

**Evaluation of TargetTeach® on
Mathematics Performance in the
Assumption Parish School District**

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Evaluation Study / Purpose

TargetTeach[®] the educational model developed by Evans Newton Incorporated, is based on the latest educational research on curriculum alignment. Curriculum alignment is the process of organizing three key elements in a classroom so that they are closely matched (aligned). The three elements are: (a) instruction and materials, (b) outcomes or standards, and (c) tests. The most efficient and effective student learning will occur when classroom instruction and materials align with desired outcomes and standards which are further aligned with tests. Formative assessments, as applied in the TargetTeach[®] model, provide periodic measurement of standards covered during a set timeframe within the school year. These formative assessments mirror the state high-stakes tests in content, format, and level of performance.

The primary objective of the TargetTeach[®] program is to improve student achievement in specific content areas. The current evaluation addresses student achievement in mathematics. The single research question was whether there would be an increase in mathematics achievement scores for students in classrooms implementing TargetTeach[®], as compared to their scores before implementation.

The following report examines the effects of TargetTeach[®] on mathematics achievement in the Assumption Parish School District in Louisiana. During the 2005-06 school year, Assumption Parish began implementation of TargetTeach[®] materials aimed at improving student achievement on Louisiana's high stakes tests, the Integrated Louisiana Educational Assessment Program and the Louisiana Educational Assessment Program (GEE) (*iLEAP* and *LEAP*, respectively). Results of TargetTeach[®] are focused on the student outcomes of the state *iLEAP* and *LEAP* tests for grades 9 and 10 during the term of this study, from 2005-06 through 2007-08.

Methods

Data Source

In order to evaluate the effectiveness of the TargetTeach[®] program, 9th and 10th grade state math standardized test scores are examined. Academic performance is examined as the percent of students scoring in the Below or At/Above Proficient achievement levels. Data were retrieved for academic years: 2004 – 05 (baseline or pre-implementation year), 2005 – 06, 2006 – 07, and 2007 – 08. Because of Hurricane Katrina, the 9th grade *iLEAP* test scores were not available for the 2004-05 baseline year and thus were not used in this evaluation.

The Louisiana Educational Assessment Program (*LEAP*) test is a high-stakes test used to measure how well a student has mastered the state content standards. The test is administered to public high school students (GEE) in grades 10 and 11 and requires that they exhibit sufficient knowledge and skills to be eligible for a high school diploma. The *LEAP* test has five achievement ratings:

- Advanced: A student at this level has demonstrated superior performance beyond the level of mastery.
- Mastery: A student at this level has demonstrated competency over challenging subject matter and is well prepared for the next level of schooling.
- Basic: A student at this level has demonstrated only the fundamental knowledge and skills needed for the next level of schooling.
- Approaching Basic: A student at this level has only partially demonstrated the fundamental knowledge and skills needed for the next level of schooling.
- Unsatisfactory: A student at this level has not demonstrated the fundamental knowledge and skills needed for the next level of schooling.

High school students are required to score an achievement rating of Approaching Basic or above (i.e. Advanced, Mastery, or Basic) on the Mathematics tests (and other content areas) to be eligible for a standard high school diploma.

The Integrated Louisiana Educational Assessment Program (*iLEAP*) test is administered to public school students in grades 3, 5, 6, 7, and 9. Like the *LEAP* test, the *iLEAP* has five achievement ratings: Advanced, Mastery, Basic, Approaching Basic, and Unsatisfactory. Students are required to score an achievement level of Approaching Basic or above (i.e. Advanced, Mastery, or Basic) to be deemed proficient.

Participants

For the 9th grade study, the participants were 282 9th graders in 2006, 308 9th graders in 2007, and 284 9th graders in 2008. The majority of participants were White or Black and very few students of other ethnic groups (less than 3 in each year). Since these groups' counts were so low, they were excluded from subgroup (ethnicity) analysis. The total students by ethnicity were 167 White students and 113 Black students in 2006; 181 White students and 114 Black students in 2007; and 182 White students and 100 Black students in 2008. An additional subgroup analysis included socioeconomic status (SES) as indicated by a student's participation in the national free and reduced lunch program. This subgroup analysis examined the scores of those students participating in the national free and reduced lunch program as compared to the scores of students who were not participating. An average of 137 students participated in that program over the three years for which we have data.

