April 17, 2024

To: All Potential Respondents
From: Katelyn Howells, Purchasing Agent
Subject: 005-RFP-0918-2024 GEAR UP Iowa 3.0 Research & Evaluation Services

Addendum One

Please amend the subject RFP to include answers to the following timely received questions:

Q1. In the past and currently, does Iowa have a central online database to gather and summarize GEAR UP data from grantees? Does the state have a need for this?
A1. GEAR UP Iowa has had/will have a central online database already in place.

Q2. Is there a specific form to be used for the letter of reference?
A2. No specific form is required.

Q3. Will IA continue its membership on CCREC in the 3.0 cycle? To what extent will the vendor interface with CCREC study partners?
A3. Iowa has not been a member of CCREC, having only served as a contributing member to the evaluation advisory team in the past. Iowa does not anticipate directly interfacing with CCREC study partners at this time.

Q4. Is the biannual report a state requirement because it is no longer required by USDOE?
A4. The biannual report is part of our evaluation design.

Q5. Can you provide the project's logic model and list of project objectives and goals?
A5. Attached is a copy of the program's objectives, goals and performance measures.

Q6. At how many total school sites (campuses) will GEAR Up programming take place?
A6. 13 districts with a total of 26 middle schools, feeding into 21 high schools.

Q7. Are site visits an expectation for the evaluation? If so, is there a preference for in-person or virtual visits?
A7. Site visits are not an expectation.

Q8. Can you clarify what you mean by exhibit? Is this synonymous with a written section?
A8. Correct.

Q9. Where in the proposal should Staffing for the project be described?
A9. There is not a specific section, it would be dependent upon what required information it addresses. It likely makes most sense to include under Experience.

Q10. Does Iowa anticipate using a cohort model or hybrid model?

A10. We implement a hybrid, but it is primarily a cohort model. We begin in 7th grade following through the first year of college. We do have two middle schools with priority students for the first two years of the grant, which will feed into the partner high schools in 9th grade, when we will add all 9th grade students.

Q11. What are the specific evaluation requirements from the grant?

A11. In addition to tracking 12 performance measures across the length of the program, we will implement a comprehensive evaluation plan to determine the extent to which the program impacts academic preparation, expectations for higher education, high school graduation, and postsecondary enrollment and persistence. This range of metrics will monitor and document student improvement from the start of the program through the cohort's second year of college. Our longitudinal strategy will ensure that the evaluation monitors elements of the program every year.

Our evaluation plan identifies a number of research questions that will be examined at the end of 8th, 10th and 12th grades and the first year of college, comparing GUI student outcomes to a matched sample of Iowa students who have never attended a GUI school. For example, the research questions at the end of 8th grade are: 1. Does the project increase students' academic performance, as measured by course grades (course grades will be measured in math, science, language arts, and social studies)? 2. Does the project increase students' academic performance, as measured by proficiency on standardized test scores (test scores for proficiency will be measured based on proficiency cutoffs from state assessments)? 3. Does the project increase students' college and career readiness, as measured by assessment scores (test scores for college readiness will be measured by higher scores on the assessment)? 4. Does the project increase students' school attendance (attendance will be measured by the number of unexcused absences)? Our plan will produce four comprehensive evaluation reports after 8th, 10th, 12th grades, and the first year of college. These reports serve multiple purposes including communicating to stakeholders at partner schools, as well as policy makers at the state and national level.

In addition to our evaluation plan, we have an embedded research study to further determine the impact of the project. We will undertake a randomized control trial (RCT) to examine the impact of a summer melt mitigation program to promote college enrollment at the start of students' first year of college.

Q12. Are there previous GEAR UP Iowa evaluation reports that can be shared for us to review?

A12. Attached is an example of a previous evaluation report.

Q13. Does the state want to continue with the evaluation framework/methods applied in the previous evaluation cycles for the purpose of consistency, or is it looking for additional and new evaluation methods to supplement what's missing in existing evaluation results?

A13. We are committed to the model that was outlined in the approved grant proposal, but will work with the selected contractor to advise on any potential modifications and/or improvements.

Q14. Does GEAR UP Iowa have an existing logic model or theory of change that can be shared?

A14. We would be willing to share this information upon award. We can share the program goals, objectives and performance measures.

Q15. Will the contractor be able to coordinate with school districts to obtain student data for the evaluation?

A15. We will have access to all data necessary for the evaluation, but the contractor would be able to work with schools if something additional was identified.

Q16. What is the budget for evaluation services?

A16. Up to $40,000/year (this was what was included in the approved grant budget).

Q17. Section 3.2, Exhibit 4 on page 11, states that "Awarded Respondent will be required to register to do business in Iowa before payments can be made." If awarded, will we be required to register to do business in Iowa?

A17. Yes.

Please acknowledge receipt of this addendum by signing in the space provided below, and <u>return this letter with your offer (do not send back separately).</u>

I hereby acknowledge receipt of this addendum.

_____ _____

Signature Date

_____

Typed or Printed Name

GEAR UP Iowa 3.0 : Goals, Objectives, and Performance Meas						
Goal: Significantly increase the proportion of GUI 3.0 students who are prepared to enter and succeed in PSE						
Objective	**Performance Measures**	**Base**	**Target**	**Data**	**Time frame**	**Explanation of Baseline**
Increase academic performance and preparation for PSE	PM 1: % of GUI students will pass Algebra I by the end of 9th grade. (GPRA#1)	89%	91%	Algebra I course completion	End of 9th	Outcome for GUI 2.0
	PM 2: % of GUI students will be promoted on-time to successive grade levels (PM#2)	92%	94%	Grade level promotion	End of 7th – 11th	Avg GUI 2.0 promotion rate prior 3 yrs.
	PM 3: % of GUI students who will place into college-level math without remediation (PSM#1)	19%	23%	Course enrollment	Start of 1st year PSE	Outcome from GUI 2.0
	PM 4: % of GUI students who will place into college-level English without remediation (PSM#2)	36%	38%	Course enrollment	Start of 1st year PSE	Outcome from GUI 2.0. Avg no remediation prior 3 years.
Increase the rate of high school graduation and enrollment in PSE	PM 5: % of GUI students who regularly attend school (PM#1)	90%	92%	Attendance	8th – 12th	21-22 average from GUI 2.0
	PM 6: % of GUI students who graduate from high school will increase 2 percentage points (GPRA#2)	87%	89%	High school graduation	End of 12th	Outcome from GUI 2.0
	PM 7: % of GUI students who are enrolled at an IHE (GPRA#4)	43%	45%	College enrollment	December of 1st year PSE	2020 State of Iowa FRPL enrollment rate
	PM 8: % of GUI students who enrolled at an IHE and persisted to the 2nd year at the initial or a subsequent IHE (PSM#5)	73%	75%	College persistence	December of 2nd year PSE	Outcome from GUI 2.0
Increase education expectations & student & family knowledge of PSE options, preparation, & financing	PM 9: % of GUI students who expect to enroll in a 2- or 4-year college after high school (PM#3)	58%	60%	Annual student survey	End of 12th	2021 intent for Iowa students who qualify for FRPL.
	PM 10: % of GUI students will complete the FAFSA by March of 12th grade (GPRA#3)	43%	45%	FAFSA completion	End of 12th	21-22 avg for GUI 2.0 schools
	PM 11: % of GUI students who are admitted to college enroll in the fall after high school graduation after participating in a summer melt (PSM#3)	79%	81%	College enrollment	Start of 1st year PSE	GUI 2.0 melt rate
	PM 12: % of GUI students utilize their full GUI scholarship from their 1st to 2nd year of college (PSM#4)	65%	67%	Scholarship utilization	1st and 2nd year PSE	Outcome from GUI 2.0 scholarship utilization

2020 Program Evaluation Report

GEAR UP Iowa 2.0

Results from 7th through 12th Grade

Executive Summary

The GEAR UP Iowa (GUI) 2.0 Evaluation Plan is a continuous evaluation plan that regularly evaluates student academic outcome across the seven years of the program. The 2020 Program Evaluation Report is the third in a series of four analyses that evaluates the impact of GEAR UP interventions as students in the program progress from middle school to high school and into their first postsecondary year. This study investigates the GUI 2.0 program impact upon academic performance, attendance, standardized test scores, rigorous course enrollment, high school graduation, intent to enroll in college, and Free Application for Federal Student Aid (FAFSA) completion. The report describes the results at the time the cohort had completed high school.

The GUI 2.0 program demonstrated positive impacts on students' grades, ACT completion, ACT test scores, intent to enroll in a postsecondary institution after high school, and FAFSA completion. Among students within GUI 2.0 who qualified for FRPL those who participated in more program services had higher grades compared to students who participated in little to not activities. The program also demonstrated a strong positive impact on the percentage of students who completed the ACT compared to students at non-GUI schools. In addition, GUI 2.0 students who completed both the ACT pre-test and engaged in some test preparation services experienced modest gains in English and Composite scores. The program also seems to have positively impacted intent to enroll in college after high school among those who did and did not qualify for FRPL. Higher percentages of GUI 2.0 students, compared to those from non-GUI schools, indicated intent to enroll in college after high school. COVID-19 does seem to have impacted the response rate to this annual survey suggesting some caution in this outcome. Finally, students in the GUI 2.0 program completed the FAFSA at rates comparable to students at non-GUI schools. This is a net positive outcome as students from GUI 2.0 districts tend to complete at a lower rate. Again, COVID-19 is likely impacting these results as GUI 2.0 students were tracking well ahead in FAFSA completion before the onset of the pandemic.

