

# All Jumpstart Test Prep Schools – 2020 ACT Score Change Analysis

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## Purpose and Scope

This report will provide an analysis on the effectiveness of implementation of the Jumpstart Test Prep complete ACT review in improving ACT exam scores across a number of Mississippi public high schools during the 2019-2020 academic year. Implications for subject level and overall exam performance will be investigated. Results will be generated at the aggregate school level and differences will also be considered among students by factors such as ethnicity and gender.

## Methodological Details

The data analyzed herein are from the 2020 ACT exam testing at the following 22 Mississippi Public High Schools, of which 19 have reported scores for analysis:

- Baldwin
- Bay Springs
- Canton
- Charleston
- Desoto<sup>1</sup>
- Enterprise
- Forrest County
- Forrest Hill
- Franklin County
- Lumberton
- Okolona
- Pearl
- Ray Brooks
- Shaw
- South Pike<sup>2</sup>
- Starkville<sup>3</sup>
- Sumrall
- Vardaman

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<sup>1</sup> A significant number of students did not receive the test prep in its entirety as planned; however, we still included these students with sub-par implementation in our final results to be as conservative as possible in our estimates.

<sup>2</sup> Have not yet reported test results, at the time of this writing.

<sup>3</sup> A significant number of students did not receive the test prep in its entirety as planned; however, we still included these students with sub-par implementation in our final results to be as conservative as possible in our estimates.

- Vicksburg<sup>4</sup>
- West Bolivar
- West Harrison<sup>5</sup>
- West Tallahatchie

These 22 schools were selected for inclusion in the pilot program based on a random selection process among all public schools in Mississippi that applied for funding and inclusion in the program. In total, while all schools in the state were encouraged to apply, 104 schools submitted an application representing an estimated 13,061 Juniors.

To select from the 104 schools, a random number generator was set up with 5 values (the integers of 1, 2, 3, 4, 5), with a 20% expected probability of any of those values being selected on each random draw. This random number generator was created for each individual school in the list. It was then specified that schools whose drawn number was 5 would be included in the selection group, while those schools whose drawn number was 1, 2, 3, or 4 would be excluded from the group.

The state funding provided allowed for 2,550 (out of 13,061) students, or 19.52%. Jumpstart ACT also made itself willing to contribute additional funding up to an addition 400 students, depending on the outcome of the random draw.

A corresponding excel sheet was set to manual calculation only. It was to be recalculated until a draw that yielded the following predetermined criteria:

- A minimum of 2,550 students would be included in the selection group.
- A maximum of 2,950 students would be included in the selection group.
- A minimum of 21 schools would be included in the selection group.
- The school level average composite ACT score among the selection group would be at or below the average among the 104 possible schools.

Dr. Hoskins performed these random draws within the sheet until a matching set was yielded. The resulting sheet was then frozen and the selected schools were highlighted. The frozen results sheet was then saved on Dr. Hoskins' private computer and a second copy was shared with Sha Walker for implementation. Dr. Hoskins also recorded the number of draws taken to achieve the results (7 draws).

The selected pilot group (see more school-by-school details in Appendix 1) had the following overall characteristics:

- 2,884 estimated Junior students
- 22 schools
- Average 2018 ACT composite score of 16.52

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<sup>4</sup> Have not yet reported test results, at the time of this writing.

<sup>5</sup> Did not administer test on February 25<sup>th</sup> and then closed due to COVID-19.

The selected 22 school applications totaled 2,884 Juniors to receive the Jumpstart ACT science and reading reviews prior to the state administered February 2020 ACT exam, provided to all Mississippi junior students. February ACT Scores achieved following the Jumpstart implementation are compared against actual ACT prior attempts for all students with at least 1 prior attempt. In the case of multiple prior attempts, the best prior attempt was used for comparison.

Scores achieved at the state administered testing date in February 2020 are compared against pre-tests conducted as part of the preparation process. Across the 22 schools in the Pilot, there were a total of 2,719 eligible students (which ended up a bit lower than the estimated number of students across these schools: 2,884). All of these students were provided course materials to be completed as prescribed in the classroom or individually as directed by the school.

19 schools have reported the application required pre- and post- ACT data at the time of this writing, representing 2,225 eligible students. February ACT (post-exam) data was provided for 1,686 students (75.78%). Several schools only reported post exam data if pre exam data was present for the student. Post exam scores for students with prior pre scores were unavailable and not reported if the student was absent on test day, withdrew or moved from the district following pre score.

As the Jumpstart ACT math review was procured additionally by 5 of the 22 pilot schools (4 of which provided post data to date), 302 students received Math area JTP, of which 270 students tested on the state-wide date and 239 students had a previous exam attempt as well (with an associated subject area score report).

As the Jumpstart ACT English review was procured additionally by 5 of the 22 pilot schools (4 of which provided post data to date), 302 students received English area JTP, of which 270 students tested on the state-wide date and 239 students had a previous exam attempt as well (with an associated subject area score report).

All 22 pilot schools received the Jumpstart ACT Science prep. Within the 19 schools that have provided score reports at the time of this writing, 2,181 students received Science area JTP, of which 1,652 students tested on the state-wide date and 1,311 students had a previous exam attempt as well (with an associated subject area score report).

All 22 pilot schools received the Jumpstart ACT Reading prep. Within the 19 schools that have provided score reports at the time of this writing, 2,225 students received Reading area JTP, of which 1,686 students tested on the state-wide date and 1,331 students had a previous exam attempt as well (with an associated subject area score report).