For the 10th grade study, the participants were 267 10th graders in 2005, 282 10th graders in 2006, 218 10th graders in 2007, and 260 10th graders in 2008. Again, the majority of participants were White or Black. The total students used in the analysis by ethnicity were 171 White students and 91 Black students in 2005; 182 White students and 96 Black students in 2006; 140 White students and 76 Black students in 2007; and 166 White students and 91 Black students in 2008. For the subgroup analysis on SES status (as indicated by a student's participation in the free and reduced lunch program), an average of 104 students participated in that program over the four years for which we have data.

Measures

Analyses focused on proficiency level performance differences using two subgroups; namely, below standard proficiency and at or above standard proficiency. These levels were determined using the state guidelines for cut scores for the five achievement levels: Advanced (A), Mastery (M), Basic (B), Approaching Basic (AB), and Unsatisfactory (U). From these achievement levels, the performance data was dichotomized into the two subgroups in the following manner: below standard proficiency or not passing (U) and at or above standard proficiency or passing (A, M, B, or AB).

To examine differences in student performance across school years, variables included year and performance level. These performance levels were determined using the state guidelines for cut scores. The study evaluated the difference between the years to see whether implementation of TargetTeach[®] impacted student performance. The variables of ethnicity and SES were also used to analyze group differences in performance.

The analysis was conducted using a multi-year, cross sectional design. The analysis compares scores from the different students enrolled in the 9th grade or the 10th grade during the years of study. Chi-square tests were conducted to investigate performance differences overall and among one subgroup using the proficiency variable as outcome variable.

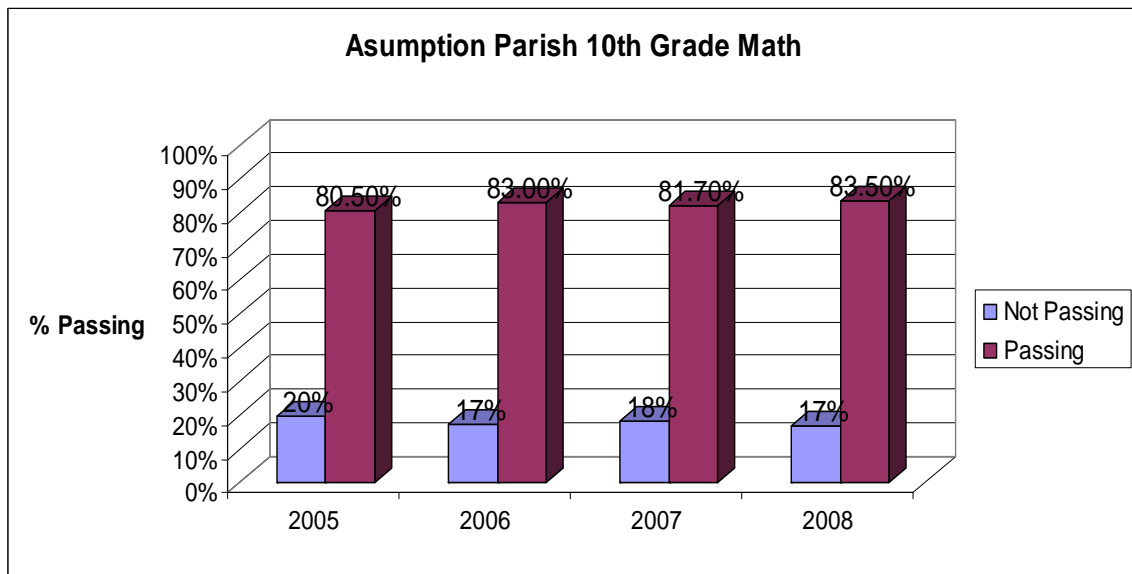
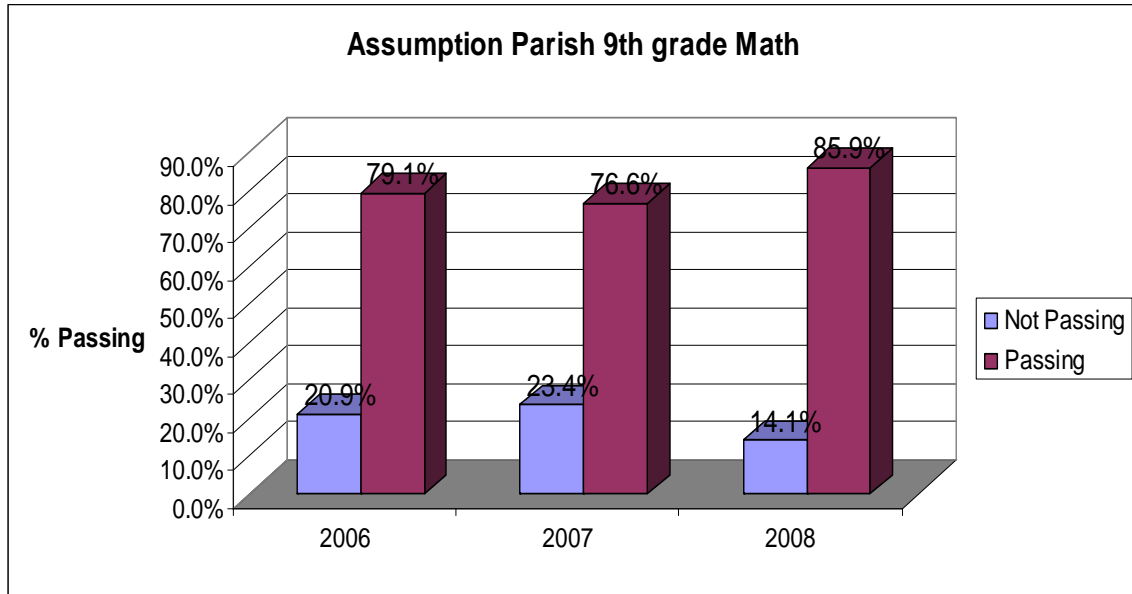
Results

