

## **A State Mandated Summer Programs' Effect on High School English Test Scores**

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### **Abstract**

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*This study focused on whether or not one state-mandated summer program in Texas improved high school students' standardized test scores. The population was 647 students who failed a high-stakes English test. This study compared the retest scores of the 390 summer program attendees and the 257 non-attendees. It also compared the summer program's curriculum and instructional strategies to literacy best practices.*

*The findings indicated that attendance in the summer program had a statistically significant effect on students' retest scores. The summer program appeared to help 60 percent of its attendees pass the retest. However, 47 percent of the non-attendees also passed the retest; so, despite the program's statistical significance, it had limited educational significance.*

*Through further demographic analysis, it was found that session attendance (AM/PM) had a significant effect on retest scores. While the summer program included some best practice literacy strategies, the majority of the strategies were test preparation.*

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**Keywords:** standardized testing, summer program, retest, curriculum, secondary, English language arts

### **1. Introduction**

Texas has been, and continues to be, one of the leaders in state-mandated standardized testing. The state's consistent production of standardized exams is rooted in the idea that these exams will place literacy in the spotlight and in turn, academic performance will be improved (Mazzeo, 2001).

The most recent iteration of state testing in Texas is the State of Texas Assessments of Academic Readiness (STAAR) program. Implemented for the first time in the 2011-2012 school year, STAAR was meant to ensure rigorous instruction and adherence to the state standards, however, large numbers of students have failed it in every administration. In response, Texas has mandated that school districts offer remedial programs for any student who fails a state standardized exam.

Many schools are fulfilling this obligation by providing a summer program with a district-created curriculum. While research has shown that summer learning can be beneficial (Harris Cooper et al., 2000), test preparation might not give students the same advantage as authentic learning (Zemelman, Daniels, & Hyde, 2005), and previous programs have produced mixed results for students' literacy test scores (Merkel & Keller, 1987; Raivetz & Bousque, 1987).

This study set out to build on previous research: first, to determine if a summer test preparation program is beneficial to students' high school English test scores, and second, to explore the curriculum of summer programs.

## 2. Review of Related Literature

The process of reading and comprehending a text is complex. (Rupp & Lesaux, 2006; Zelman, Daniels, & Hyde, 2005). In secondary classrooms, reading is used to stimulate higher level learning and thinking and becomes increasingly more difficult with every grade level. As learning increases in difficulty, many adolescent readers begin to struggle with comprehending their academic assignments (Underwood & Pearson, 2004).

In order to keep up with the increasing demands of middle and high school literacy, secondary readers and writers need best practice instruction that involves direct, explicit instruction of cognitive strategies (Alfassi 2004; Biancorosa & Snow, 2006; Beers 2003; Bimmel & Van Schooten, 2004; Cromley & Azevedo 2007; Langer, 1999; Moore, Alvermann, & Hinchman, 2000; Zelman et al., 2005).

Best practice reading instruction must address comprehension, but has many other factors to consider in order to have a lasting effect on children's reading skills (Biancorosa & Snow, 2006). Any of the strategies that are a part of the comprehension process can be taught explicitly; essentially making what students think is an invisible process, visible (Beers, 2003).

Additionally, because reading and writing are "complimentary skills whose development runs a roughly parallel course," (Graham & Perin, 2007, p. 7), writing strategies can also be taught directly and explicitly and can be scaffolded for students to learn. As with reading, this scaffolded instruction allows students to learn writing strategies in a low-risk environment.

However, this low risk environment that secondary readers need is not always realistic because currently "we live, at least rhetorically, in an era of 'no excuses.'" (Mazzeo, 2001, p. 390). Standardized exams are rooted in the idea that high stakes testing can influence student achievement, but the concept of no excuses puts pressure on teachers and students that can affect the secondary literacy environment (Mazzeo, 2001).

When students fail a standardized exam they are often placed in remedial classes and/or given extra instruction. This inadvertently (and sometimes wrongly) labels students as struggling readers (Dennis, 2012). This label not only affects their reading identity (Bintz, 1993; Enriques, 2011), but can also be accompanied by a narrowing of curriculum, a reduction of instructional time in favor of test preparation, and test-like teaching strategies (Klinger, 2007). Many of these practices are found in accelerated programs, and are a far cry from the best practice methods that all secondary readers need.

With Texas' most recent testing program (STAAR) has come legislation that mandates "additional accelerated instruction" to each student "who fails to perform satisfactorily on an end-of-course assessment instrument required for graduation" (HB5, 2013, p. 36).