The remaining research questions demonstrated negative outcomes for GUI 2.0 students. Similar to the last biennial analysis, program participants who engaged in more services were less likely to complete rigorous academic coursework. Contrary to the previous analysis the program had a negative impact on attendance. Previously, GUI 2.0 students were attending at higher rates than matched students at non-GUI schools with even stronger outcomes for students who qualified for FRPL. The current analysis demonstrated lower attendance rates for all GUI 2.0 students. In addition, GUI 2.0 students graduated high school at lower rates than non-GUI students. While extremely difficult to quantify there is little doubt that GUI 2.0 program participants were disproportionally negatively impacted by the COVID-19 pandemic. Many indicators, FAFSA completion up until the onset of the pandemic as well as demonstrated positive outcomes from the previous analysis on attendance and test scores, strongly suggested the GUI 2.0 program was on track to meet or exceed outcome measures prior to COVID-19. Future research should attempt to discern the pandemic's potential negative impact on these outcomes and determine the extent to which years of effort have had some positive influence on participants' college and career readiness.

Measuring the effect of GEAR UP Iowa academics, attendance patterns, course selection, and progress towards graduation

Introduction

GEAR UP Iowa (GUI) 2.0 provided services to a cohort of Iowa students in twelve low-income school districts across the state with the goal of increasing student readiness for postsecondary education, both academically and behaviorally. Students in the GUI 2.0 cohort included all students who were enrolled in 7th grade in a GUI 2.0 middle school at any time during the 2014-15 academic year. Due to attrition and in order to accommodate district feeder patterns, any student who was in 9th grade in a GUI 2.0 high school during the 2016-17 academic year was added to the cohort. GUI 2.0 schools were selected based on those with more than 50% of students eligible for free or reduced priced lunches (FRPL). Table 1 outlines the number of GUI 2.0 students enrolled at GUI 2.0 schools by year since 7th grade and the total number of unique students over the course of the program.

Table 1. Number of GUI 2.0 students enrolled at GUI 2.0 schools

Year	Cohort Grade	Number of GUI 2.0 students
2014-15	7	6,535
2015-16	8	6,120
2016-17*	9	8,387
2017-18	10	7,814
2018-19	11	7,011
2019-20	12	6,334
Total All Years	7-12	9,100

*Students added to cohort

GUI 2.0 programming in partner schools delivered a range of services to students, including those required as part of the grant: mentoring, advising, tutoring, and exposure to information about postsecondary options and financial aid. Schools also provided a range of optional services including college visits, test preparation, exposure to careers and apprenticeships, FAFSA (Free Application for Federal Student Aid) completion, and student workshops. During 11th grade, students received ACT preparation services and nearly all schools provided the ACT during the school day. The 12th grade year focused on support for college applications, conversations about optimal fit schools, and substantial supports to help students and their families complete the FAFSA. The GUI 2.0 staff provided training and consultation services to the twelve partner school districts to support implementation of services. The program also provided services to parents, including information on postsecondary options and strategies to support their children.

In this study, we assessed the effect of these services on measures of academic and behavioral progress including grades, assessment scores, attendance, course enrollment, high school graduation, intent to enroll in college, and FAFSA completion. Following the GUI 2.0 Evaluation Plan, we examined the following research questions:

1. Does the GUI 2.0 program increase students' academic performance as measured by course grades?
2. Does the GUI 2.0 program increase students' academic performance as measured by the ACT?

3. Does the GUI 2.0 program increase students' school attendance?
4. Does the GUI 2.0 program increase students' preparation for postsecondary education as measured by the number of rigorous academic courses completed?
5. Does the GUI 2.0 program increase students' academic performance as measured by high school graduation?
6. Does the GUI 2.0 program increase students' postsecondary aspirations as measured by intent to enroll in postsecondary education following high school?
7. Does the GUI 2.0 program increase students' completion of the FAFSA?

Summary of Services

Across the 7th through 12th grades the GUI 2.0 program provided a total of 205,139 services to students (each student can receive multiple services). The most common types of services, by frequency, were advising, academic planning, and counseling (19.4%), mentoring (15.7%), social emotional or noncognitive classroom and small group activities (13.6%), support services (11%), and college visits (7.8%).

Students in the larger districts, on average, participated in fewer hours of services compared to smaller schools. When considering the largest districts, the average student in Des Moines received about 28 hours of service across 7th through 12th grade while students in Cedar Rapids had about 29 hours. Students in smaller districts averaged the following number of hours across the program; Denison - 127, Perry - 194, and Columbus - 208. At the end of 10th grade there were no differences in hours served based on qualifying for FRPL or being an English language learner (ELL). From 7th through 10th grade there were no differences in the average number of service hours based on FRPL or ELL status. With the addition of services in 11th and 12th grade students who qualified for FRPL received about 5 fewer hours of service (44.1) compared to students who did not qualify (49.7). In addition, ELL students received more services (53.7 hours) than non-ELL students (44.6 hours). The gap between students with an IEP (average 36.2 hours) and those not on an IEP (47.1 hours) widened from the four hour gap end of 10th grade. Female students received 1.5 more hours of services at the end of 10th grade with that gap widening to about 5.5 hours by the end of 12th grade. On average, Latinx students participated in quite a bit more services (60.2 hours) than other racial/ethnic groups Asian American (41.8 hours), White (41.2 hours), Black (37.2 hours), and multiracial (35.7 hours).

Analysis

To determine the association between participation in GUI 2.0 and academic performance or behavior we used one of two methods for analysis, depending on the data available.

Intent to Treat (ITT) Research Design

The following research questions (3, 5, 6, and 7) utilized an ITT research design, comparing all students in the GUI 2.0 program, whether they participated in GEAR UP services or not, to a matched sample of non-GUI students. We addressed each question twice, first with the entire GUI 2.0 population and then focusing on students eligible for FRPL.

3. Does the GUI 2.0 program increase students' school attendance?
5. Does the GUI 2.0 program increase students' academic performance as measured by high school graduation?
6. Does the GUI 2.0 program increase students' postsecondary aspirations as measured by intent to enroll in postsecondary education following high school?
7. Does the GUI 2.0 program increase students' completion of the FAFSA?

Through a data sharing agreement with the Iowa Department of Education (IDE), we obtained data from grades 6 through 12 data on GUI 2.0 students, as well as non-GUI students. The study population included any 9th grade student enrolled in an Iowa high school during the 2016-17 academic year at both GUI 2.0 and non-GUI schools. This data set included demographics, standardized test scores, attendance rates, high school graduation status, and college intention data. When applicable, this data was provided for each year of high school enrollment and for each high school attended. Demographics, test scores, and attendance rates from 6th grade were used for matching students on variables prior to the onset of GUI 2.0; therefore students missing 6th grade data were omitted from analysis. For Research Questions 3, 6 and 7 we limited our sample to include students who graduated from an Iowa high school during the 2019-20 academic year. Question 6, regarding postsecondary intentions, utilized a smaller sample due to data availability. Our approach for the effect of GUI 2.0 on high school graduation (question 5) differed because we determined graduation rates from the 9th grade cohort.

To control for observed demographic differences, a comparison cohort was compiled using propensity score matching based on student characteristics including gender, IEP status, ELL status, race or ethnicity (we use binary indicators of White and non-White due to the small minority populations in Iowa), FRPL status, At-Risk status, foster care status, 6th grade attendance rate, and 6th grade scores on the Iowa Assessments math and reading exams. A logistic regression was performed to determine the propensity scores for students in both the GUI 2.0 and non-GUI samples. We then matched each GUI 2.0 student to a non-GUI student based on the propensity score. We used a one-to-one matching technique, resulting in equal numbers of GUI 2.0 and comparison students included in the analysis. The matching was first performed for the full sample and then repeated with the FRPL sample. GEAR UP aims to decrease achievement gaps between low and high income students; therefore, we are interested in the impact on FRPL students individually.

Due to differing populations for each research question, we completed the match three times. Table 2 shows a summary of the population and sample sizes used to answer each research question, as well as any remaining statistical differences in observables between the matched GUI 2.0 and non-GUI samples. While statistically similar samples were found for the FRPL limited populations, we were unable to match the samples when considering both FRPL and non-FRPL students for all research questions. Therefore, we include all variables used in the match in the following regression analyses.

Table 2: Summary of Initial Populations and Matched Samples Used for Analysis

Research Question	All Students, Unmatched Population (N)	All Students, Matched Sample (N)	FRPL Students, Unmatched Population (N)	FRPL Students, Matched Sample (N)	Statistical Differences in Matched Sample (All)	Statistical Differences in Matched Sample (FRPL)
3 and 7	26,989	8,162	9,463	4,424	ELL Status	None
GUI 2.0	4,514	4,081	2,633	2,212		
Non-GUI	22,475	4,081	6,830	2,212		
5	29,614	10,412	11,500	6,122	6th grade attendance	None
GUI 2.0	5,851	5,206	3,720	3,061		
Non-GUI	23,763	5,206	7,780	3,061		
6	23,494	5,048	7,901	2,878	None	None
GUI 2.0	2,705	2,524	1,612	1,439		
Non-GUI	20,789	2,524	6,289	1,439		

Dosage of Services (DOS) Research Design

The comparison sample from IDE did not include grade and course enrollment data. Consequently, research questions 1 and 4 were analyzed through a within subjects research design that compared GUI 2.0 students to each other.