Mathematics

As mentioned earlier, due to Hurricane Katrina in 2005, *iLEAP* data is not available for the baseline year, 2004-2005. Thus, the study results begin in the first year of TargetTeach[®] implementation. For 9th graders, in the first year of TargetTeach[®] implementation (2006), 79.1% of students performed at or above the state's standard. In 2007 that number dropped slightly to 76.6% of students. By the third year of implementation, the percentage of students at or above proficiency climbed to 85.9% of students. So, within three years of implementing TargetTeach[®], the percentage of students who improved their mathematics scores to the level of at or above the state's standard increased by nearly 7%. This difference in performance was a statistically significant improvement in mathematics scores from 2006 to 2008, $\chi^2(2) = 8.59, p < .05$. This difference is graphically represented in Figure 1.

For 10th grade students, their pre-implementation data (2005) showed that 80.6% of students performed at or above the state standards. In the next year, which was the first year of TargetTeach[®] implementation (2006), 83% of students performed at or above the state's standard. Similar to the 9th graders' performance, in 2007 the 10th graders passing rate dropped slightly to 81.7%. By the third year of implementation, the percentage of students at or above proficiency climbed to 83.5% of students. This difference in performance levels across three

years shows a fairly steady improvement, although the rate is not statistically significant. This difference is graphically represented in Figure 2 below.