Testing the difference between the post- and pre- exam scores is a highly attractive approach to assessing the success of the Jumpstart Test Prep program.

While the change in scores before and after use of the program brings natural intuitive appeal as a simple metric of the program's effectiveness, there is also significant scientific merit to this approach. Differencing a student's individual pre- and post- score effectively allows the student specific factors to be cancelled out (as they are present in both measurements). Thus, confounding factors such as student aptitude, home situation, family income, etc. are all effectively controlled for with this analysis approach<sup>6</sup>.

## Experimental Design

To assess program effectiveness (that the test prep will lead to score growth at the individual student level), a field study is designed in the form of a one-group pretest-posttest, which takes the following form:

Mississippi Public HS Test Takers:  $O_1 \times O_2$

...where:

$O_1$  = 2020 pre-test scores at Mississippi Public High Schools (in the case of multiple prior attempts, the best prior attempt score was used)

X = Utilization of Jumpstart Test Prep

$O_2$  = 2020 administered date test scores at Mississippi Public High Schools

To empirically assess performance improvement,  $O_1$  will be subtracted from  $O_2$ . This score change will then be statistically compared against a null expectation of no score growth (zero) using a one-tailed t-test. A p-value of less than .05 is considered statistically significant (indicating measurable student improvement is present), while a p-value .05 or larger, but less than .10, is considered to be marginally significant (meaning that improvement is likely present, but that we cannot be fully confident of this conclusion).

## Exploratory Results

An exploratory set of analyses are overview first by subject area, before proceeding to the more formal statistical tests.

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<sup>6</sup> One must concede, however, that *changes in these factors that align with the timeframe between the pre- and post- score measurements* are not accounted for. As an example, a student that had a stable home environment at time of the pre- exam scoring, but has since experienced a significant family disruption near the post- exam scoring date may see his/her exam score suffer: we cannot account for such drivers of score change given our current data. However, these anomalies should be fairly unlikely and are expected to be *randomly distributed among the student sample*: thus, it is just as likely that a student experiences a positive change versus a negative change during the treatment period. When assessing program performance at a sample level (i.e., the whole school), these time dynamic effects within student are expected to effectively cancel each other out.

The percentage of students improved by subject area is examined first. This is calculated by including all students who had both a pre-test (before the use of the Jumpstart Test Prep program) and a post-test score (after using the test prep), from which potential improvements could be measured and attributed to the program. These results are presented next, in Figure 1. Appendix 2 at the back of this document provides the percentage of students improved by subject, by each school.

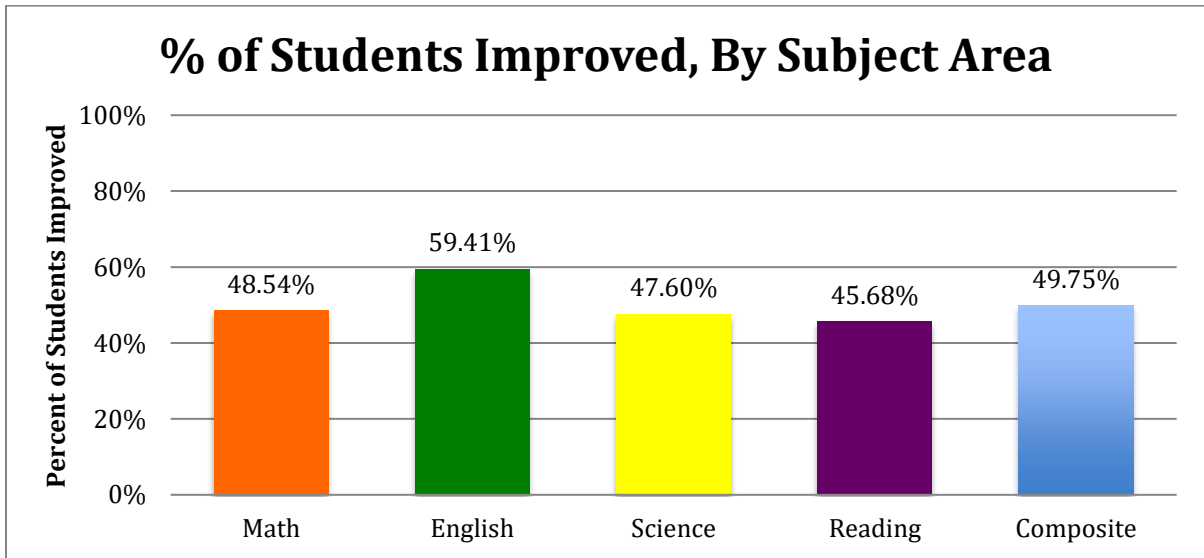


Figure 1. Percent of Students Improved, by Subject Area

Figure 2 (below) provides the average number of points improved observed among the group of students who did improve upon their best prior test score with the assistance of Jumpstart Test Prep. Note that Appendix 3 at the back of this document provides the average score improvement by subject, isolated by each school.