1. Does the GUI 2.0 program increase students' academic performance as measured by course grades?
4. Does the GUI 2.0 program increase students' preparation for postsecondary education as measured by the number of rigorous academic courses completed?

This research design does not eliminate the possibility that selection effects that are not accounted for in the analysis are impacting outcomes. We examined differences in academic outcomes based on the total number of hours of service in which students participated at GUI 2.0 schools. For questions 1 (grade point average) and 4 (enrollment in rigorous courses) we conducted a series of factorial analysis of variance (ANOVA) that examined differences in the outcome based on the number of hours of GUI 2.0 services and FRPL status. The ANOVA determines if there are statistically significant mean differences based on the treatment factor (hours) and existing group differences (FRPL) as well as any interaction among these factors. As with the ITT research design it was evident from our initial analysis that group differences existed based on FRPL status. Consequently we conducted analyses that compared students in these groups. Differences in educational outcomes based on socioeconomic status is common[1] and this line of inquiry is consistent with the mission of GEAR UP to support students from underserved groups.

[1] Reardon, S.F. (2011). The widening socioeconomic status achievement gap: New evidence and possible explanations. In S.F. Reardon & G.J. Duncan (Eds.), *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances.* New York: Russell Sage Foundation.

To examine the impact of service hour dosage on outcomes we divided the data into quartiles based on the number of hours of services for students. Quartiles were selected as they provide logical and easily understandable groupings for the amount of activities students completed during their time in the program. Students in the different groups were then examined with respect to grades and the number of rigorous courses completed by the end of 12th grade. Table 3 contains demographic information for students included in this analysis.

Table 3. GEAR UP Sample for DOS Analysis

	All GEAR UP N (%)	**FRPL GEAR UP N (%)**
Total	5297	3202
Female	2509 (47.4)	1541 (48.1)
White	2690 (50.8)	1133 (35.4)
FRPL	3202 (60.4)	
IEP	738 (13.9)	597 (18.6)
ELL	702 (13.3)	627 (19.6)

Results

1. Does the GUI 2.0 program increase students' academic performance as measured by course grades?

The impact of participating in more GUI 2.0 services on student grades was examined through a factorial analysis of variance (ANOVA). Based on observed differences due to qualification for FRPL this variable was included in the analysis. Table 4 describes the means and standard deviations of students' cumulative GPA through the first two quarters of their senior year for students that do and do not qualify for FRPL. Due to COVID-19 and all schools closing in mid-March 2020 inconsistent grade data was provided by schools and subsequently all third and fourth quarter grade information was excluded from the analysis. The data in the table are organized by quartiles as well as for students who qualify for FRPL and those that do not. The results of the factorial ANOVA are shown in Table 5 which demonstrates a significant difference for hours of service, FRPL qualification, and the interaction term. The effect of FRPL on GPA shows that students from higher socioeconomic backgrounds, not qualified for FRPL, have higher grades.

Next, we conducted a simple contrast of levels of service to examine the nature of the main effect for service on students' grades. Among all students the average GPA for the highest quartile (38+ hours, $\bar{x}$ = 2.70) to each of the other three quartiles (16-38 hours, $\bar{x}$ = 2.50; 6-16 hours, $\bar{x}$ = 2.28; 0-6 hours, $\bar{x}$ = 2.16). Students who participated in 38 or more hours of GUI 2.0 services had statistically significantly higher GPA than each of the other three groups. Finally, to understand the interaction of hours of service and FRPL we plotted the estimated marginal means for students based on hours of service and FRPL.

Examination of Figure 1 demonstrates the nature of this interaction with a clear difference between students who qualify for FRPL and those who do not.

Table 4. Means and Standard Deviations for GPA

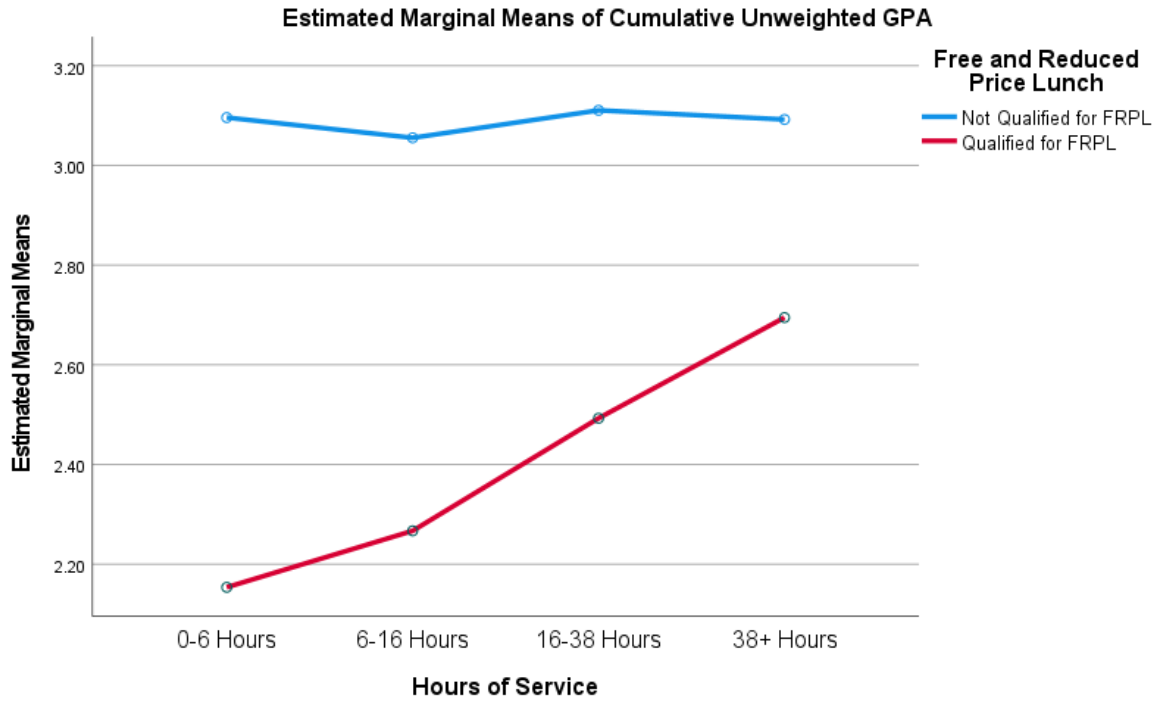
Hours of Service (Quartiles)	FRPL	Mean	Std. Deviation	N
0-6 Hours	Not Qualified for FRPL	3.0961	.98609	175
	Qualified for FRPL	2.1554	.88828	513
	Total	2.3947	1.00120	688
6-16 Hours	Not Qualified for FRPL	3.0567	.83478	352
	Qualified for FRPL	2.2701	.86145	822
	Total	2.5059	.92625	1174
16-38 Hours	Not Qualified for FRPL	3.1158	.74730	462
	Qualified for FRPL	2.5026	.93815	713
	Total	2.7437	.91808	1175
38+ Hours	Not Qualified for FRPL	3.1015	.73288	415
	Qualified for FRPL	2.6936	.84757	711
	Total	2.8439	.83054	1126
Total	Not Qualified for FRPL	3.0943	.79840	1404
	Qualified for FRPL	2.4180	.90571	2759
	Total	2.6461	.92776	4163

Table 5. Impact of GUI 2.0 Services and FRPL on GPA

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	538.855[a]	7	76.979	105.091	.000	.150
Intercept	25315.858	1	25315.858	34560.805	.000	.893
Quartiles	40.841	3	13.614	18.585	.000	.013
FRPL	395.443	1	395.443	539.853	.000	.115
Quartiles * FRPL	31.358	3	10.453	14.270	.000	.010
Error	3043.546	4155	.733			
Total	32730.530	4163				
Corrected Total	3582.401	4162				

a. R Squared = .150 (Adjusted R Squared = .149)

Figure 1. Interaction Between Hours of Service and FRPL Qualification



Similar to the analysis in the third biennial which examined outcomes through 10th grade, we found that participating in more hours of GUI 2.0 services had a positive effect on student grades. Again, these gains were stronger among students who qualify for FRPL, suggesting that these underserved students were particularly well served by the program. As noted above, selection effects cannot be completely discounted such that students who are more likely to benefit from these services may be overrepresented in the FRPL group.

2. Does the GUI 2.0 program increase students' academic performance as measured by the ACT?

At the conclusion of the GUI 2.0 cohort's 11th grade year we conducted a thorough evaluation of ACT participation and performance. GUI 2.0 emphasized ACT test preparation and district-wide testing to help students succeed on the college entrance exam. Here, we summarize our main results and include the full analysis in Appendix A.