The instruction of these programs, according to 19 Texas Administrative Code, "shall be based on, but not limited to, guidelines on research-based best practices and effective strategies" (2010). However these strategies are not further explained for the secondary level, and the unclear wording of "accelerated instruction" leaves room for discussion.

Additionally, this instruction "may require participation of the students...at a time of the year outside normal school operations" (HB5, 2013, p. 16). For many districts, this means summer programs with a district created curriculum.

Summer school has been proven to be beneficial in many regards, and has traditionally been used to help students gain credit for a failed course, ensure students with disabilities receive a free and appropriate education (Cooper, et al., 2000), help students get ahead in their coursework, and to counteract summer learning loss. While the same has not been proven for summer test preparation programs, state mandates are calling for an increase of these programs to remedy failure rates (McMillan & Snyder, 2002).

The studies of previous summer programs with a test preparation focus have had mixed results. Merkel and Keller (1987) reported positive gains in multiple choice reading questions for students and a loss in essay writing scores, while Raivetz & Bousque (1987) reported a gain in points on both reading and writing and that attendees earned higher scores than non-attendees.

While the first study did not compare attendees and non-attendees, the overarching goals of both programs were to remediate students' skill deficiencies on the first exam in the areas of reading and writing, in the hopes that students would pass the retest. Additionally, in these reports the curriculum of the programs was discussed, but not in enough detail to determine its effect on test scores.

Therefore, the purpose of this study was to examine a state-mandated summer program in Texas in order to determine whether the program was beneficial to high school students' test scores, and to investigate the program's curriculum to determine its alignment with best practice.

### **3. Research Context**

In the summer of 2014, a large suburban school district located just outside Houston, Texas offered a five day summer remediation program for high school students who failed the state English I exam in the spring. Of the 647 students who took the exam a second time in the summer, 390 attended the summer remedial program.

To accommodate this number of attendees, three programs were held simultaneously at three different high schools in the district. Each day there was a morning and an afternoon session at each high school, in which two different groups of students were taught. Session attendance was determined by student choice, with 206 students attending the morning sessions and 184 students attending the afternoon sessions. Daily attendance was mandatory, but graduation credit was not offered for this program and no grade was assigned.

The purpose of the program, as stated in the district summer school brochure, was "to prepare students to retake the exam" which would be administered about eight days after completion of the program. What the district deemed "test prep sessions" were offered in the summer to any student who failed the spring exam.

**3.1 Teachers.** Fifteen teachers from high schools around the district were chosen to teach the summer program; all of whom had taught English during the regular school year. According to the district coordinator, the average class size ranged from 25 to 30 students.

The summer program started with 429 attendees, but only 390 attendees took the summer exam. It is not known why the other 39 students did not take the retest exam. Attendees came from each of the 10 high schools, with the largest numbers coming from the high schools with a higher percentage of economically disadvantaged students. This is apparent in the demographic data because a little over half of the students were categorized as economically disadvantaged and at risk. The number of at risk students was 149, there were 18 students categorized as economically disadvantaged, and 191 students were categorized as both at risk and economically disadvantaged. There were also 32 students with no reported socioeconomic status.

More than half of the students were entering the tenth grade, but 59 students would be repeating the ninth grade in the following school year. The participants were made up of 258 males and 132 females. In regards to ethnicity, the program had a large Hispanic student population with 214 of the attendees in this category. There were 86 African American students, 65 white students, 25 Asian, mixed-race, and American Indian. The Asian, mixed-race, and American Indian students were grouped together in an "other" category because a low number of students would not provide significant results in SSPS.

For comparison purposes, 257 students took the summer administration of the exam, but did not attend the summer program. Non-attendees were also spread across the district representing all 10 high schools, again with the larger numbers coming from the high schools with a higher percentage of economically disadvantaged students. The number of at risk students was higher with 86, and there were 13 students categorized as economically disadvantaged, while 139 students were in both categories and 19 had no socioeconomic status.

The majority of non-attendees were entering the tenth grade, but 50 students would be repeating the ninth grade the following school year. The participants were made up of 152 males and 105 females. In regards to ethnicity, the non-attendees had a large Hispanic student population with 146 of the attendees in this category. There were 64 African American students, 37 White students, 10 Asian, mixed-race, and American Indian.