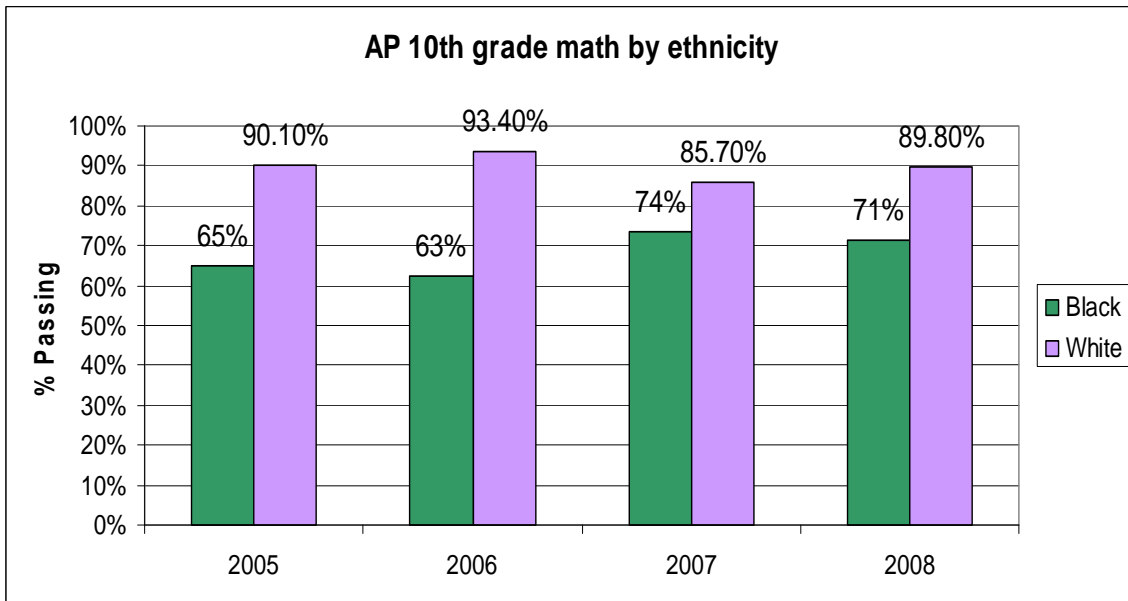
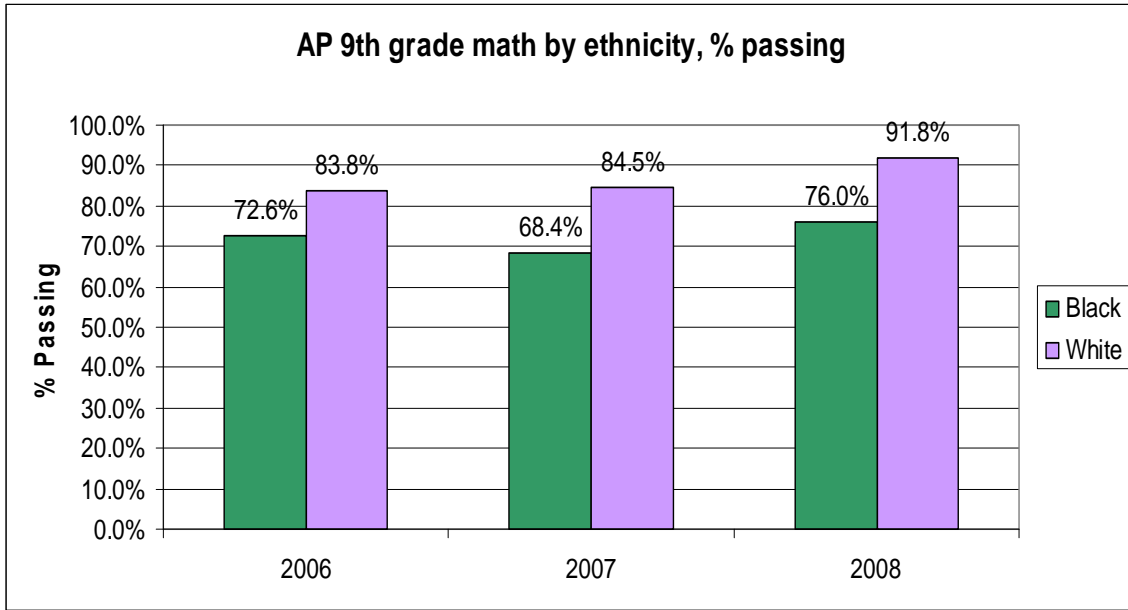
Subgroup Achievement

In order to examine the effect of TargetTeach® on specific subgroups of the student population, scores were disaggregated by ethnicity and by SES for further examination. Due to the low sample size of some ethnic subgroups, only two ethnic groups are compared in the subsequent analyses: Black and White students. SES status was determined by a student's participation in the national free and reduced lunch program.