- ACT District-Wide Testing. We used a difference-in-differences model to determine the impact GUI 2.0 had on ACT completion rates. Using ACT data from graduating classes between 2016 and 2020, we compared annual completion rates for GUI 2.0 and non-GUI schools. Data prior to the GUI 2.0 cohort allowed us to examine the pre-trends in ACT test taking behavior. We found that the effect of graduating from a GUI 2.0 high school in 2020 was an increase in ACT completion rates of 27 percentage points. When looking at the distribution of scores we saw that the peak shifted to lower scores for the graduating class of 2020; however, approximately 100

extra students earned an ACT cumulative score that made them eligible for Iowa Regent Universities in the 2020 class, over the average of the prior graduating classes.

- ACT Pre-Testing and Test Preparation. GUI 2.0 encouraged districts to administer the ACT pre-test to all students. Based on that pre-test, test areas in need of improvement could be targeted with tutoring and additional practice. We used a linear regression model to study the effect of taking the pre-test only, participating in test preparation only or taking the pre-test and following up with test preparation. While solely participating in test preparation had no significant effect on scores, having taken the pre-test improved students' scores by approximately half a point in English, Reading, Science and on the Composite score. Students who participated in both the pre-test and the test preparation services experienced an increase of 1.3 points on the English exam and 0.7 points on the Composite score.

3. Does the GUI 2.0 program increase students' school attendance?

This research question addresses changes in student behavior due to GUI 2.0 as measured by attendance patterns, using the ITT research design, comparing matched GUI 2.0 and non-GUI students . Table 6 shows the results of a linear regression model used to measure the effect of GUI 2.0 on the percentage of school days attended (i.e. students who attended 100% of school days did not miss a day during the year). COVID-19 caused many schools to close before the end of the 2019-20 school year; therefore the rate of attendance is calculated as the number of days present at school divided by the number of days that the school was open and the student was enrolled (less than the typical 180 days). On average, GUI 2.0 students were enrolled for 126.5 days while non-GUI students were enrolled for 127.6 days. Again the regression model included all covariates due to the lack of baseline equivalence. Our attendance data does not distinguish between excused and unexcused absences.

Table 6. Linear Regression Results for Attendance Percentage

	All Students	**FRPL Students**
GEAR UP	-3.327***	-4.555***
Female	-.728***	-.530
White	1.241***	1.678***
FRPL	-2.705***	-
IEP	.635	.867
ELL	1.551***	2.041***
At Risk	-.580*	-.884*
Foster Care	.132	-1.335
6th Reading Score	.014**	.022**
6th Math Score	.035***	.033***
6th Attendance	.694***	.737***
N	8162	4424
Adjusted R^2	**.150**	**.114**

*p<.05. **p<.01. ***p<.001

Results indicate that GUI 2.0 had a significant and negative effect on attendance patterns during the 2019-20 academic year, with GUI 2.0 students attending four fewer days than non-GUI students (accounting for the abbreviated school year). When limiting the analysis to students who were eligible for FRPL, we found that GUI 2.0 students attended more than five fewer days of school more than non-GUI FRPL students.

It is not clear the extent by which COVID-19 played a role in the drop in attendance for GUI 2.0 students. It is important to note that our analysis of the GUI 2.0 program through 10th grade demonstrated that the GUI 2.0 program had a positive impact on attendance for all students with a greater impact among those that qualified for FRPL, the opposite pattern found in this analysis. Evidence is emerging that the pandemic has had a greater impact on populations that were already at a disadvantage prior to the onset of the pandemic. Those populations include individuals from racial/ethnic minority groups, low income, and English learning students, typical of many GUI 2.0 students. Minority and low income families were more likely to experience job loss, illness due to COVID-19 and death of a family member due to COVID-19 (https://www2.ed.gov/about/offices/list/ocr/docs/20210608-impacts-of-covid19.pdf). Any of these COVID-19 related impacts may be contributing to the widening academic achievement gap.

4. ***Does the GUI 2.0 program increase students' preparation for postsecondary education as measured by the number of rigorous academic courses completed?***

Rigorous academic course completion includes successfully passing Advanced Placement (AP) or dual credit (college and high school credit) courses. Similar to question 1 above we conducted a factorial ANOVA to examine the impact of hours of service on rigorous course completion. The analysis included hours of services in quartiles as well as qualification for FRPL. The mean number of rigorous academic courses completed by hours of service and FRPL qualification are noted in Table 7. The results of the factorial ANOVA are shown in Table 8 which demonstrates a significant difference for hours of service, FRPL qualification, and the interaction term. The effect of FRPL on rigorous courses demonstrates that students from lower socioeconomic backgrounds complete fewer rigorous courses. Next, we conducted a simple contrast of levels of service to examine the nature of the main effect for service comparing the highest quartile (38+ hours) to each of the other three quartiles and found that as students participated in more GUI 2.0 services their completion of rigorous coursework declined. Figure 2 illustrates the nature of the interaction between services and FRPL, namely that coursework declines as students participate in more services.

Table 7. Means and Standard Deviations for Rigorous Academic Coursework

Hours of Service (Quartiles)	FRPL	Mean	Std. Deviation	N
0-6 Hours	Not Qualified for FRPL	8.83	6.272	144
	Qualified for FRPL	5.73	5.034	243
	Total	6.88	5.720	387
6-16 Hours	Not Qualified for FRPL	8.36	5.954	279

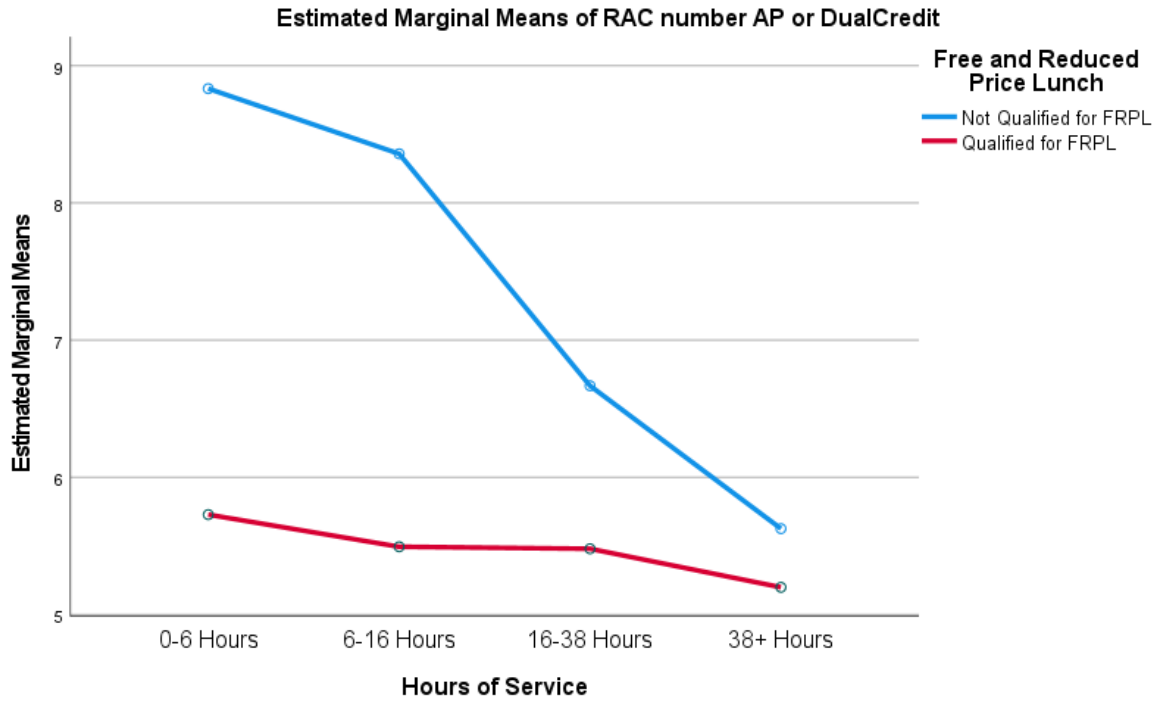
	Qualified for FRPL	5.49	5.022	431
	Total	6.62	5.582	710
16-38 Hours	Not Qualified for FRPL	6.67	5.446	385
	Qualified for FRPL	5.48	4.465	465
	Total	6.02	4.966	850
38+ Hours	Not Qualified for FRPL	5.63	4.238	396
	Qualified for FRPL	5.20	4.030	629
	Total	5.36	4.115	1025
Total	Not Qualified for FRPL	6.98	5.452	1204
	Qualified for FRPL	5.42	4.544	1768
	Total	6.05	4.990	2972

Table 8. Impact of GUI 2.0 Services and FRPL on Rigorous Academic Coursework

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3585.612[a]	7	512.230	21.568	.000	.048
Intercept	102240.137	1	102240.137	4304.890	.000	.592
Quartiles	1396.160	3	465.387	19.595	.000	.019
FRPL	2227.391	1	2227.391	93.786	.000	.031
Quartiles * FRPL	844.640	3	281.547	11.855	.000	.012
Error	70394.313	2964	23.750			
Total	182719.000	2972				
Corrected Total	73979.926	2971				

a. R Squared = . 048 (Adjusted R Squared = .046)

Figure 2. Interaction Between Hours of Service and FRPL Qualification



As with the analysis of the GUI 2.0 program through 10th grade we found that participating in more hours of GUI 2.0 services had a negative effect on the number of rigorous courses completed. While the goal of the GUI 2.0 program is to increase enrollment in rigorous courses and thus improve students' college readiness, the GUI 2.0 program demonstrated the opposite with respect to this outcome. As noted in the previous analysis it is plausible that rather than actively discouraging rigorous course enrollment this outcome is due to students who are viewed as more in need (lower course grades, more absenteeism) are receiving more services and these students are less likely to be encouraged to take AP or dual credit classes. Future GEAR UP Iowa programming should carefully review advising procedures to ensure students who historically haven't been steered toward these rigorous classes are encouraged and supported to embark on these routes.