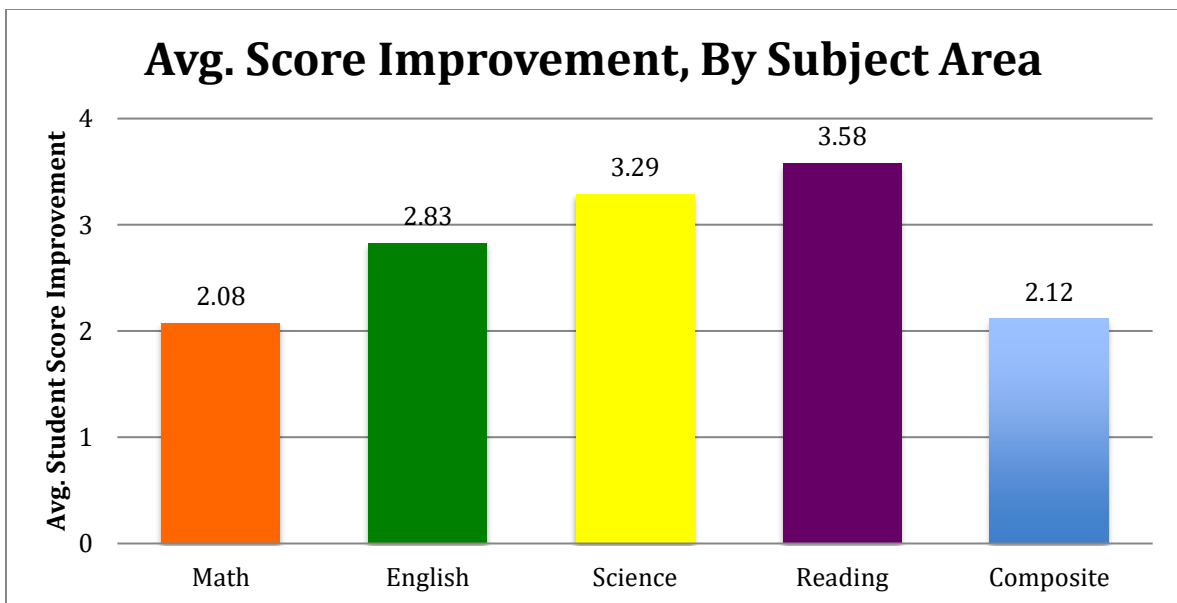


Figure 2. Average Rate of Improvement, Among Those Students Who Showed Improvement

The distribution of score improvements between the pre- and post- scores for the Math subject area is provided in Figure 3 (below). In total, 48.54% of students showed improvement, for an average gain of 2.08 points. The maximum score gain was 7 points.

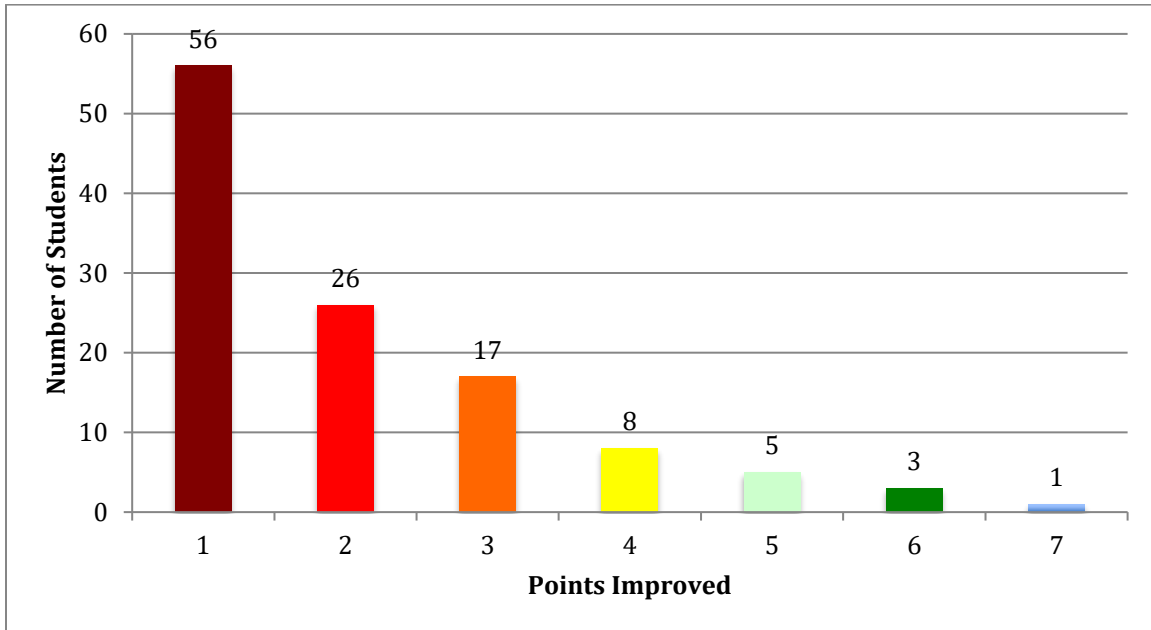


Figure 3. Frequency Distribution of Observed Math Score Changes

The distribution of score improvements between the pre- and post- scores for the English subject area is provided in Figure 4 (below). In total, 59.41% of students showed improvement, for an average gain of 2.83 points. The maximum score gain was 9 points.

