Field Study to Assess the Effectiveness of Jumpstart Test Prep's English Review for the ACT® Exam: 2020-2021 Academic Year Study of Mississippi Public High School Juniors

Prepared by

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Section 1. Abstract

1.1. Abstract

1.1.1. Trial Design

The core field study involves a pretest-posttest control group design where the expected growth in ACT® exam English sub-scores from 2020 to 2021 for the experimentally manipulated schools is statistically compared against the control group of schools. Score growth for the experimental group is also compared against a baseline expectation of zero as a second statistical test. As a third test of the intervention's effectiveness, individual student level score growth within the year at the experimentally manipulated schools is also examined in a one-group pretest-posttest experimental design and accompanying analysis. This final empirical test is benchmarked against a null expectation of no score growth for an individual student from the initial exam attempt (or series of attempts) to the post-Jumpstart Review exam attempt.

1.1.2. Methods

Two-tailed t-tests are utilized to statistically examine all three of the hypotheses of interest that were described in the previous section of this abstract. P-values are set to the standard level of 0.05. Data analysis will be conducted using STATA statistical analysis software and all data cleaning and analysis code will be made available upon request. Raw data will also be made available, if requested, but individual student identifying information will remain known to only the researchers for purposes of confidentiality.

1.1.3. Results

This is a methodological plan and pre-report. Data have yet to be collected and results are not yet available.

1.1.4. Conclusions

The research intends to assess the effectiveness of the Jumpstart ACT® English review program. Conclusions will be drawn after data analysis is complete.

Section 2. Introduction

2.1. Background and Objectives

2.1.1. Scientific background and explanation of rationale

To validate the effectiveness of Jumpstart Test Prep's English review program, a field experiment is designed for implementation during the 2021 state wide administration date

(February 2021) of the ACT® exam for Mississippi public high school juniors. This extensive field study that is planned for 2021 builds upon a similar set of trials that were conducted in the previous two academic years. The 2019 academic year trials were in the subject areas of Math (spanning 15 schools) and English (spanning 7 schools) and the results clearly demonstrated effectiveness of the program in both of these subject areas. The 2020 academic year trials were in the subject areas of Science and Reading (spanning 19 schools), and English and Math (spanning 6 schools), and those results again clearly demonstrated effectiveness of Jumpstart's Test Prep for all ACT® subject areas.

The proposed methodological approach follows sound and accepted research practices along a number of key dimensions, including:

(a) **Demonstrate effectiveness** – The methodological setup and associated hypotheses are all aimed at achieving this goal. Effectiveness will be studied in multiple ways, including: (i) a comparison in current year exam scores against prior year exam scores for the experimentally manipulated group of schools; (ii) a comparison of score growth between the experimental group and a control group; and, (iii) a within sample individual student level comparison of score growth from an initial exam attempt to a second exam attempt, following the aid of the test prep (the intervention approach in question).

(b) **Multiple site, heterogeneous trials** – The field experiment treatment is planned to be implemented at about 35 unique schools, representing about 3,500 - 4,200 unique Junior student test takers. The scope of the planned trials will produce significant heterogeneity in the characteristics among those schools in the experimental condition. This allows the chosen sample to better approximate that of the whole population (all junior test takers in the state).

(c) **Statistical control** – Lastly, the level of statistical control in the proposed approach is strong. All schools in the data are set on the same benchmark (2020 test score performance) which provides for an equivalent starting point against which to compare 2021 test scores. Improvements from this consistently established baseline can then be safely attributed to the presence (or absence) of the experimental intervention. Student characteristics and school characteristics will also be tracked and considered in the resulting analysis.

Together, the proposed methodology, that is further explained in the remainder of this document, was carefully constructed to provide the most rigorous possible empirical examination of the effectiveness of the test preparation in question for the English sub-section of the ACT® exam.

2.1.2. Specific objectives or hypotheses

The objective is to establish whether Jumpstart Test Prep's proprietary review delivered on-demand via streaming video as students follow and complete the accompanying

workbook aids in the improvement of student scores on the English sub-section of the ACT® exam. Specifically, it is predicted that:

> **H1:** High schools that utilize Jumpstart Test Prep's proprietary review during the 2021 testing year will enjoy positive test performance growth in the English sub-section when compared to the prior year.