**3.2 Curriculum materials.** The curriculum for the summer program was constructed by a high school English teacher appointed by the district coordinator of secondary English. The curriculum included a detailed daily schedule with specified activities and their duration, along with presentations and handouts to be used in conjunction with these activities.

The entire curriculum was distributed to teachers before the summer program, but training was not provided. The district coordinator said that the expectation was that teachers would use the structured curriculum as it was presented to them. Each session of students (morning and afternoon) received the same instruction, and according to the district coordinator, the curriculum was designed so that reading, writing, and other literacy elements were integrated each day.

According to the daily schedule, each teacher saw the morning and afternoon sessions for a total of three hours per day, and 15 hours for the entire program.

**3.3 Testing.** The first administration of the state-mandated English exam for all ninth graders was during the spring semester of their freshman year. The second administration, for students who failed the first administration, was offered during summer break, and about eight days after the end of the summer program. This was an optional administration, independent of whether a student attended the summer program. This means that not every student who attended the summer program sat for the summer administration, and that participation in the summer program was not required to be eligible for the summer administration of the exam.

Another fact to note about the summer test administration is that the summer exams are shorter. In the spring administration, the state includes field-test items. While these items do not count toward a student's score, they do have to be completed within the five-hour time limit, making the exam longer. For summer administrations, the state removes the field-test items. So students only have to complete items that count toward their score, giving them more time, within the five-hour time limit, to complete every item.

#### 4. Research Design

A causal-comparative design was used to establish whether or not the state-mandated summer program had a positive effect on students' retest scores. The primary method was quantitative, using the students' test scores and other information about them, such as demographics. The data was analyzed using both Microsoft Excel and SPSS to answer the research question.

The raw student data only included students who took the English exam for the first time in the spring. This was done to reduce the test-retest effects on students (Freund and Hollings, 2011). If students take a test more than once, scores might increase simply because the test has become familiar. In addition, the students who had taken the test before spring 2014 were not true freshmen and had more instruction and experience with the skills and concepts being tested.

The remaining students were grouped by summer program attendance, those who attended ( $N = 390$ ) and those who elected not to attend ( $N = 257$ ). The research question for this study was based in the comparison of the two groups. These groups were compared using the means of their scores to see improvement or decline in test scores for the two groups.

The data from both groups was entered into SPSS. An analysis of covariance (ANCOVA) was used to explore the differences in scores between the two groups of students (attendees and non-attendees). The pre-test scores were controlled by making them the covariate in the analysis. Thus, pre-existing variations in scores were removed from the comparison between program and non-program group scores. This control increased the likelihood of detecting differences between the two groups if they existed. A power analysis was done for this study, by setting alpha power at .05, expecting an effect size of .5, and with a power of .80; G\*Power showed that there needed to be 21 subjects in each cell. The study's sample did produce at least 21 persons per cell in the above analysis.

This data also included the following information: student ethnicity, whether each student is classified as at risk and/or economically disadvantaged, gender, and session attendance. After the initial research question was answered, exploratory analyses were conducted using the demographic subgroups to determine if participation or non-participation in the summer program affected different groups of students differently. To do this, an ANCOVA was used to explore whether there were significant differences in the mean scores across demographic groups.

Lastly, because it needs to be acknowledged that not everything about a summer program can be answered by test scores (Cooper, Nye, Lindsay, and Greathouse, 1996), and to be able to extend this research beyond the analysis of test scores, the curriculum and instructional methods of the program were also reported and explored. This helped to further support the findings of the effect on students' test scores.

**4.1 Manipulations of data.** In order to equate student groups for more reliable results, only the larger groups, African American, Hispanic, and White students' scores were analyzed. Additionally, since the number of Hispanic students was so much larger than the other groups a random sample of 100 Hispanic students was used when analyzing ethnicity. This random sample was computer generated by SPSS.

When comparing the groups, only the scores of economically disadvantaged and at risk students were analyzed. A random sample (computer generated by SPSS) of 30 at risk students was used to help equate the groups for better statistical results. The 191 students that were both at-risk and economically disadvantaged were excluded from the data because SPSS cannot decipher between the two when a student has been categorized as both.

## **5. Results**

There was a statistically significant difference between the summer passing rates of the attendees and non-attendees. From the raw data alone, the 390 students who attended the summer program had a 60 percent passing rate on the summer English exam, while the 257 non-attendees had a 47 percent passing rate.