In general disaggregating the results by the two ethnic subpopulations shows that there appears to be a steady increase in percent of students passing across the years of TargetTeach® implementation. At the 9th grade level, the White group improved their scores in each year after full implementation of TargetTeach®. At the 10th grade level, the scores for White students peaked following the first year of implementation, dropped in the second year, and then increased again in the third year.

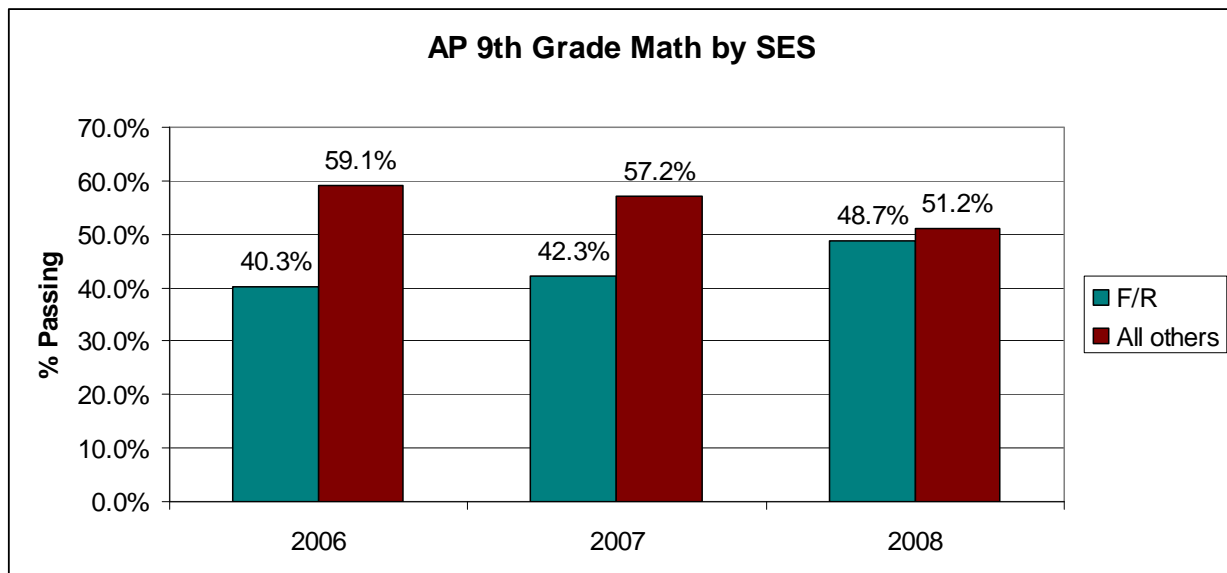
For Black students in the 9th grade cohort, 72.6% had a passing score after the first year of TargetTeach® implementation. As has been noted earlier, there was a slight decline in the second year of implementation (down to 68.4%) and then an increase that surpassed the first year score (76%). For Black students in the 10th grade cohort, only 65% of students had a passing score at the pre-implementation phase. That percentage didn't increase until the second year of implementation (74%) and then it slightly declined to 71% during the third year of implementation in 2008.

For each grade (9th and 10th) and in each year of the study (2006, 2007, 2008), White students outperformed Black students by a significant margin ($p < .01$). Black students in the 9th grade consistently scored an average of 14% below their White counterparts. Similarly, Black students in the 10th grade scored an average of 21.5% below their White counterparts.