> **H2:** Test performance increases for the English sub-section will be higher in those high schools that utilize Jumpstart Test Prep's proprietary review during the 2021 testing year than in those high schools that do not use the review.

> **H3:** Individual students at high schools that utilize Jumpstart Test Prep's proprietary review during the 2021 testing year will enjoy positive test performance growth in the English sub-section above prior best scores on previous attempts of the exam.

Additional comparisons of the effectiveness of program across student characteristics (i.e. race, gender, aptitude, etc.) and school characteristics (i.e. school performance ratings, approach to implementation, school size, etc.) will also be conducted during the results stage, but no directional predictions about these potential effects are formally hypothesized. Several of these additional factors were considered in the analysis of 2019 and 2020 trial data on all sub-sections of the exam. See Appendix items 2-10 (in the back of this document), which show the 2019 academic year results from those subject areas. Appendix item 11 is an embedded word document which includes the full analysis report for the 2020 academic year. It may be reasonably expected that student and school level characteristics may impact program effectiveness in similar ways across subject areas. However, it is entirely possible that unique relationships may arise in the test area sub-section data to be collected (i.e. the Math area results may be different than the English area results).

Section 3. Methods

3.1. Trial Design

3.1.1. Background secondary data

Secondary data that are relevant to the field trials of interest will also be collected and utilized in the analyses. Specifically, publicly available junior year ACT® English scores for the state of Mississippi will be collected for the years 2019 and 2020[i]. These data are reported at the high school and then district levels of aggregation (data are not made available at the student level) and include only the achieved score by students during the statewide testing date (administered in February of each year). Testing data are reported each year for all of the 237 unique public high schools across the 138 unique school districts within the state of Mississippi.

These secondary data provide some important pieces of information that will strengthen the methodology as follows:

(a) It provides a holistic view of the distribution of the number of test takers and the average ACT® English section area scores achieved at each high school in the state in two consecutive years (2019 & 2020) prior to the implementation of the field trial study (2021).

- These data will be used to appropriately calibrate the observed results during analysis as they provide baseline indicators of high school level test performance against state level counterparts.

3.1.2. Randomization and self-selection

Following this secondary data collection to identify and account for all high schools in the state, a field trial will be designed to test for the effectiveness of the proposed program. All public high schools in the state of Mississippi were encouraged to apply for inclusion in the study, which will utilize public state funding to support the purchase of and implementation of the program to prep students for the English sections of the ACT® exam.

The same approach was taken with the Math and English field experiment in 2019 and, at that time, 110 of the 238 (46%) public High Schools responded to the offer. In 2020, 104 of the 238 (44%) public high schools responded to the offer. Similarly, the application process has ended for the 2021 field experiment, and 109 of the 238 (46%) public high schools have applied. By nature, self-selection by these schools to seek funding or not makes these trials non-randomized. Ideally, an experiment would be completely randomized in nature to increase the odds that the selected sample approximates the population of schools.

One could imagine that schools who proactively self-select for funding could be a special class of schools. Perhaps they are more proactive and supportive of their students and are actively supporting performance on statewide exams. Contrarily, it is also possible that those schools who seek funding support are generally poorly funded and underserved.

Data analysis will be planned to overcome this known, and unavoidable, limitation in trial design as best as possible. Specifically, by collecting characteristics and information on all schools in the state, the control groups can be divided into (a) those schools that sought funding but were not ultimately selected for program inclusion and (b) those schools that did not seek funding. More will be elaborated on this later in the document.

It is also important to note here that, as in the prior two field trials, a large number of schools who have sought funding for this resource will not have it granted, as only enough funding has been provided to support piloting of the Jumpstart English ACT® review program in about 35 schools (depending on student enrollments per school).

In 2019, the Mississippi Department of Education intervened and influenced the selection of the 15 schools for inclusion in the Math/English trials. For the 2020 trials, 22 schools were randomly selected (using a random number generator in Excel) from the list of 104 schools that applied to the program. The 2021 Jumpstart ACT® English pilot schools will also be randomly selected, with priority given to schools that have applied in years past, but not received the grant. More specific details on the planned approach are provided in Section 7. Appendix at the back of this document.