5. *Does the GUI 2.0 program increase students' academic performance as measured by high school graduation?*

Iowa has historically high graduation rates; however, students from lower socioeconomic homes and individuals from underrepresented racial and ethnic groups are less likely to complete high school with a diploma. GUI 2.0 aimed to decrease the gaps between these populations by providing enhanced tutoring options and services like check and connect. We measured graduation rates from the 9th grade cohort of students. Our final population used for analysis omitted any students who transferred out of state, were deceased or left school due to serious illness prior to the end of 12th grade. Table 9 shows the results of our logistic regression analysis, modeling high school graduation.

Table 9. Logistic Regression Results for High School Graduation

	All Students	FRPL Students
GEAR UP	-.626***	-.513***
Female	.353***	.370***
White	-.055	-.142
FRPL	-.998***	-
IEP	-.264**	.-112
ELL	.302*	.246
At Risk	.046	.080
Foster Care	-.451	.049
6th Reading Score	.004**	.004*
6th Math Score	.019***	.018***
6th Attendance	.098***	.100***
N	10,412	6,122
Average Marginal Effect	**-.058*** **	**-.067*** **

*p<.05. **p<.01. ***p<.001

GUI 2.0 was negatively associated with high school completion. The average marginal effect of GUI 2.0 on graduation was a decrease of 5.8 and 6.7 percentage points compared to non-GUI students when considering the full sample and FRPL sample, respectively. Again, the effect of COVID-19 on the GUI 2.0 population was likely a substantial factor in this outcome. Future research will be critical to more fully understand the tremendously negative impact of the pandemic on students like those served by the GUI 2.0 program.

6. Does the GUI 2.0 program increase students' postsecondary aspirations as measured by intent to enroll in postsecondary education following high school?

This research question addresses changes in GUI 2.0 student attitudes towards college. GUI 2.0 focused on creating a college-going culture in high schools by including events like the College Application Campaign and College Decision Day. We surveyed GUI 2.0 students annually and results showed that their college intentions remained high through 12th grade. Here we use college intention data for all students in our matched sample obtained from an end of the year survey administered by IDE. We identified students who indicated *Community College, Four Year Private College, Four Year Public College* or *Other Post Secondary* as college intending. Those who answered *Active Military, Employment, Homemaker* or *Unknown* were coded as not college intending. Due to COVID-19, this survey was optional in 2019-20. Approximately 8 percent of non-GUI students did not take the survey, compared to 40 percent of GUI 2.0 students; therefore, greater caution is warranted drawing conclusions from this analysis of college intent.

Keeping in mind the data limitations, we created matched samples for those students who did complete the end of 12th grade IDE survey and provide intentions. Results from a logistic regression model of college intent are provided in Table 10. Of the student who completed the optional survey, 77.1 percent of GUI 2.0 students and 74.7 percent of non-GUI students reported that they planned to continue with some form of postsecondary education. When considering only FRPL students, 71.4 percent of GUI 2.0

students indicated an intent to attend postsecondary education, compared to 68.1 percent of non-GUI students.

Table 10. Logistic Regression Results for College Intentions

	All Students	**FRPL Students**
GEAR UP	.152*	.198*
Female	.933***	.838***
White	-.198*	-.223*
FRPL	-.516***	-
IEP	-.286**	-.228
ELL	.249*	.268*
At Risk	-.245**	-.201*
Foster Care	-.777	-.733
6th Reading Score	.006***	.008***
6th Math Score	.013***	.007**
6th Attendance	.067***	.052***
N	5,048	2,878
Average Marginal Effect	**.024***	**.038***

*p<.05. **p<.01. ***p<.001 s

7. Does the GUI 2.0 program increase students' completion of the FAFSA?

GUI 2.0 prioritized FAFSA completion during 12th year programming. When schools closed due to COVID-19 GUI 2.0 staff quickly shifted strategy to provide virtual FAFSA assistance, both one-on-one and in FAFSA informational seminars. Table 11 shows the results of a logistic regression analysis using the matched populations and FAFSA completion as the dependent variable.

Table 11. Logistic Regression Results for FAFSA Completion

	All Students	**FRPL Students**
GEAR UP	.018	-.088
Female	.701***	.808***
White	-.132*	-.215**
FRPL	-.572***	-
IEP	-.307***	-.255**
ELL	-.176	-.199
At Risk	-.072	-.065
Foster Care	-.010	.344
6th Reading Score	.007***	.006***
6th Math Score	.013***	.016***
6th Attendance	.054***	.046***
N	8162	4424

*p<.05. **p<.01. ***p<.001

There were no significant differences between FAFSA filing for GUI 2.0 and non-GUI matched samples. While students at GUI 2.0 schools outpaced those at non-GUI schools early in the FAFSA cycle, that gain disappeared with time. Though GUI 2.0 did not lead to a gain in FAFSA completion, the fact that there is no significant difference may be seen as a positive. Students at GUI 2.0 schools historically complete the FAFSA at lower rates than those at non-GUI schools. Therefore, the fact that GUI 2.0 status was not significant may be promising and given the strong pace of FAFSA completion prior to the onset of COVID-19 it is more likely than not that the program would have demonstrated a strong, positive impact on this key metric.

Conclusion

This third of four systematic program evaluation studies of the GUI 2.0 program demonstrated mixed results for the program on students' academic and behavioral outcomes. Examination of ACT completion and scores found a huge increase in the percentage of GUI 2.0 students who took the ACT with moderate impacts on scores among students who took the pre-ACT and participated in interventions to increase their scores. As with the previous evaluation, students who qualified for FRPL and participated in more services demonstrated higher grades while at the same time enrolled in fewer rigorous academic courses. GUI 2.0 students did indicate stronger intentions to enroll in postsecondary education at the end of high school compared to students from non-GUI schools, another positive program outcome. Prior to the onset of the COVID-19 pandemic GUI 2.0 students were completing the FAFSA at rates well above historical averages. Unfortunately COVID-19 seems to have impacted GUI 2.0 students and schools particularly hard and by the end of the year these gains evaporated as GUI 2.0 students completed the FAFSA at rates similar to students at non-GUI schools. Thus, the program seems to have closed this particular gap while not exceeding expectations as was hoped in the middle of the year.

Several other surprising and disappointing outcomes were found in the analysis. Contrary to the last evaluation finding, attendance among GUI 2.0 students, both those who do and don't qualify for FRPL, was lower than comparable non-GUI students. In addition, GUI 2.0 students graduated high school at lower rates than matched non-GUI students. As noted above, it is highly likely that COVID-19 dramatically impacted the critical program outcomes at the conclusion of the GUI 2.0 cohorts senior year. Previous evaluation outcomes as well as trendlines like FAFSA completion, strongly suggested the GUI 2.0 program was on track to meet or exceed many of the anticipated academic and behavioral outcomes. Future research may be able to better understand the tremendous negative impact of the COVID-19 pandemic on these students' academic and subsequent career outcomes.

Appendix A: Propensity Score Matching Results

Here we provide results from each of the three propensity score matches, using different initial populations based on cohort and data availability. We use three different populations in order to maintain large sample sizes.

Research Questions 3 and 7

When analyzing attendance rates and FAFSA completion, we included all students from the 9th grade cohort who graduated from high school in 2019-20. The population of 26,989 had complete 6th grade demographic and academic data used for matching, as well as complete attendance and FAFSA data. Tables A1 and A2 show the population prior to matching and the matched sample, respectively.

