in the same term. From these two scores, a growth projection is determined. At the spring test, the difference between the actual spring and fall scores is compared to the projected spring and fall score difference to determine if the expected growth was met for the student.

Figure 1 compares the difference between the average predicted growth and the actual growth for each of the data groups. The students used BWS exceeded the predicted growth by 10 RIT compared to their in class peers who exceeded by 6 RIT and their class 2 peers who exceeded by 2 RIT. The magnitude of difference between the students that used BWS and the rest of their grade-level peers is significant. (effect size 0.4).

**Figure 1: Predicted vs. Actual Growth Reading**



**Figure 2: Percentage met or exceeded growth**



It is also useful to look at the percentage of students who met or exceeded their projected growth for each of these groups (Figure 2). Of the students who used BWS, 89% (8 of 9 students) met or exceeded their projected growth. Comparatively, of the students in both classes who did not use BWS, 76% (7 of 9 students) met or exceeded their projected growth.

**2nd Grade Text Reading and Comprehension (TRC reading levels)**

Text Reading and Comprehension (TRC) by Amplify is an individually administered assessment that determines a student’s instructional reading level. The instructional reading level is defined by TRC as the reading level at which he or she not only performs well, but is challenged.

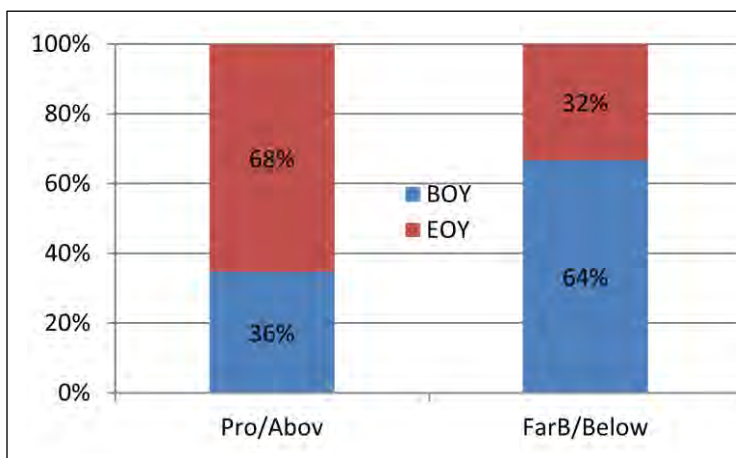
During this measure, students read a benchmark book and complete a number of follow-up tasks, which may include Oral Comprehension, Retelling, and/or Written Comprehension. Assessors observe and record the student’s oral reading behaviors through the administration of a reading record to determine reading accuracy and other metrics. The comprehension components help assessors determine whether the student understands the meaning of the text. There were 22 second grade students who used BWS and had TRC scores for beginning of year, middle of year and end of year. Since the students started in November, the MOY score would have occurred during the time the students were using BWS.

The 22 second grade students used BWS for 19 weeks, after excluding holiday breaks during their BWS implementation. In 19 weeks they had an average of  $38 \pm 2.6$  sessions with a minimum of 30 and maximum of 40 and completed an average of  $99 \pm 19.8$  levels with a minimum of 69 and maximum of 132. Thus the students used the BWS in accordance with the frequency and duration of the recommended protocol. They also worked with appropriate intensity as indicated by the fact that they completed an average of 99 levels, compared to average of 81 levels for 2<sup>nd</sup> grade students in other studies.

The TRC results are a reading level classification of Far Below, Below, Proficient and Above. While there is no number score to measure changes over the course of the year, it is possible to look at changes in categories. .

Figure 3 shows the changes in the percentage of students that are underperforming (Far Below and Below) compared to those that meet reading expectations (Proficient and Above).. There was a shift from 38% reading at Proficient or Above at the beginning of the year to 68% at the end of the year.

**Figure 3: Comparison of Beginning and Ending Reading**



### Conclusion

The students at Perez Elementary school who used BrainWare Safari exhibited growth according to regular academic measures used by the school. The 3<sup>rd</sup> grade students who used BWS for 14 weeks with fidelity and intensity showed twice as much growth as their peers as measured by NWEA reading. In addition, all but one student in the BWS group met or exceeded their projected growth. The 2<sup>nd</sup> graders also exhibited changes, with the percentage of the students performing at the Proficient or Above levels increasing from 38% at the beginning of the year to 68% at the end of the year.