3.1.3. Trial design

Following the receipt of the applications from schools interested in implementing and participating in the Jumpstart English review field experiment, and the randomized selection of schools from that list, conditions for the trials will be populated as follows:

(a) **An experimental group** (~35 selected High Schools) vs.

(b) **A control group** (~203 High Schools that either do not apply or are not selected for inclusion[1])

The resulting field trial is a pretest-posttest control group design (see directly below).

Experimental Group (n=~35): O_1 X O_2
Control Group (n=~203): O_3 O_4

…where:

O_1 = 2020 test scores at experimental group schools
X = Utilization of Jumpstart Test Prep
O_2 = 2021 test scores at experimental group schools
O_3 = 2010 test scores at control group schools
O_4 = 2021 test scores at control group schools

The dependent variable of interest in the corresponding analysis will be the growth in the English portion of the ACT® exam for high school juniors at the experimentally treated schools from 2020 (the pre-test year) to 2021 (the post-test year). This is calculated by subtracting O_1 from O_2. Statistically comparing this growth against a baseline expectation of zero (no growth) will allow for a direct test of H_1 (that schools that receive the intervention will experience positive score growth).

A follow up test of H_2 will be calculated by comparing the growth at the experimentally treated schools against the control group schools. Thus, the difference between O_1 and O_2 will be statistically compared against the difference between O_3 and O_4. Specifically, H_2 posits that (O_2 - O_1) will be significantly larger than (O_4 – O_3).

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[1] Note that robustness checks will separate this control group into two separate baseline groups to test against during the analysis stage. The single control group is presented here for ease of explanation of the methodological approach.

Lastly, in order to test H_3 (that the test prep software will lead to score growth at the individual student level), a second trial design is planned entirely within the experimentally manipulated group of ~35 selected high schools. This analysis will be a one-group pretest-posttest, which takes the following form:

Experimental Group: O_5 X O_6

…where:

O_5 = 2021 early test taker scores at experimental group schools
X = Utilization of Jumpstart Test Prep
O_6 = 2021 administered date test scores at experimental group schools

Note that not all students are anticipated to make an attempt at the ACT® exam ahead of the state-wide administration date. In fact, it stands to reason that those students who do so are likely part of a selected group of high-achiever students who are proactive about their studies. Moreover, those students who have already taken the ACT® exam early and achieved a suitable score may be less motivated to prepare intensively for the statewide required test date in February of 2021.

Together, this means that testing for statistical improvement at the individual test taker level within the selected set of experimentally treated schools serves as a particularly **rigorous final test** of the Jumpstart review program's effectiveness. Quite simply, the ingoing expectation is that these selected students will likely have **less room to improve their score** with the aid of the intervention than a typical student would. To empirically assess H_3, O_5 will be subtracted from O_6. This score change will then be statistically compared against a null expectation of no score growth (zero).

Combined, the two planned analyses will allow for the intervention's effectiveness to be tested in three ways:

(a) Year-over-year high school level positive score growth among the experimentally treated schools (H_1).

(b) Year-over-year score growth comparison between high schools in the experimental group and high schools in the control group (H_2).

(c) Within-year student level score growth comparisons inside the experimental group of high schools (H_3).

3.2. Participants

3.2.1. Eligibility criteria for participants

As described in the above section, all schools were eligible for participation and encourage to apply. Among those schools that did apply, selection will occur through random number generation in Excel, with priority given to schools that have applied in year(s) past without receiving the grant.

3.2.2. Settings and locations where the data were collected

Publicly available data from 2019 and 2020 about high school level ACT® exam English portion averages will be collected from the Mississippi Department of Education's website. 2021 test performance data will be collected in the same way or provided by pilot schools if made available to them sooner than published data on the MDE website.

Once the school selection process takes place, the exact trial locations will be known. Additional student level information (i.e. demographics) within these schools will be collected at this time as well.