Table A1. Original Population – Questions 3 and 7

	All Students			FRPL Students		
	GUI N (%)	**Non-GUI N (%)**	**p-value**	**GUI N (%)**	**Non-GUI N (%)**	**p-value**
Total	4,514	22,475		2,633	6,830	
Female	2,268 (50.2)	10,981 (48.9)	.111	1,341 (50.9)	3,390 (49.6)	.257
White	2,568 (56.9)	19,789 (88.1)	<.001	1,058 (40.2)	5,273 (77.2)	<.001
FRPL	2,633 (58.3)	6,830 (30.4)	<.001	-	-	
IEP	562 (12.5)	2,380 (10.6)	<.001	429 (16.3)	1,216 (17.8)	.084
ELL	518 (11.5)	377 (1.7)	<.001	463 (17.6)	300 (4.4)	<.001
At Risk	1,619 (35.9)	3,600 (16.0)	<.001	1,253 (47.6)	2,009 (29.4)	<.001
Foster Care	12 (0.3)	40 (0.2)	.187	10 (0.4)	34 (0.5)	.525
6th Reading Mean ± std. dev.	232.4 ± 35.6	243.3 ± 35.4	<.001	222.9 ± 33.1	229.9 ± 33.7	<.001
6th Math Mean ± std. dev.	230.2 ± 28.9	240.7 ± 29.0	<.001	222.2 ± 26.2	228.2 ± 26.4	<.001
6th Attendance Mean ± std. dev.	96.9 ± 3.4	96.6 ± 3.1	<.001	96.6 ± 3.5	95.9 ± 3.8	<.001

Table A2. GEAR UP and Comparison Sample After Matching – Questions 3 and 7

	All Students			FRPL Students		
	GUI N (%)	**Non-GUI N (%)**	**p-value**	**GUI N (%)**	**Non-GUI N (%)**	**p-value**
Total	4,081	4,081		2,212	2,212	
Female	2,041 (50.0)	2,023 (49.6)	.718	1,114 (50.4)	1,110 (50.2)	.894
White	2,568 (62.9)	2,568 (62.9)	1.00	1,058 (47.8)	1,054 (47.7)	.947
FRPL	2,207 (54.1)	2,180 (53.4)	.526	-	-	
IEP	507 (12.4)	474 (11.6)	.266	375 (17.0)	359 (16.2)	.475
ELL	257 (6.3)	304 (7.5)	.033	227 (10.3)	239 (10.8)	.588
At Risk	1,200 (29.4)	1,173 (28.7)	.486	832 (37.6)	812 (36.7)	.536
Foster Care	11 (0.3)	15 (0.4)	.444	9 (0.4)	12 (0.5)	.619

6th Reading Mean ± std. dev.	234.8 ± 35.4	234.6 ± 34.7	.797	225.3 ± 33.3	224.7 ± 32.8	.546
6th Math Mean ± std. dev.	232.2 ± 28.9	232.9 ± 28.5	.271	224.4 ± 26.5	223.6 ± 25.6	.307
6th Attendance Mean ± std. dev.	96.8 ± 3.4	96.8 3.1	1.00	96.3 ± 3.7	96.2 ± 3.5	.356

Research Question 5

When analyzing high school graduation, we included all students from the 9th grade cohort who did not exit high school due to transfers out of state, death or serious illness. The population of 29,614 had complete 6th grade demographic and academic data used for matching, as well as complete attendance and FAFSA data. Tables A5 and A6 show the population prior to matching and the matched sample, respectively.

Table A3. Original Population – Question 5

	All Students			FRPL Students		
	GUI N (%)	**Non-GUI N (%)**	**p-value**	**GUI N (%)**	**Non-GUI N (%)**	**p-value**
Total	5,851	23,763		3,720	7,780	
Female	2,871 (49.1)	11,490 (48.4)	.337	1,823 (49.0)	3,784 (48.6)	.688
White	3,271 (55.9)	20,787 (87.5)	<.001	1,570 (42.2)	5,972 (76.8)	<.001
FRPL	3,720 (63.6)	7,780 (32.7)	<.001	-	-	-
IEP	934 (16.0)	2,825 (11.9)	<.001	725 (19.5)	1,524 (19.6)	.899
ELL	696 (11.9)	421 (1.8)	<.001	626 (16.8)	339 (4.4)	<.001
At Risk	2,212 (37.8)	4,025 (16.9)	<.001	1,775 (47.7)	2,348 (30.2)	<.001
Foster Care	27 (0.5)	46 (0.2)	<.001	23 (0.6)	39 (0.5)	.491
6th Reading Mean ± std. dev.	227.7 ± 35.8	241.7 ± 35.8	<.001	219.0 ± 32.8	227.9 ± 33.8	<.001
6th Math Mean ± std. dev.	225.9 ± 29.1	239.3 ± 29.4	<.001	218.5 ± 26.1	226.5 ± 26.5	<.001
6th Attendance Mean ± std. dev.	96.3 ± 4.0	96.5 ± 3.3	<.001	95.8 ± 4.3	95.6 ± 4.0	.014

Table A4. GEAR UP and Comparison Sample After Matching – Question 5

	All Students			FRPL Students		
	GUI N (%)	**Non-GUI N (%)**	**p-value**	**GUI N (%)**	**Non-GUI N (%)**	**p-value**
Total	5,206	5,206		3,061	3,061	
Female	2,540 (48.8)	2,547 (48.9)	.919	1,490 (48.7)	1,486 (48.6)	.938
White	3,271 (62.8)	3,265 (62.7)	.916	1,570 (51.3)	1,567 (51.2)	.938
FRPL	3,082 (59.2)	3,038 (58.4)	.407	-	-	-
IEP	827 (15.9)	778 (14.9)	.158	602 (19.7)	610 (19.9)	.844

ELL	312 (6.0)	363 (7.0)	.526	264 (8.6)	300 (9.8)	.104
At Risk	1,609 (30.9)	1,577 (30.3)	.507	1,150 (37.6)	1,109 (36.2)	.256
Foster Care	24 (0.5)	18 (0.4)	.446	20 (0.7)	19 (0.6)	.626
6th Reading Mean ± std. dev.	230.5 ± 35.7	230.7 ± 35.0	.773	222.1 ± 33.2	222.5 ± 32.7	.635
6th Math Mean ± std. dev.	228.4 ± 29.1	229.0 ± 28.3	.286	221.4 ± 26.4	221.0 ± 25.5	.547
6th Attendance Mean ± std. dev.	96.2 ± 4.1	96.4 ± 3.6	.008	95.7 ± 4.4	95.6 ± 4.2	.363

Research Question 6

When analyzing college intention data, we included all students from the 9th grade cohort who graduated from high school in 2019-20 and completed the IDE end of year survey. The population of 23,494 had complete 6th grade demographic and academic data used for matching, as well as complete attendance and FAFSA data. Tables A3 and A4 show the population prior to matching and the matched sample, respectively.

Table A5. Original Population – Question 6

	All Students			FRPL Students		
	GUI N (%)	**Non-GUI N (%)**	**p-value**	**GUI N (%)**	**Non-GUI N (%)**	**p-value**
Total	2,705	20,789		1,612	6,289	
Female	1,433 (53.0)	10,195 (49.0)	<.001	864 (53.6)	3,129 (49.8)	.007
White	1,491 (55.1)	18,375 (88.4)	<.001	637 (39.5)	4,914 (78.1)	<.001
FRPL	1,612 (59.6)	6,289 (30.3)	<.001	-	-	-
IEP	301 (11.1)	2,185 (10.5)	.340	234 (14.5)	1,103 (17.5)	.004
ELL	359 (13.3)	343 (1.7)	<.001	319 (19.8)	273 (4.3)	<.001
At Risk	1,003 (37.1)	3,339 (16.1)	<.001	729 (45.2)	1,854 (29.5)	<.001
Foster Care	***	***	***	***	***	***
6th Reading Mean ± std. dev.	233.7 ± 35.1	243.5 ± 35.3	<.001	225.3 ± 33.2	230.1 ± 33.6	<.001
6th Math Mean ± std. dev.	230.6 ± 28.3	240.9 ± 29.0	<.001	223.8 ± 26.3	228.5 ± 26.3	<.001
6th Attendance Mean ± std. dev.	97.1 ± 3.4	96.6 ± 3.1	<.001	96.9 ± 3.5	95.9 ± 3.8	<.001

*** Data suppressed due to small numbers

Table A6. GEAR UP and Comparison Sample After Matching – Question 6

	All Students			FRPL Students		
	GUI N (%)	**Non-GUI N (%)**	**p-value**	**GUI N (%)**	**Non-GUI N (%)**	**p-value**
Total	2,524	2,524		1,439	1,439	

Female	1,316 (52.1)	1,293 (51.2)	.522	740 (51.4)	755 (52.5)	.555
White	1,491 (59.1)	1,484 (58.8)	.829	637 (44.3)	637 (44.3)	1.000
FRPL	1,435 (56.9)	1,421 (56.3)	.667	-	-	-
IEP	281 (11.1)	267 (10.6)	.568	218 (15.2)	227 (15.8)	.657
ELL	227 (9.0)	261 (10.3)	.118	192 (13.3)	213 (14.8)	.247
At Risk	822 (32.6)	804 (31.9)	.595	556 (38.6)	531 (36.9)	.347
Foster Care	***	***	***	***	***	***
6th Reading Mean ± std. dev.	235.2 ± 35.0	235.0 ± 35.7	.841	226.5 ± 33.4	226.6 ± 33.4	.936
6th Math Mean ± std. dev.	231.9 ± 28.3	232.0 ± 28.2	.900	224.8 ± 26.7	225.9 ± 25.7	.260
6th Attendance Mean ± std. dev.	97.0 ± 3.5	96.9 ± 2.9	.269	96.7 ± 3.6	96.6 ± 3.3	.437

Appendix B: ACT Study

GEAR UP Iowa: ACT Initiatives and Outcomes

1. Why take the ACT?

The ACT exam is a critical step for students interested in attending four-year colleges and universities. Not only are test scores often required for admission, but when a student indicates interest in an institution by having ACT scores sent there, the institution can then reach out to that student with information and admission support. Early contact and relationships with the college may help motivate a student to attend and aid them in navigating the steps required to successfully enroll. Community college students may also benefit from taking the ACT which can fill the requirement of a placement test. In addition, knowing their ACT score may help a student realize that they are qualified for a more selective college or university (Hoxby & Avery, 2012). Students who do not take entrance exams often underestimate their potential (Goodman, 2016).