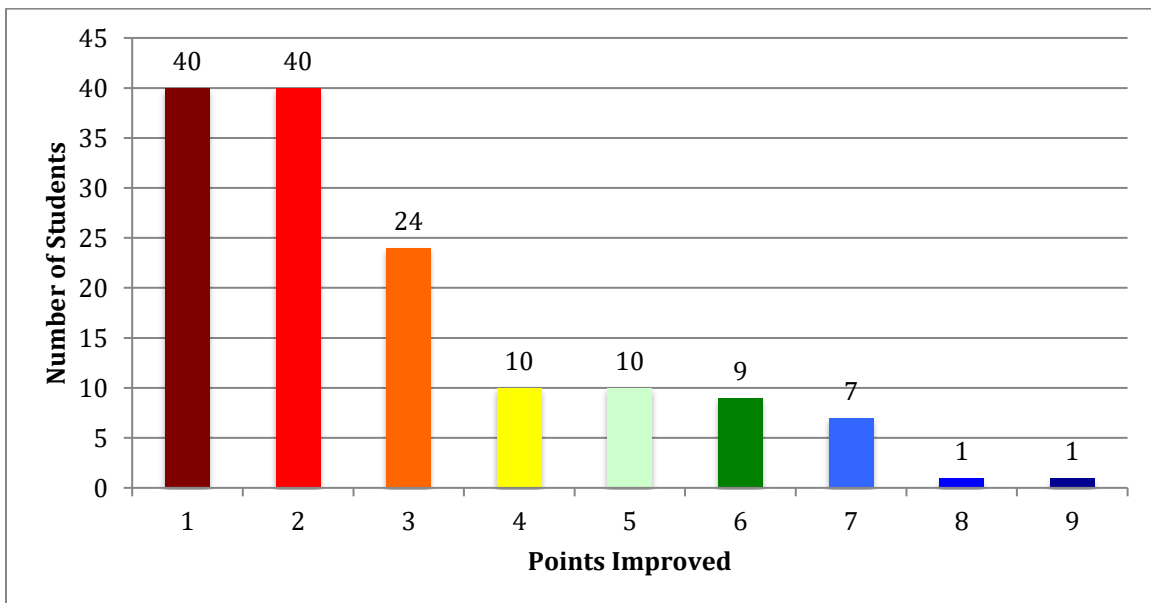


Figure 4. Frequency Distribution of Observed English Score Changes

The distribution of score improvements between the pre- and post- scores for the Science subject area is provided in Figure 5 (below). In total, 47.60% of students showed improvement, for an average gain of 3.29 points. The maximum score gain was 12 points.

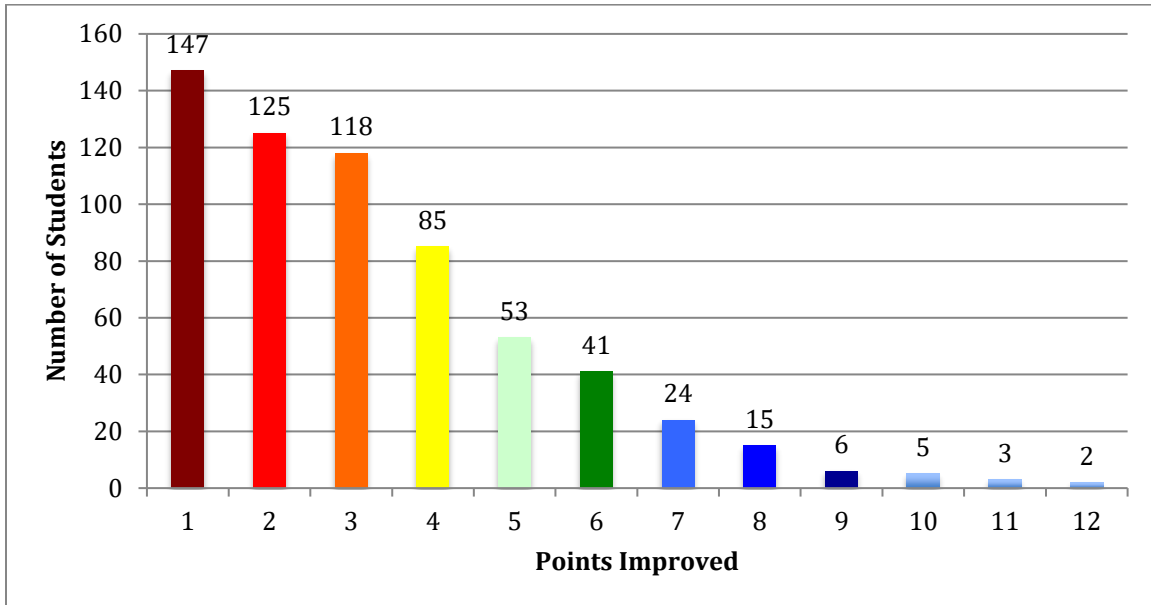


Figure 5. Frequency Distribution of Observed Science Score Changes

The distribution of score improvements between the pre- and post- scores for the Reading subject area is provided in Figure 6 (below). In total, 45.68% of students showed improvement, for an average gain of 3.58 points. The maximum score gain was 19 points.