3.3. Interventions

3.3.1. The interventions for each group with sufficient details to allow replication, including how and when they were actually administered

A faculty orientation will be provided at all participating schools and student workbooks will be delivered as well. Access to the Jumpstart Test Prep English materials will be instructed to be released after the national ACT® test dates in October 2020 to allow more juniors the opportunity to complete at least one ACT® exam attempt prior to utilization of the test prep materials. Instructor delivery of content and materials will be monitored through site visits, while student access to online resource utilization is to be monitored through login and usage history.

3.4. Outcomes

3.4.1. Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed

The outcome measures will be the 2021 ACT® exam English scores. As described in more detail earlier, these are broken out and compared in several ways to facilitate empirical examination of the three hypotheses. Briefly:

(a) H_1 is tested by subtracting 2021 ACT® exam scores for the experimentally treated schools from the 2020 scores for those same schools. The baseline (null hypothesis) expectation is no score growth over this period, while H_1 predicts positive score growth.

(b) H_2 is tested by comparing the year-over-year (2021 vs. 2020) score growth between the experimental group of high schools and the control group of high schools. The null hypothesis is no difference in score growth between these two

groups, while H_2 predicts that year-over-year score growth will be significantly higher for the experimental group than for the control group.

(c) H_3 is an individual student level test of score growth within the 2021 academic year. This test is implemented by comparing the ACT® Exam English scores achieved by students that make an early exam attempt to the score achieved during the February 2021 state wide administration date. Null expectation is no score growth from the first to the second attempt, while H_3 predicts a higher performance on the second attempt with the aid of the Jumpstart test prep materials.

3.4.2. Any changes to trial outcomes after the trial commenced, with reasons

Trial has yet to commence. Any such changes, should they occur, will be reported following commencement.

3.5. Sample Size

3.5.1. How sample size was determined

Sample size of the experimental group will be determined by the funding constraint by the Mississippi legislature using Jumpstart Test Prep's per student preferred pricing. Sample size of the control group is all of the remaining public high school juniors in the state of Mississippi.

3.5.2. When applicable, explanation of any interim analyses and stopping guidelines

Not applicable.

3.6. Randomization

3.6.1. Method used to generate the random allocation sequence

Randomization was not possible to completely implement, due to reasons described earlier. Approaches to account for self-selection processes in the resulting analyses will be implemented.

3.6.2. Type of randomization; details of any restriction (such as blocking and block size)

Not applicable.

3.6.3. Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned

Not applicable.

3.6.4. Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions

Not applicable.

3.7. Blinding

3.7.1. If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how

No blinding will be conducted.

3.7.2. If relevant, description of the similarity or interventions

Not applicable.

3.8. Statistical Methods

3.8.1. Statistical methods used to compare groups for primary and secondary outcomes

The core analyses will involve a series of t-tests. Specifically:

- H_1 will be tested with a one sample t-test, comparing the 2020 to 2021 growth in the school level score average against the baseline expectation of zero (no growth).

- H_2 will be tested with a two independent sample t-test, comparing the score growth from 2020 to 2021 between the experiment group and the control group of high schools.

- H_3 will be tested with a one sample t-test, comparing the individual student level score growth from an initial test attempt to the February 2021 state wide test attempt; this individual student level score growth will be tested against the baseline expectation of zero (no growth).

In the statistical tests of all three hypotheses, the most widely accepted cut-off p-value of 0.05 for claiming statistical significance will be utilized. Two-tailed significance tests (which are the most conservative) will be reported.

3.8.2. Methods for additional analyses, such as subgroup analyses and adjusted analyses

A subgroup analysis of the high school level test performance data that further divides the control group into two sub-sections will also be conducted for purposes of robustness.

The control group will be divided as follows in this additional analysis:

- Did not apply for inclusion in the pilot study (Control Group #1)
- Applied for inclusion in the pilot study, but was not selected (Control Group #2)

This additional analysis approach will empirically consider potential self-selection effects (i.e., perhaps those high schools that would not apply for this program are less invested in the success of their students on the ACT® exam). Each of these two sub-groups' ACT® exam score growth from 2020 to 2021 will be independently compared against the score growth for the experimentally manipulated schools to provide one final test of H_2.