Access to the ACT exam is frequently limited for low income students who may not have information regarding and assistance requesting fee waivers or may not be able to attend an exam administered on the weekend. Therefore, some states have implemented state-wide ACT testing, making the exam free for students and available to take during the school day. Both increasing the accessibility to test sites and compelling students to take entrance exams through state-wide mandatory testing are associated with positive trends in postsecondary enrollment, persistence and completion (Bulman, 2015).

States that have implemented mandatory state-wide testing increased the percentage of students who enroll in college. In Maine, mandatory ACT testing increased postsecondary enrollment by 2 to 3 percentage points (Hurwitz et al. 2015). Hyman (2017) found an increase of 0.6 percentage points in college enrollment with the adoption of mandatory state-wide testing in Michigan and that increase doubled for the lowest income students. A study of mandatory testing in Colorado, Illinois and Maine revealed that state-wide testing changes postsecondary choices with some evidence showing a decrease in two-year enrollments and an increase in enrollment at four-year institutions (Klasik, 2013). Goodman (2016) showed that 10 percent of students who would not take the ACT unless mandated end up enrolling in a more selective institution than they would have chosen without exam scores.

Given the benefits of taking the ACT exam at the state and individual levels, preparing students to take and succeed on the ACT is crucial. Students who reported feeling underprepared for their second ACT exam scored lower than students who felt prepared, regardless of the type of test preparation they received (Moore et al., 2019). While the research on test preparation services is mixed, the *What Works Clearinghouse* shows test tutoring and coaching as having a positive and significant effect on test scores. Intervention models which include a practice test followed by test-preparation services resulted in positive increases in the final ACT exam score (Filizola, 2008; McMann, 1994).

2. GEAR UP Iowa ACT Services

GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs) is a federal grant program that awards funding to states with the goal of increasing postsecondary attainment rates for low-income students. The program serves a cohort of students in 7th grade and follows them through their first year of college following high school graduation. Students receive services such as tutoring, college and career mentoring, trips to college campuses and in some programs, a college scholarship.

Iowa College Aid (ICA) is currently administering its second GEAR UP grant (GUI 2.0). We were awarded $11 million over the course of the grant to pay for services and staff placed in the schools. GUI 2.0 partnered with twelve school districts, each with greater than 50 percent of students eligible for free or reduced priced lunches. GUI 2.0 began with 6,535 7th graders in 2014-15 but added 2,583 students during 9th grade due to attrition. The cohort of students graduated from high school in the spring of 2020.

GUI 2.0 chose to focus on ACT test preparation and administration during the students' 11th grade year. To do this, we contracted with Cambridge Educational Services (CES) to administer a practice ACT exam and provide training and materials to schools so teachers and counselors could offer in-class lessons related to the ACT. We also required all GUI 2.0 partners to provide district wide ACT testing.

2.1 ACT Pre-Test

Administration of the ACT practice test differed by GUI 2.0 district. Schools identified four-hour periods of time for students to take the test, with some offering it on multiple days. Tests were then sent to CES for scoring. While some districts chose to give the test to all students, others selected students to take the exam or allowed students to self-select into taking it. Typically the larger school districts had lower levels of participation. Pre-test data was valuable for identifying deficits in student knowledge and providing targeted services to address those deficits.

2.2 ACT Test Preparation

Test preparation services were developed by CES but designed to be provided to the students through school district teachers and other staff. CES held training sessions for school personnel on how to use the materials they provided. Training included information on how to interpret results from the practice ACT exam. The practice exam was a crucial component of the test preparation model as it identified where students were lacking in knowledge needed to spend additional time studying. Test preparation services were then designed to target those deficits with additional curriculum and test taking practice. GUI 2.0 students also received general test taking tips through preparation services.

Test preparation was delivered in several formats. Here we provide a brief summary of services by district.

Cedar Rapids: ACT test preparation varied by school. George Washington High School provided services in the evenings and weekends in two-hour blocks. John F Kennedy High School made CES textbooks available to students and offered in-person tutoring and coaching on the weekends in two-hour blocks. Thomas Jefferson High School provided services separately for ESL students and allowed all students to seek assistance during lunch or free periods. At Metro High School, GUI 2.0 coaches worked one-on-one with students who opted in to test preparation. Teachers presented test taking information in slides to all students.

Clinton: GUI 2.0 students at Clinton High School participated in 90 minutes of test preparation each week starting in February and ending in late March.

Columbus Junction: Teachers administered test preparation curriculum during homeroom classes for 20 minutes at least once a week for six weeks.

Davenport: Davenport schools implemented test preparation services differently in each school. Central High School students could opt into preparation sessions based on the results from their pre-ACT exam,

led by teachers who taught the subject in need of additional practice. North High School provided materials to students who participated in small group study sessions during home room periods. West High School provided test preparation services on weekends and during free periods, focused on test subject material.

Denison: School-wide test preparation services were administered during second semester student seminars.

Des Moines: At East High School, GUI 2.0 coaches and school teachers met with students during homeroom periods to go over specific skills identified as in need on the pre-test. Hoover and Lincoln high schools targeted students who took the pre-test with five ACT test preparation sessions during homeroom times, one for each subject test and one covering test taking advice. North High School planned for up to 30 hours for CES test preparation curriculum, taught by high school teachers. Roosevelt High School offered one full day of ACT test preparation curriculum, with follow up sessions offered for four days during student seminars leading up to the final ACT exam.

Fort Dodge: Two four-hour workshops were held on weekends in November. The first focused on reading and science, the second on English and writing.

Marshalltown: No in-person ACT test preparation services provided.

Ottumwa: Three test preparation events were held, each for four hours.

Perry: No in-person ACT test preparation services provided.

Sioux City: While Sioux City has three high schools, East, North and West, all schools used the same implementation strategy for administering CES curriculum. ACT test preparation services were offered twice a week in November and December for one to two hours a session.

Storm Lake: One test preparation session was held in March. The session was four hours long and covered material from all four ACT test sections.

2.3 ACT District Wide Testing

GUI 2.0 worked with partner districts to implement district wide testing for the GUI 2.0 cohort. District-wide testing was new to nine of the twelve districts. Two, Des Moines and Columbus Junction, previously provided district wide testing. Denison did not offer district wide testing but chose to give all students vouchers to pay for the ACT on their own time. GUI 2.0 staff worked with ACT and a district coordinator to register all students for the ACT to be administered in either early or late spring, including working with students who needed accommodations. The test was administered during the school day and was free for all students.

3. Data and Methodology

In order to summarize ACT activities completed by the GUI 2.0 cohort, we looked at participation rates by district and demographics (Section 4). We then explored the outcomes on the official ACT exam based on whether or not students took the pre-test, participated in in-person test preparation through Cambridge or both (Section 5.1). Finally, we looked at the overall ACT completion rates and the effect of district-wide testing (Section 5.2).

3.1 Data

The data used in this analysis comes from several sources.

3.1.1 GUI 2.0 School Districts

To be a GUI 2.0 partner school district, we required data be submitted to ICA three times a year. In each data submission we requested current enrollment information, including demographic data and entry and exit dates (if applicable). At the end of each semester we collected data on school attendance, course enrollment and final grade and standardized test scores. These data were linked by each student's state ID number.

Each district was also required to identify a person in the school to report on student participation in GUI 2.0 services. In some schools this person was hired specifically for GUI 2.0, in others a current employee (typically a counselor) was responsible for implementing the program. ICA contracted with SCRIBE, a data management system, that allowed contacts in the school to enter data regarding services, including the name, general category of service, date and time spent in that activity for each student. We use this service data to identify ACT test preparation services received by GUI 2.0 students.

3.1.2 Iowa Department of Education (IDE)

We received data from the Iowa Department of Education on GUI 2.0 students annually. These data included enrollment, demographic, attendance, and standardized test information. We used this dataset to verify and fill in any missing data received from the school, matched by the state ID number. This data has a one-year delay, prompting us to go directly to the schools for initial data that could be used to inform our decisions in an actionable time period.

IDE also shares data on high school seniors in Iowa with ICA. After each senior class has graduated, ICA receives a certified enrollment file of senior enrollment by school, including demographic variables; however, this file lacks identification of whether or not a student graduated. ICA has received senior enrollment files starting with the graduating class of 2016.

3.1.3 ACT

Scores on the final exam came from ACT. We matched ACT data to IDE and school data by creating a unique identifier from first name, last name and date or birth. We used a phonetic matching algorithm available in SAS in order to account for slight differences in name spellings.

3.1.4 Cambridge Educational Services

CES provided practice test scores to ICA. After each practice test was administered, tests were returned to Cambridge for processing. A detailed report was provided to the schools and ICA outlining overall scores as well as exam sections each student underperformed on, allowing for targeted tutoring. CES also provided aggregate data on online test preparation usage by school but could not link each online account to an individual student.

3.2 Methodology

In the following we look at the demographics of those who participated in GUI 2.0 ACT services and the effect of those services on ACT scores and ACT completion rates. Section 4 outlines demographics using the datasets discussed in Section 3.1.