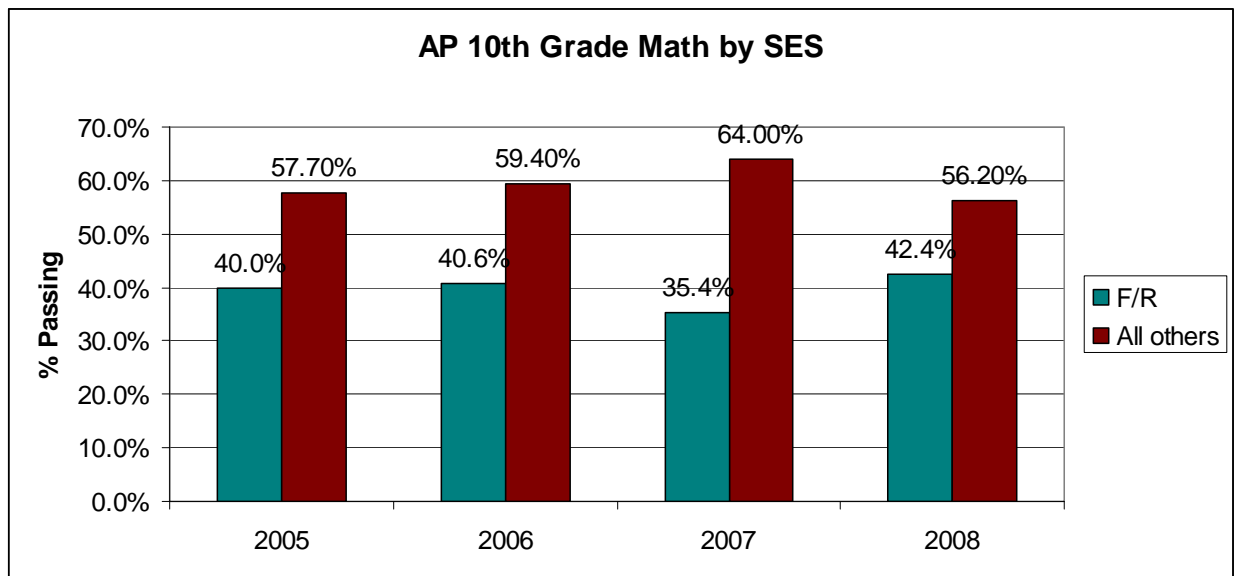


In the second round of subgroup analysis, students were disaggregated by SES using the national free/reduced lunch count criteria. Students eligible for free or reduced lunch (F/R) were grouped together and compared to all other students within their grade level.

When comparing the two subpopulations in general there appears to be a steady decrease in the gap in achievement level across the years of implementation of TargetTeach®. At the 9th grade level, the F/R group improved their scores in each year after full implementation of TargetTeach®.at a higher rate than the non F/R group: Initially, in 2006 the All Other (non-F/R) group had a student passing rate that was 19% higher than the F/R group. However, by the last year of the study in 2008, students in the F/R group and students in the All Other (non F/R group) were scoring within three percentage points of each other, on average. The decreasing gap between the two groups across time is illustrated below.



The 10th grade scores and related passing rate for F/R students remained stable during the first year of implementation (2005) and then declined in the second year (2006). The last year of data for 10th grade F/R students (2008) shows an increase of 2.4% in the passing rate of F/R students as compared to the baseline year. Similarly to the 9th grade data, the gap between the achievement levels of the two groups decreased over time: During the baseline year of the study (2005), the 10th grade All Other (non-F/R) group had a student passing rate that was 18% higher than the 10th grade F/R group. But by the last year of the study, 10th grade students in the All Other (non F/R group) were scoring only 14% higher than those 10th grade students in the F/R group.



Conclusions

In 9th and 10th grade mathematics, the overall percentage of students passing increased between the baseline year or first year of implementation (2005 and 2006 for 10th and 9th graders, respectively) and the third year, 2008. This general trend was also apparent for the two ethnic subgroups; however, there was not a narrowing of the achievement gap. For the SES indicator,

the general improvement trend also included a reduction of the achievement gap between the groups. The analyses suggest that overall improvement occurred in mathematics performance in 9th and 10th graders within the Assumption Parish School District between the years of before and after implementation of TargetTeach[®]. Moreover, our analyses showed that even if there was no statistically significant improvement for some groups, there was still an increase of students performing at or above standards within those groups in mathematics.