Subgroup analyses are planned as well within the individual student data in the experimentally treated high schools without any ingoing expectations about the associated results. The goal of these analyses will be to determine if certain students experience stronger test performance gains from the use of the program than other students do.

These subgroup analyses will include:

- Gender
- Race/Ethnicity
- Aptitude (based on initial test scores observed)

School level analyses are also planned based on strength of the school and the approach taken to program implementation. Both of these factors were found to significantly influence results during the 2019 Math/English trials, and the 2020 Science/Reading trials.

Finally, predictive analyses will be conducted to estimated expected score growth for schools in future years with the proposed full-scales implementation of the intervention in question. It is assumed that certain schools and certain students may benefit more than others from the aid of the intervention, also this is not yet certain. These additional predictive analyses will provide a clear picture about the magnitude of potential score growth benefits and how they are distributed across the range of students and high schools in the state of Mississippi.

Section 4. Results

4.1. Participant Flow

4.1.1. For each group, the number of participants who were randomly assigned, received intended treatment, and were analyzed for the primary outcome

Data not yet collected.

4.1.2. For each group, losses and exclusions after randomization, together with reasons

Data not yet collected.

4.2. Recruitment

4.2.1. Dates defining the periods of recruitment and follow-up

Recruitment began with the Mississippi Department of Education announcement to schools on August 18, 2020 and concluded on September 18, 2020 with 109 interest applications collected.

4.2.2. Why the trial ended or was stopped

The trial has not yet been ended or stopped. If it should be stopped in the future, an explanation as to why will be provided.

4.3. Baseline data

4.3.1. A table showing baseline demographic and clinical characteristics for each group

Data not yet collected.

4.4. Numbers Analyzed

4.4.1. For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups

Analysis has yet to be conducted.

4.5. Outcomes and Estimation

4.5.1. For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)

Analysis has yet to be conducted.

4.5.2. For binary outcomes, presentation of both absolute and relative effect sizes is recommended

Not applicable. This study utilizes continuous variable outcomes.

4.6. Ancillary Analyses

4.6.1. Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory

Analysis has yet to be conducted.

4.7. Harms

4.7.1. All important harms or unintended effects in each group

No harms are anticipated. Should they arise as the study persists, they will be reported.

Section 5. Discussion

5.1. Limitations

5.1.1. Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses

The clearest limitation of the planned methodological approach is the lack of complete randomization. Unfortunately, randomization can not be implemented due to factors outside of the researchers' control. However, following the Maryland Scientific Methods scale, the methodological approach does achieve 4 of the 5 desired criteria (descriptive comparisons; pre-post testing; control group; high-quality statistical controls). Thus, the approach is quite strong.

In particular, the inclusion of prior and current year testing data for all high schools within the state of Mississippi allows for a suitable comparison of score growth between the ~35 schools in the experimental condition and the rest of the schools in the state (the control group).

The inclusion of selection criteria and demographic variables also provide high-quality statistical control, which help to reduce the concerns associated with the lack of a randomized experimental design approach.

Accounting for self-selection in analysis also overcomes some of the potential issues related to the lack of randomization.

5.2. Generalizability

5.2.1. Generalizability (external validity, applicability) of the trial findings

Given the rather strong methodological approach which includes planned analyses at both the individual student and high school aggregate levels, along with the completeness of the utilized data across the experimental and control groups (complete panel of three years' worth of aggregate test score data for all public high schools in the state), the applicability and validity of the findings are expected to be high.

Should the results yield significant effects in line with hypothesized predictions, it would be safe to conclude that the trial should generalize to population level. Or, in other words, if this trial is successful, as in the prior two trials, the Jumpstart Test Prep review program should be deemed an effective set of interventions to improve state wide ACT® Exam composite and sub-scores.

The additional planned analyses that would provide predictions at the individual student and high school levels of relative score growth magnitudes would further provide specific context of the intervention's expected rate of effectiveness.

5.3. Interpretation

5.3.1. Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence

The harms of the intervention on human subjects appears to be nonexistent. All benefits (test score improvements) should simply be weighted against monetary costs of supporting the implementation of the test prep review in the public-school system.

Section 6. Other Information

6.1. Registration

6.1.1. Registration number and name of trial registry

Not applicable.