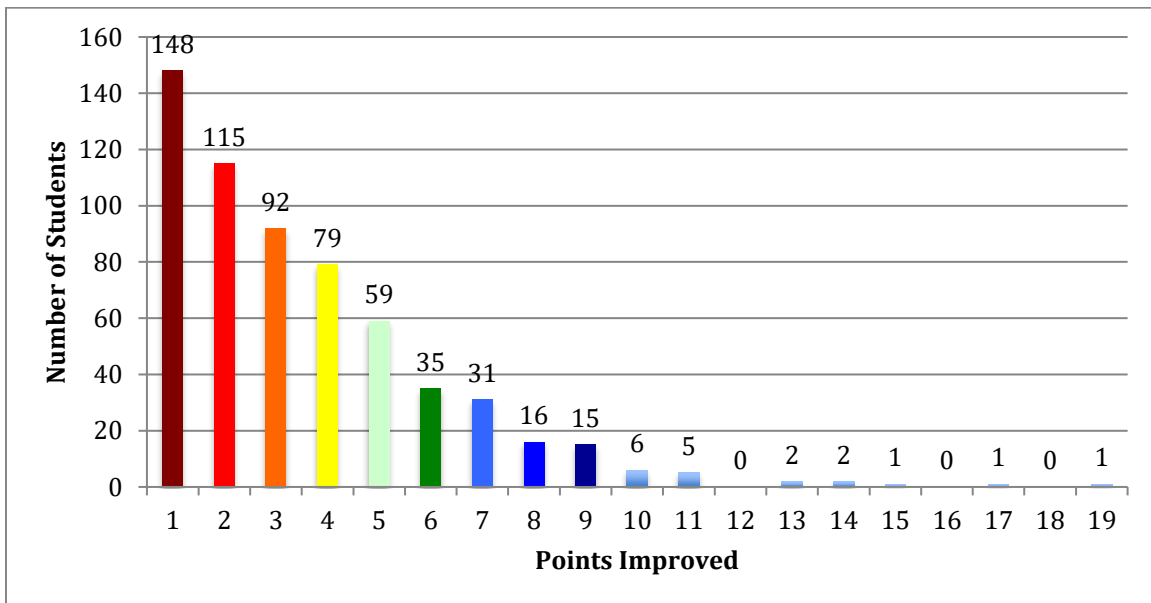


Figure 6. Frequency Distribution of Observed Reading Score Changes

The distribution of score improvements between the pre- and post- scores for the overall composite is provided in Figure 7 (below). In total, 49.75% of students showed improvement, for an average gain of 2.12 points. The maximum score gain was 11 points.

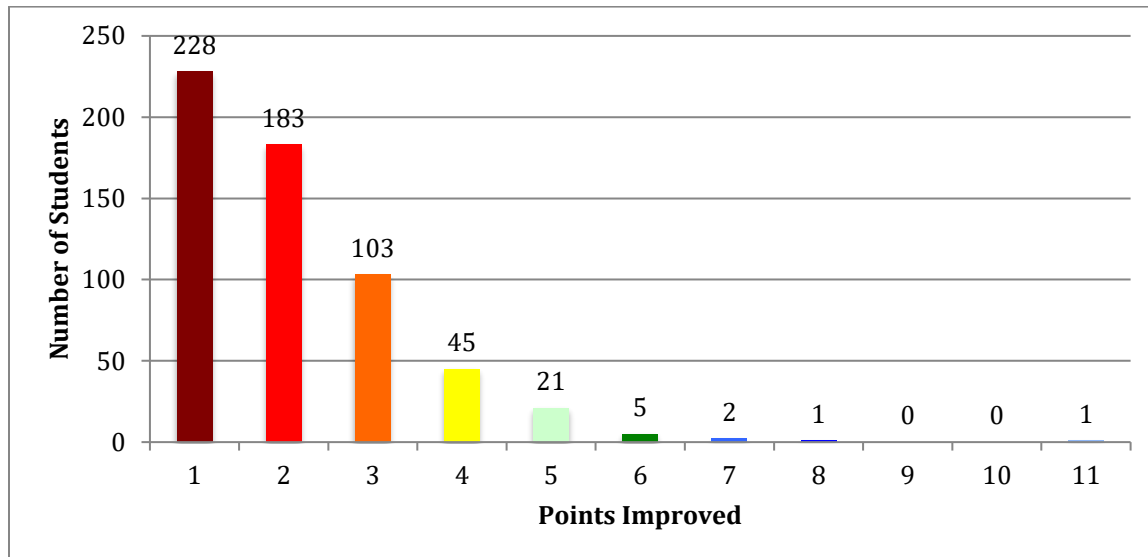


Figure 7. Frequency Distribution of Observed Composite Score Changes

### Magnitude of Jumpstart’s Impact on Mississippi Public High Schools’ Graduating Class Composite ACT Exam Average: +1.05 Points

Graduating class averages include the best observed ACT exam composite score for each student from all prior attempts, including the state mandated test provided to all Mississippi Junior students. These results are broken into three groups: those students with pre-scores who showed improvement with the aid of Jumpstart (n=589), those students who did not improve (n=595), and those students who had no pre-test to formally track improvement (n=502). We impose the assumption that this third group of students improved at similar rates to the group of students where pre- and post- test scores were observed. This means we expect a similar rate of students to show improvement (49.75%) and a similar rate of improvement among that group (+2.12 points). Altogether, it should be noted that the estimates of score impact on students with no pre-scores is likely conservative, as first-time test takers have more room for improvement than repeat test takers do.

Group Description	#	Avg. Score Impact
Students w/ pre-test, who improved	589	+2.12
Students w/ pre-test, who did not improve	595	+0.00
Students w/ no pre-test	502	+1.05
<b>All students</b>	<b>1,686</b>	<b>+1.05 PT Improvement in MS HS’s Graduation Class</b>



**Table 1. Magnitude of Impact on Composite Score  
Statistical Tests of Program Effectiveness**

Statistical tests are to confirm that the visual performance gains are statistically significant: or, in other words, that we can conclude these improvements seen among this sample of students is likely to be meaningful and expected to generalize to all students in the population.