To determine whether the difference between the two groups was statistically significant, a one-way between-groups analysis of covariance (ANCOVA) was conducted to compare the effectiveness of the summer program on students' test scores. The independent variable was the intervention (attendance of the summer program), and the dependent variable was students' scale scores on the summer administration of the English exam after the intervention was completed. Participant's scale scores on the spring administration of the exam were used as the covariate.

Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. After adjusting for the pre-intervention scores (spring administration of the exam), there was a significant difference between the two intervention groups on post-intervention scores on the summer administration,  $F(1, 644) = 13.36, p = .00$ , partial eta squared = .02. There was a strong relationship between the pre-intervention and post-intervention, as indicated by a partial eta squared value of .16. Table 1 shows the descriptive statistics for the attendees and non-attendees.

It can be seen from the results that a student's attendance at the summer program was statistically significant in obtaining a satisfactory score on the summer exam.

## **6. Exploratory Analyses**

Further analyses were conducted to find out if summer program attendance had a significant effect for the students when grouped by socioeconomic status, AM or PM session attendance, gender, and ethnicity. To find out if statistical significance existed for any of the demographic groups, an analysis of covariance (ANCOVA) was conducted to assess the effectiveness of the summer program on the retest scores of the participants of the four demographic groups. It should be noted that in every demographic group the attendees scored higher than the non-attendees on the retest exam, however only session attendance had a significant effect on student's test scores.

The summer program had a larger effect on morning attendees than afternoon. The morning attendees earned a 63 percent passing rate, while afternoon attendees earned a 57 percent passing rate.

A one-way between-groups analysis of covariance (ANCOVA) was conducted to compare the effectiveness of the summer program for morning and afternoon attendees. The independent variable was morning or afternoon attendance, and the dependent variable was students' scale scores on the summer administration of the English exam after the intervention was completed. Participant's scale scores on the spring administration of the English exam were used as the covariate.

Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. After adjusting for the pre-intervention scores, there was a significant difference between the two groups on post-intervention scores on the summer retest,  $F(2, 643) = 8.251, p = .00$ , partial eta squared = .025. There was a strong relationship between morning and afternoon attendance and post-intervention scores. Table 2 presents the descriptive statistics.

## **7. Best Practice Comparison**

The last stage of exploratory analysis was to compare the summer program's curriculum and instructional strategies to determine the extent to which they were aligned with current best practice. Table 3 shows the duration of instructional strategies for the summer program.

The majority of the summer program instructional strategies did not fit into the category of best practice; most would belong under the category of test preparation. Additionally, it should be noted that some of the reading and writing strategies were not a perfect match for best practice, but were close enough to be categorized.

The results of this study's research question indicate that the effect of the summer program on student test scores was statistically significant, with 60 percent of the attendees passing the summer retest. The results of the demographic analyses were mixed. It was clear, with the statistical significance and higher passing rate, that the summer program had a larger effect on morning attendees.

Additionally, the comparison of the summer program's curriculum to best practice showed that strategies were used for reading and writing, but not all were a match with best practice.

## 8. Discussion

The goal of this summer program was to prepare students for the summer administration of the state-mandated English exam. With strong statistical significance and a 60 percent passing rate, the summer program appears to have made a difference. This effect can also be seen when looking at the various demographic groups. Although only one of the statistical tests (AM/PM) was strongly significant, the attendees in every demographic group had higher passing rates than the non-attendees.

These results indicate that a one-week summer program focused on test preparation, such as this one, can be beneficial in regards to retest scores. While these are positive results, it needs to be taken into consideration that 47 percent of the non-attendees also passed the retest, and that there was less than a 70 point difference in the attendees and non-attendees mean scores. This implies that the summer program had limited educational significance. Furthermore, there are other factors that could have played a part in the results.

These results could, in part, be attributed to what Freund and Hollings (2011) refer to as the retest effect. When students retake exams their retest scores tend to be higher than previous exams, and even more so when "test coaching" is used (p. 597).

These results could also be attributed to the removal of field test items for the summer exam. Because of this the summer exam contained fewer test items than the spring exam. These factors would be a benefit for any student taking the summer exam, and could be contributing factors in the passing rates of both the attendees and the non-attendees that passed the retest.

The comparison of the summer curriculum to best practice is also important when considering the results. While the program did implement some reading and writing best practice strategies, the bulk of the instruction centered on test preparation. This combination of test preparation instruction coupled with some best practice strategies was successful for 60 percent of the summer program attendees; however, it was not successful for the 40 percent of attendees who failed the exam a second time.