6.2. Protocol

6.2.1. Where the full trial protocol can be accessed, if available
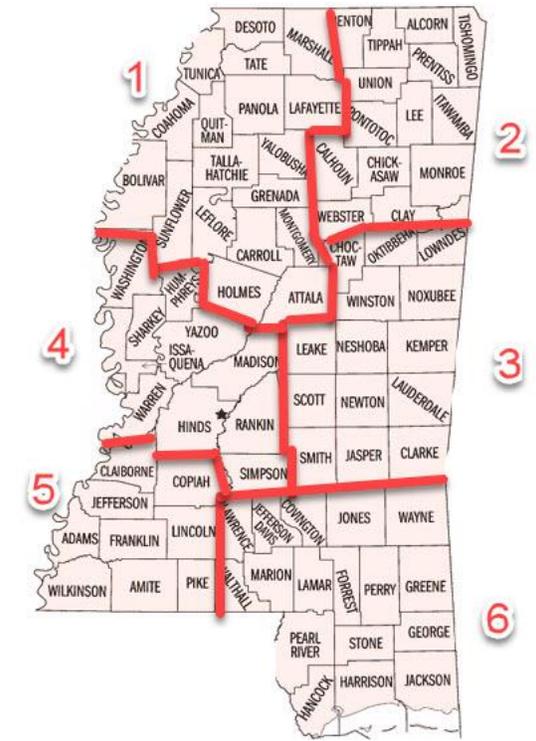
Not applicable.

6.3. Funding

6.3.1. Sources of funding and other support (such as supply of drugs), role of funders

The planned trial study will be funded through a $175k outlay by the state of Mississippi in association with House Bill No. 1700.

Section 7. Appendix

2020-21 Random Selection: If more schools apply for funding than there is funding available, two narrowing criteria will cause a school to be excluded from the random draw:
   (a) The school in question has previously received funding from this program. 18 of 109 applying schools were removed for this reason.
   (b) The school in question has reported a very low percentage of pre-test ACT scores (less than 10% of students), which significantly reduces the ability to measure and assess the success of the program. 28 schools were removed for this reason.

Among the 63 remaining schools that remain in the selection pool, odds of selection are weighted based on the six geographic regions of Mississippi (see visual directly above). Territories 2 and 6 had the most applications, so a school in those areas had a 25% chance of being drawn. Territories 1 and 3 had a bit lower volume of applications and had their odds set to 33.33%. Territories 4 and 5 had much fewer applications and had their volume-weighted odds of selection set to 80% and 66.67%, respectively. Those schools in the draw group (n=16) who had applied all 3 previous years without being selected in any of those years will have their odds doubled for the draw.

The schools within each geographical zone were divided into performance groups based on junior class 2019 ACT composite results to ensure a diverse school selection based on academic strength.
'A' = at or above state composite average of 18

'B' = 1 point or less lower than state composite average of 18
'C' = between 1 and 2 points lower than state composite average of 18
'D' = between 2 and 3 points lower than state composite average of 18
'F' = 3 points or more below state composite average of 18

Random draws will be taken with Excel until the following criteria are satisfied:
(a) A minimum of 3,500 and a maximum of 4,200 Juniors are represented.
(b) Per each territory, a minimum of 4 total schools with at least 1 mid/high (A/B/C) and 1 low/mid (C/D/F) rated school by academic strength are selected.

Appendix 1. 2018-19 School Selection Details

High School	Score Change	% Change	% Improving	Improve Avg.
Long Beach	+1.56	+7.84%	68%	+3.00
North Pike	+1.22	+6.35%	58%	+2.82
Ruleville	+1.00	+6.71%	68%	+1.69
Hazlehurst	+0.82	+5.37%	60%	+2.04
Ray Brooks	+0.67	+4.20%	45%	+2.00
Salem	+0.60	+3.63%	53%	+1.75
Coldwater	+0.59	+3.70%	47%	+2.75
Bay Springs	+0.57	+3.41%	47%	+2.29
Bouge Chitto	+0.42	+2.35%	37%	+2.55
Lake Cormorant	+0.42	+2.35%	43%	+2.31
Wingfield	+0.41	+2.86%	43%	+2.31
Laurel	+0.02	+0.12%	47%	+1.57
West Point	+0.01	+0.09%	43%	+1.58
Franklin County	0.00	0.00%	34%	+1.86
Blue Mountain	-0.42	-2.60%	33%	+2.00