See Table 2 for the overall results, in which it is shown that improvements are statistically significant for all students in each individual subject area (Math, English, Science and Reading), as well as at the Composite exam level. Importantly, this test of program effectiveness is conservative in that it includes students who actually performed worse on the state wide testing date, which could be due to a student being comfortable with an earlier earned score, among other factors. Moreover, it is well established that students have less improvement to gain on repeat exam attempts, meaning that our approach to require at least one formal prior test attempt upon which to gauge improvement is inherently rigorous.

The second column of Table 2 shows the magnitude and statistical significance of the rates of improvement in all subject areas and the composite among the group of students who showed improvement from the pre-test to the post-test. A notable finding that arises here is that, while average rates of improvement were lowest in Science and Reading when negative exam score changes were included in the consideration group, these subject areas show the largest gains when considering only the students that showed improvement. Thus, there is some evidence of boom or bust program effectiveness for these two subject areas: potential gains are quite high, but some students fail to realize them.

	All Students (Including Post- Decreases)	Those Who Improved
Math	<b>+0.51 (3.27%) **</b> [n=239]	<b>+2.08 (13.89%) **</b> [n=116]
English	<b>+1.17 (8.70%) **</b> [n=239]	<b>+2.83 (21.67%) **</b> [n=142]
Science	<b>+0.36 (1.98%) **</b> [n=1,311]	<b>+3.29 (19.38%) **</b> [n=624]
Reading	<b>+0.28 (1.54%) **</b> [n=1,311]	<b>+3.58 (21.20%) **</b> [n=608]
Composite	<b>+0.54 (3.05%) **</b> [n=1,184]	<b>+2.12 (12.18%) **</b> [n=589]

**Table 2. Student Improvement Analysis; One Tail T-Tests of Significance; \*\* = p<.05; \* = p<.10**

### **Improvements Observed By Gender**

Narrowing in on the rates of improvement observed by type of student, Table 3 provides a gender breakdown, in which the average rate of improvement is measured among males and females with positive score developments. Once again, t-tests are applied to confirm that these observed improvements are significantly different from zero.

	Males	Females
Math	<b>+1.95 (12.95%)</b> ** [n=61]	<b>+2.22 (14.91%)</b> ** [n=55]
English	<b>+2.70 (22.08%)</b> ** [n=69]	<b>+2.96 (21.37%)</b> ** [n=73]
Science	<b>+3.50 (21.05%)</b> ** [n=294]	<b>+3.10 (17.92%)</b> ** [n=330]
Reading	<b>+3.71 (22.48%)</b> ** [n=277]	<b>+3.46 (20.09%)</b> ** [n=331]
Composite	<b>+2.24 (13.06%)</b> ** [n=264]	<b>+2.03 (11.51%)</b> ** [n=325]

**Table 3. Gender Breakdown; One Tail T-Tests of Significance; \*\* = p<.05; \* = p<.10**

### Improvements Observed By Ethnicity

Table 4 provides an ethnicity breakdown. Historically Disadvantaged (African Americans, Latinos, Native Americans) and Whites/Asians are the two groups of analysis interest here. Substantive gains are found for both groups.

	Historically Disadvantaged	Whites / Asians
Math	<b>+2.05 (13.69%)</b> ** [n=106]	<b>+2.40 (15.89%)</b> ** [n=10]
English	<b>+2.88 (22.41%)</b> ** [n=130]	<b>+2.33 (15.11%)</b> ** [n=12]
Science	<b>+3.24 (21.05%)</b> ** [n=331]	<b>+3.22 (16.79%)</b> ** [n=232]
Reading	<b>+3.36 (23.12%)</b> ** [n=315]	<b>+3.71 (19.04%)</b> ** [n=241]
Composite	<b>+1.98 (12.93%)</b> ** [n=307]	<b>+2.28 (11.44%)</b> ** [n=221]

**Table 4. Ethnicity Breakdown; One Tailed T-Tests of Significance; \*\* = p<.05; \* = p<.10**

### Improvements Observed By School Quality

Table 5 provides an breakdown by school quality, as measured by Greatschools.org. High quality schools are those given a 2019-2020 academic year rating of 7 out of 10 or higher, while low/mid quality schools are those with ratings of 6 or lower.

	High Quality Schools	Low Quality Schools
Math	<b>+2.19 (13.74%)</b> ** [n=16]	<b>+2.06 (13.89%)</b> ** [n=100]
English	<b>+2.26 (13.46%)</b> ** [n=19]	<b>+2.92 (23.38%)</b> ** [n=123]
Science	<b>+3.25 (17.51%)</b> ** [n=311]	<b>+3.32 (21.53%)</b> ** [n=313]
Reading	<b>+3.71 (19.83%)</b> ** [n=308]	<b>+3.44 (22.90%)</b> ** [n=300]
Composite	<b>+2.24 (11.41%)</b> ** [n=261]	<b>+2.03 (12.98%)</b> ** [n=328]

**Table 5. School Quality Breakdown; One Tailed T-Tests of Significance; \*\* = p<.05; \* = p<.10**

In sum, it is clear that similar rates of improvement that may be attributed to Jumpstart Test Prep are shared among students from different genders, ethnicities and schools attended.