For these failing students, the summer retest score was a strong signal that they might need more than test preparation to influence their literacy levels. While a standardized test score should not be used alone to label a student as struggling (Bintz, 1993; Dennis, 2012; Franzak, 2006; Heron, 2003; Johnston & Winograd, 1985; Rupp & Lesaux, 2006), these scores indicated that the 40 percent of attendees who failed the retest need more help. If the reduction of test items and one week of instruction was not enough to enable these students to achieve a passing score, educators need to find out what can be done to help these students with literacy.

In terms of the demographic group exploratory analyses, the results indicated that there was a significant difference between morning and afternoon sessions, with the morning attendees scoring higher on average than the afternoon attendees. Because the same teachers taught both the morning and afternoon sessions and a very structured curriculum was provided, it can be assumed that both sessions of students received the same quality and type of instruction. With this fully crossed design taken into account, these results suggest that students who attend summer programs in the morning will score higher than afternoon attendees. These results are in conflict with prior research that supports the theory that students perform better in the afternoon than in the morning (CAREI, 1998).

Another aspect of this study that needs to be discussed is the comparison of the summer curriculum to best practice. The state of Texas mandated that best practice strategies were to be used in the program.

While the curriculum did utilize some best practice strategies, most were used in pieces and no best practice quality or strategy was implemented in its entirety. There could be a few reasons for this.

While the state mandated that best practice should be used, there is no length requirement for these programs. It is common knowledge among educators that best practice strategies take time to implement, and one week is not enough. Districts are forced to choose whether or not to teach what they can in less time and using less money, or to increase the length of the summer program. Another consideration of increasing the length of the program is that attendance is voluntary, and there are many students who would elect not to attend if the program was longer (Zvoch, 2011).

In the end, many districts might choose just as this district did: less time and more test preparation because not only is the fiscal responsibility placed on the district, but also because districts know that they need more students to attend in order to boost test scores to meet state and federal expectations.

This program lasted for one week, was mainly test preparation, and managed to prepare a majority of the attendees for the summer exam. However, students who attended and failed did not gain the instruction they needed to pass the exam.

If 60/40 results are a “realistic expectation” (Alexander et al., 2001, p. 185) for a program such as this, then educators should not settle for realistic, especially considering that 47 percent of non-attendees also passed the summer retest, and there was not a large difference in the groups’ mean scores, which shows that this summer program had limited educational significance. If more students are going to be helped, factors such as instruction and program length will need to be reconsidered.

### **9. Limitations and Further Study**

A limitation for this study was the nonequivalent comparison groups. The attendees and non-attendees were self-selected. Additionally, the length of the program and curriculum was determined by the district. Nothing about this study was manipulated in order to find effects; it was focused on analyzing the effects of an already existing summer program on test scores.

Student enrollment in the program was not mandatory, so the researcher had no control over the size of the sample. Also, some students who may have benefited from the program elected not to attend. The time period also put somewhat of a constraint on the study; and only two test administrations could be analyzed.

All of these factors were taken into consideration when interpreting and displaying the results of the analysis, but not all could be controlled.

Texas is not the only state that has mandated out-of-school time programs to advance test scores. Many states have adopted these measures. In response to these mandates, more summer programs such as this one need to be studied. Different aspects of programs need to be examined such as program length and instructional strategies. While this study’s results were relegated to student test scores and curriculum, additional aspects of summer programs need to be examined before it can be known what exactly makes programs such as this one successful for some students, and what can be improved to increase the level of success for all students.

Instead of focusing on test scores alone, there needs to be a combined focus. If educators place the focus on improving reading and writing skills, it can be assumed that standardized test scores will also increase. But if test preparation is the only focus, there are a lot of struggling readers and writers that will not find the help they need. And although some students might gain just enough points on a standardized exam to pass, educators and legislators alike have to ask themselves if this is enough.

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**Tables**

Table 1

*Attendees and Non-attendees Descriptive Statistics*

	Attendees N = 390	Non-attendees N = 257
Mean	3806.50	3736.65
Std. Deviation	259.44	260.81

Note. A satisfactory scale score on the English exam is a 3750.

Table 2

*AM and PM Session Descriptive Statistics*

	AM N = 206	PM N = 184
Mean	3837.97	3711.27
Std. Deviation	250.32	265.56

Table 3

*Duration of Instructional Strategies*

Strategy	Time Allotted
Test Preparation	5.4 hours
Writing	5.5 Hours
Reading	2 Hours
Vocabulary	10 minutes