Appendix 2. Impact of Jumpstart Test Prep on Math Portion of the Exam (2019)

High School	Score Change	% Change	% Improving	Improve Avg.
North Pike	+2.80	+14.04%	76%	+3.94
Ruleville	+0.63	+4.82%	42%	+2.63
Ray Brooks	+0.33	+2.65%	45%	+2.25
Bouge Chitto	+1.58	+8.54%	67%	+2.93
Wingfield	+1.03	+8.81%	58%	+2.88
West Point	+0.31	+2.01%	41%	+2.57
Franklin County	+1.41	+9.56%	57%	+3.52

Appendix 3. Impact of Jumpstart Test Prep on English Portion of the Exam (2019)

	Males (Math: n=287; English: n=130)			Females (Math: n=419; English: n=202)		
	Pre-	*Change*	*%*	*Pre-*	*Change*	*%*
Math	16.45	+0.49	+2.98%	16.96	+0.46	+2.71%
English	13.15	+1.16	+8.82%	15.86	+1.24	+7.82%

Appendix 4. Student Gender Impact in Math and English (2019)

	Minorities	Whites

	(Math: n=448; English: n=183)			(Math: n=198; English: n=89)		
	Pre-	*Change*	*%*	*Pre-*	*Change*	*%*
Math	15.65	+0.41	+2.62%	19.12	+0.80	+4.18%
English	12.79	+0.98	+7.66%	18.42	+2.43	+13.19%

Appendix 5. Student Race Impact in Math and English (2019)

	Strong Students (Math: n=273; English: n=151)			Weak Students (Math: n=448; English: n=195)		
	Pre-	*Change*	*%*	*Pre-*	*Change*	*%*
Math	20.11	+0.10	+0.50%	14.67	+0.72	+4.91%
English	19.28	+1.06	+5.50%	11.29	+1.35	+11.96%

Appendix 6. Student Strength Impact in Math and English (2019)

	Strong Schools (Math: n=419; English: n=279)			Weak Schools (Math: n=213; English: n=125)		
	Pre-	*Change*	*%*	*Pre-*	*Change*	*%*
Math	17.85	+0.59	+3.31%	15.07	+0.32	+2.12%
English	16.41	+1.38	+8.31%	11.89	+0.97	+8.16%

Appendix 7. School Strength Impact in Math and English (2019)

	Class Instruction (Math: n=560; English: n=336)			Student Lab Only (Math: n=161; English: n=10)		
	Pre-	*Change*	*%*	*Pre-*	*Change*	*%*
Math	17.06	+0.57	+3.34%	15.66	+0.20	+1.28%
English	14.84	+1.25	+8.42%	12.60	+0.33	+2.62%

Appendix 8. Program Implementation Impact in Math and English (2019)

Pre-Test Score vs. Threshold	Math Conversion Rate	English Conversion Rate
6.00 points shy or less	3.70%	2.38%
3.01-6.00 points shy	3.51%	9.09%
2.01-3.00 points shy	6.25%	28.57%
1.01-2.00 points shy	27.27%	28.57%
0.01-1.00 points shy	50.00%	63.16%

Appendix 9. Program's Ability to Convert Students Across CCR Thresholds in Math and English (2019)

Survey Question	Principals	Teachers
Do you think students who utilized JTP performed better on the February 2019 attempt than they would have without?	100%	96%
Next year, would you like for your school's juniors to have access to the complete JTP ACT review before Feb. attempt?	100%	100%
I would recommend JTP ACT Review to other school districts.	100%	92%

Appendix 10. School Administrator Satisfaction with Math and English Prep (2019)

Master_Writeup_v8
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Appendix 11. Embedded Document Item w/ Full 2020 Analysis Report

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[i] 2018 Junior Year ACT data
(https://www.mdek12.org/sites/default/files/Offices/MDE/OEA/OPR/2018/2018-ACT-Junior-Year.pdf)