### JTP Impact on Graduation Rate – At Risk Algebra 1 Students

The following analysis (reported in Table 6 below) considers the impact of the Jumpstart Test Prep ACT math review at aiding students' improvement to reach an

ACT math section score of 17 or higher from prior best observed score; or, in the case with no prior score, the likely impact the Jumpstart program had in helping a student achieve a 17 or higher that would have otherwise scored a 16 or lower without the program.

Achievement of 17 on the Math section of the ACT is an approved option for students who fail to meet the Algebra 1 end-of-course (EOC) graduation requirement. This risk of failing to graduate due to not meeting this requirement is reduced by 19.81% as 42 of 212 at-risk students cross the alternative math subject level ACT score threshold at our group of 19 Mississippi Public High Schools with the assistance of Jumpstart Test Prep.

<b>Group of Students</b>	<b>Number in Group</b>	<b>Graduation Risk Mitigated (Scored 17 or higher)</b>
Not at risk	58	n/a
<i>At risk (16-16.99)</i>	<i>51</i>	<i>17</i>
<i>At risk (15-15.99)</i>	<i>61</i>	<i>8</i>
<i>At risk (13-14.99)</i>	<i>60</i>	<i>5</i>
<i>At risk (12.99 or less)</i>	<i>9</i>	<i>1</i>
<i>At risk (no prior score)</i>	<i>31</i>	<i>11</i>
<b>At risk (total)</b>	<b>212</b>	<b>42</b>
<b>Overall Impact</b>	<b>w/o Jumpstart:</b> 212 (of 270) students at risk <b>w/ Jumpstart:</b> 170 (of 270) students at risk <b>Impact:</b> 19.81% graduation risk reduction due to Algebra 1 end-of-course failure	

**Table 6. Math Threshold Analysis**

### **JTP Impact on Graduation Rate – At Risk English II Students**

Table 7 reports a similar analysis for the English portion of the ACT exam. Achievement of 17 on the English section of the ACT is an approved option for students who fail to meet the Algebra 1 end-of-course (EOC) graduation requirement. This risk of failing to graduate due to not meeting this requirement is reduced by 15.11% at our group of 19 Mississippi High Schools as 34 of 225 at-risk students cross the alternative English subject level ACT score threshold with the assistance of Jumpstart Test Prep.

<b>Group of Students</b>	<b>Number in Group</b>	<b>Graduation Risk Mitigated (Scored 17 or higher)</b>
Not at risk	45	n/a
<i>At risk (16-16.99)</i>	12	7
<i>At risk (15-15.99)</i>	23	6
<i>At risk (13-14.99)</i>	44	9
<i>At risk (12.99 or less)</i>	115	2
<i>At risk (no prior score)</i>	31	10
<b>At risk (total)</b>	<b>225</b>	<b>34</b>
<b>Overall Impact</b>	<b>w/o Jumpstart:</b> 225 (of 270) students at risk <b>w/ Jumpstart:</b> 191 (of 270) students at risk <b>Impact:</b> 15.11% risk reduction due to English II end-of-course failure	

Table 7. English Threshold Analysis

### JTP Impact on Graduation Rate – At Risk Biology Students

Table 8 reports a similar analysis for the Science portion of the ACT exam. Achievement of 17 on the Science section of the ACT is an approved option for students who fail to meet the Biology 1 end-of-course (EOC) graduation requirement. This risk of failing to graduate due to not meeting this requirement is reduced by 48.25% at our group of 19 Mississippi High Schools as 400 of 829 at-risk students cross the alternative Biology subject level ACT score threshold with the assistance of Jumpstart Test Prep.

<b>Group of Students</b>	<b>Number in Group</b>	<b>Graduation Risk Mitigated (Scored 17 or higher)</b>
Not at risk	823	n/a
<i>At risk (16-16.99)</i>	119	55
<i>At risk (15-15.99)</i>	99	41
<i>At risk (13-14.99)</i>	134	51
<i>At risk (12.99 or less)</i>	136	44
<i>At risk (no prior score)</i>	341	209
<b>At risk (total)</b>	<b>829</b>	<b>400</b>
<b>Overall Impact</b>	<b>w/o Jumpstart:</b> 829 (of 1,652) students at risk <b>w/ Jumpstart:</b> 429 (of 1,652) students at risk <b>Impact:</b> 48.25% risk reduction due to Biology end-of-course failure	

Table 8. Science Threshold Analysis

### JTP Impact on Graduation Rate – At Risk U.S. History Students

Table 9 reports a similar analysis for the Reading portion of the ACT exam. Achievement of 17 on the Reading section of the ACT is an approved option for

students who fail to meet the U.S. History end-of-course (EOC) graduation requirement. This risk of failing to graduate due to not meeting this requirement is reduced by 33.68% at our group of 19 Mississippi High Schools as 322 of 956 at-risk students cross the alternative reading subject level ACT score threshold with the assistance of Jumpstart Test Prep.

<b>Group of Students</b>	<b>Number in Group</b>	<b>Graduation Risk Mitigated (Scored 17 or higher)</b>
Not at risk	728	n/a
<i>At risk (16-16.99)</i>	89	43
<i>At risk (15-15.99)</i>	116	38
<i>At risk (13-14.99)</i>	193	49
<i>At risk (12.99 or less)</i>	205	25
<i>At risk (no prior score)</i>	353	167
<b>At risk (total)</b>	<b>956</b>	<b>322</b>
<b>Overall Impact</b>	<b>w/o Jumpstart:</b> 956 (of 1,684) students at risk <b>w/ Jumpstart:</b> 634 (of 1,684) students at risk <b>Impact:</b> 33.68% risk reduction due to U.S. History end-of-course failure	

**Table 9. Reading Threshold Analysis**

### Summary

In conclusion, the pilot of the Jumpstart Test Prep complete ACT review at 22 Mississippi Public High Schools led to substantial improvements in ACT exam scores. Half of the students with previous exam attempts experienced a Composite score increase, with an average composite point of gain of 2.12 among those students who did improve. Observed average rates of improvement were even higher by subject area: Math (2.08), English (2.83), Science (3.29) and Reading (3.58). Gains were shared across gender, ethnicity and school quality factors and implementation of the program reduced subject level end-of-course graduation requirement risks by 15% to 48%. It is key to reiterate here that rigorous aggregate level t-tests in which pre- to post- score changes are assessed demonstrated that all four subject areas and the composite average saw statistically significant positive score changes at the critical p-value of .05 (see Column 1 of Table 2). This threshold effectively gives us 95% confidence that the results observed in this sample would generalize<sup>1</sup> to the population of interest (i.e., all High School Juniors).

## Appendix

<b>School</b>	<b># of Juniors</b>	<b>Avg. 2018 ACT Composite</b>
Baldwyn High School	52	17.5
Bay Springs High School	49	15.9
Canton High School	187	15.4
Charleston High School	55	15.2
Desoto Central High School	463	19.9
Enterprise Attendance Center	46	17.0
Forest Hill High School	255	15.0
Forrest County Agricultural	134	17.9
Franklin County High School	91	17.5
Lumberton High School	37	15.9
Okolona High School	37	15.2
Pearl High School	273	18.8
Ray Brooks High School	14	14.3
Shaw High School	24	15.7
South Pike High School	107	15.0
Starkville High School	380	18.0
Sumrall High School	127	18.9
Vardaman High School	39	16.5
Vicksburg High School	198	14.8
West Bolivar High School	33	15.3
West Harrison High School	235	18.7
West Tallahatchie High School	48	15.0
<b>TOTALS</b>	<b>2,884</b>	<b>16.52</b>

**Appendix 1. Overview of Schools Selected for Pilot**

	Math	English	Science	Reading	Composite
Baldwyn	---	---	36.36%	40.91%	40.91%
Bay Springs	---	---	61.54%	50.00%	61.54%
Canton	47.10%	60.65%	45.81%	49.03%	54.84%
Charleston	---	---	54.55%	26.47%	36.36%
Desoto	---	---	56.02%	55.76%	65.66%
Enterprise	37.21%	44.19%	41.86%	41.86%	37.21%
Forrest County	---	---	39.39%	39.39%	45.45%
Forrest Hill	---	---	50.85%	40.68%	41.53%
Franklin County	---	---	52.11%	50.70%	53.52%
Lumberton	70.37%	62.96%	51.85%	51.85%	59.26%
Okolona	57.14%	85.71%	42.86%	71.43%	66.67%
Pearl	---	---	45.71%	46.96%	48.98%
Ray Brooks	---	---	38.46%	38.46%	23.08%
Shaw	---	---	70.00%	55.00%	70.00%
South Pike	---	---	---	---	---
Starkville	---	---	37.39%	36.52%	41.74%
Sumrall	---	---	53.85%	47.78%	47.25%
Vardaman	---	---	42.31%	26.92%	34.62%
Vicksburg	---	---	---	---	---
West Bolivar	---	---	40.00%	60.00%	20.00%
West Harrison	---	---	---	---	---
West Tallahatchie*	---	---	---	42.11%	47.37%

**Appendix 2. Percentage of Students Improved: School By School**

*\*West Tallahatchie adopted Science prep but failed to implement the vast majority of its content due to unexpected scheduling constraints.*

	Math	English	Science	Reading	Composite
Baldwyn	---	---	+2.69	+2.83	+2.17
Bay Springs	---	---	+3.56	+3.77	+2.50
Canton	+2.00	+2.85	+3.07	+2.91	+1.80
Charleston	---	---	+3.67	+3.33	+2.00
Desoto	---	---	+3.34	+4.10	+2.46
Enterprise	+2.19	+2.26	+2.78	+1.83	+1.50
Forrest County	---	---	+3.23	+3.49	+2.16
Forrest Hill	---	---	+3.18	+3.06	+1.73
Franklin County	---	---	+3.57	+3.33	+2.00
Lumberton	+2.32	+2.47	+3.07	+5.00	+2.44
Okolona	+2.00	+4.08	+2.67	+3.90	+2.40
Pearl	---	---	+3.28	+3.66	+2.00
Ray Brooks	---	---	+4.00	+2.80	+2.00
Shaw	---	---	+3.50	+4.09	+2.07
South Pike	---	---	---	---	---
Starkville	---	---	+3.88	+4.31	+2.44
Sumrall	---	---	+3.22	+4.02	+2.30
Vardaman	---	---	+2.36	+3.29	+2.00
Vicksburg	---	---	---	---	---
West Bolivar	---	---	+5.50	+2.33	+1.00
West Harrison	---	---	---	---	---
West Tallahatchie*	---	---	---	+4.38	+2.11

**Appendix 3. Average Points Improved Among Students Who Do Improve: School By School**

*\*West Tallahatchie adopted Science prep but failed to implement the vast majority of its content due to unexpected scheduling constraints.*