In Section 5.1 we use a linear regression model to determine the effects of having participated in GUI 2.0 ACT services. The sample for this analysis included only GUI 2.0 students who completed the final ACT exam. The outcome variable in these models are scores on the ACT exam, including English, math, science, reading and composite test sections. We include demographic control variables including free or reduced price lunch status (FRPL), individualized education plan status (IEP), English learner status (ESL), gender and race or ethnicity. We also controlled for academic aptitude prior to the implementation of ACT services using scores on the Iowa Assessment reading and math sections, taken during 10th grade. The high school each student attended in 10th grade was included in the regression as a fixed effect. Finally, the regression included three binary variables of interest indicating whether or not a student took the practice test, whether or not they received any in-person GUI 2.0 test preparation service and a dummy variable interacting practice test and test preparation participation.

In Section 5.2 we analyze the effect of GUI 2.0 ACT services on ACT completion rates. We use 2016 through 2020 senior class rosters provided to ICA by IDE and match students to ACT records on first name, last name, and date or birth. To account for minor variations in name spelling, we use a phonetic matching algorithm available in SAS. Using a logistic regression model, with whether or not a student completed the ACT exam as the binary outcome variable, we estimate the effect of having been enrolled in a GUI 2.0 school district in the graduating class of 2020, the year the GUI 2.0 cohort graduated. We constructed three models. The first includes only the predictors of interest, GUI 2.0 district status, 2020 graduating class status and a dummy variable interacting the two. In the second model, we include graduation year as a linear predictor. Finally, in the third model, we included the same demographic control variables as Section 5.1. For each model the average marginal effect of having graduated from a GUI 2.0 district in 2020 was calculated using the STATA package '*margins'*.

4. GUI 2.0 ACT Service Participation

In this section we explore the level of engagement for each of our three ACT initiatives (practice testing, test preparation and ACT completion). Table 1 breaks down participation rates by GUI 2.0 district. Of GUI 2.0 students enrolled in a partner school during 11th grade, we found that 41 percent took the ACT practice test offered through CES.

Approximately 15 percent of students participated in some in person test preparation. CES provided test preparation products that could be delivered in person or online. Unfortunately we had no way to identify which students participated in the online test preparation but we do know that approximately 300 students used the online system for 2 hours on average. Two schools had no in-person test preparation, Marshalltown and Perry; however they did have online participation. In Marshalltown, 74 students used the online tool for approximately 2 hours, on average. In Perry, 12 students logged on for an average of 8 hours each.

Finally, through district wide testing and fee waivers, 70 percent of GUI 2.0 students completed the ACT exam. This rate greatly exceeded our goal of 58 percent, set as a 10 percentage point increase over baseline ACT data from previous years which showed that 48 percent of students in GUI 2.0 districts typically take the ACT.

Table 1 : Participation in ACT Services by District

	Completed ACT Practice Test	ACT In Person Test Prep Participation	Average Hours	Completed ACT Exam	GUI 2.0 Population
All GEAR UP	2,841 (41%)	1068 (15%)	6.8	4,881 (70%)	7,008
Cedar Rapids	314 (27%)	143 (12%)	2.0	829 (71%)	1,175
Clinton	74 (36%)	78 (38%)	8.0	97 (47%)	206
Columbus	40 (83%)	45 (94%)	1.4	39 (81%)	48
Davenport	464 (54%)	118 (14%)	1.2	552 (65%)	854
Denison	183 (90%)	152 (75%)	14.1	148 (73%)	204
Des Moines	296 (13%)	353 (16%)	8.9	1,706 (75%)	2,278
Fort Dodge	184 (67%)	22 (8%)	4.5	191 (70%)	274
Marshalltown	137 (37%)	0 (0%)	0	160 (43%)	371
Ottumwa	145 (49%)	22 (7%)	4.5	230 (78%)	296
Perry	157 (95%)	0 (0%)	0	142 (86%)	166
Sioux City	714 (72%)	130 (13%)	5.1	663 (67%)	990
Storm Lake	133 (91%)	<10	4.0	124 (85%)	146

When looking at ACT service participation by demographics (Table 2) we see large discrepancies. Overall, females were more likely to participate in CES services and took the ACT at higher rates.

When looking at race or ethnicity, Black or African American and Native American or Pacific Islander (categorized as "Other" due to small numbers) students were least likely to participate in any ACT related services. Interestingly, Latinx students participated in practice testing and test preparation services at rates near to white students but lagged behind in completing the ACT.

Students with positive FRPL, IEP or ESL statuses all participated in services and completed the ACT at lower rates than those without.

Table 2 : Participation in ACT Services by Demographics

	Completed ACT Practice Test	ACT In-Person Test Prep Participation	Average Hours	Completed ACT Exam	N
All GEAR UP	2,841 (41%)	1,068 (15%)	6.8	4,881 (70%)	7,008
Gender					
Female	1,481 (44%)	613 (18%)	6.6	2,476 (74%)	3,356
Male	1,360 (37%)	455 (12%)	6.2	2,405 (66%)	3,652
Race/Ethnicity					
Asian	147 (41%)	80 (23%)	7.7	308 (87%)	355
Black or African American	244 (25%)	122 (13%)	6.2	586 (61%)	968
Latinx	813 (46%)	274 (15%)	6.3	1,184 (66%)	1,781
Multiple	120 (33%)	50 (14%)	4.7	231 (64%)	359
White	1,497 (43%)	537 (15%)	5.5	2,540 (73%)	3,471
Other	20 (27%)	<10	-	32 (43%)	74
FRPL					

Yes	1,735 (34%)	693 (14%)	7.6	3,249 (65%)	5,038
No	1,106 (56%)	375 (19%)	5.4	1,632 (83%)	1,970
IEP					
Yes	226 (24%)	58 (6%)	5.9	421 (44%)	960
No	2,615 (43%)	1,010 (17%)	6.9	4,460 (74%)	6,048
ESL					
Yes	289 (31%)	140 (15%)	1.9	562 (59%)	946
No	2,552 (42%)	928 (15%)	6.2	4,319 (71%)	6,062

5. ACT Outcomes

In this section we present results of two analyses on the effect of GUI 2.0 services on final ACT scores and ACT completion rates.

5.1 Impact of the GUI 2.0 practice test and in-person test preparation

When GUI 2.0 hired CES to provide practice testing and ACT preparation services, the intent was that all students would take the practice test. From practice test results, students would be directed toward services and preparation they needed to improve scores on test sections that were identified as in need. This sequence of events did not occur at the rates we had hoped due to implementation challenges (see Section 6.2). Here we explore the relationship between test scores and test preparation.

We modeled final ACT exam scores using linear regression, including demographic variables and 10th grade scores on standardized math and reading tests as independent variables. The effects of having taken the practice test, participating in test preparation or doing both are provided in Table 3. We ran the model with scores on each of the ACT subject tests as outcomes, as well as the composite score.

Table 3: CES test preparation services and ACT scores

	English	Math	Reading	Science	Composite
Pre-ACT	.447* (.184)	.156	.456*	.581**	.408**
		(.147)	(.203)	(.176)	(.146)
Test Preparation	-.058 (.281)	-.056	-.256	-.050	-.074 (.223)
		(.803)	(.309)	(.268)	
Pre-ACT and Test Preparation	1.317***	.416	.728	.529	.731**
	(.345)	(.276)	(.380)	(.329)	(.274)

Table 3 shows that participating in test preparation without having taken the practice exam did not have a significant effect on final ACT scores, in any subject test or the composite score. Meanwhile, taking a practice ACT exam did increase scores on the ACT on all subjects, except math, by about a half of a point each. Students who took the practice test and participated in test preparation services experienced the largest increase in English and composite scores, at 1.3 and 0.7 points, respectively. No significant relationship was found for math, reading or science scores.

5.2 District Testing and ACT Test-Taking Rates

GUI 2.0 districts were required to provide district wide ACT testing during the school day, to remove cost and timing barriers for disadvantaged students. Eleven of twelve districts did so, while the remaining

district provided vouchers for students to take the exam outside of school hours at no cost. As a result, 70 percent of GUI 2.0 students completed the official ACT exam.

To determine the impact of district testing, we used a difference-in-differences analysis to compare ACT completion rates of GUI 2.0 students to those at non-GUI 2.0 schools or in earlier cohorts at GUI 2.0 schools. If GUI 2.0 had an effect, we would expect to see a rise in ACT completion rates for the GUI 2.0 cohort (graduating class of 2020). We completed this analysis at the district level, therefore students who were not officially in the GUI 2.0 cohort (defined during 9th grade) yet enrolled in GUI 2.0 schools the same year as the cohort are included in the ACT completion rates. We used senior enrollment data from IDE, which did not include whether or not a senior graduated. If a student was enrolled multiple years as a senior, we deleted that student from all but the first year of enrollment.

Figure 1 shows ACT completion rates for GUI 2.0 and non GUI 2.0 districts over time. If the GUI 2.0 program was the only influencing factor, we would expect that pre-intervention, GUI 2.0 and non-GUI 2.0 schools would show similar trends in completion rates. Figure 1 shows a gradual increase for both GUI 2.0 and non-GUI 2.0 schools from 2016 to 2018. In 2019, ACT completion rates drop for non-GUI 2.0 districts but continue to rise for GUI 2.0 districts. GUI 2.0 attempted to change the entire school culture regarding college. If it was successful, the 2019 ACT completion rates may be starting to show a GUI 2.0 effect.

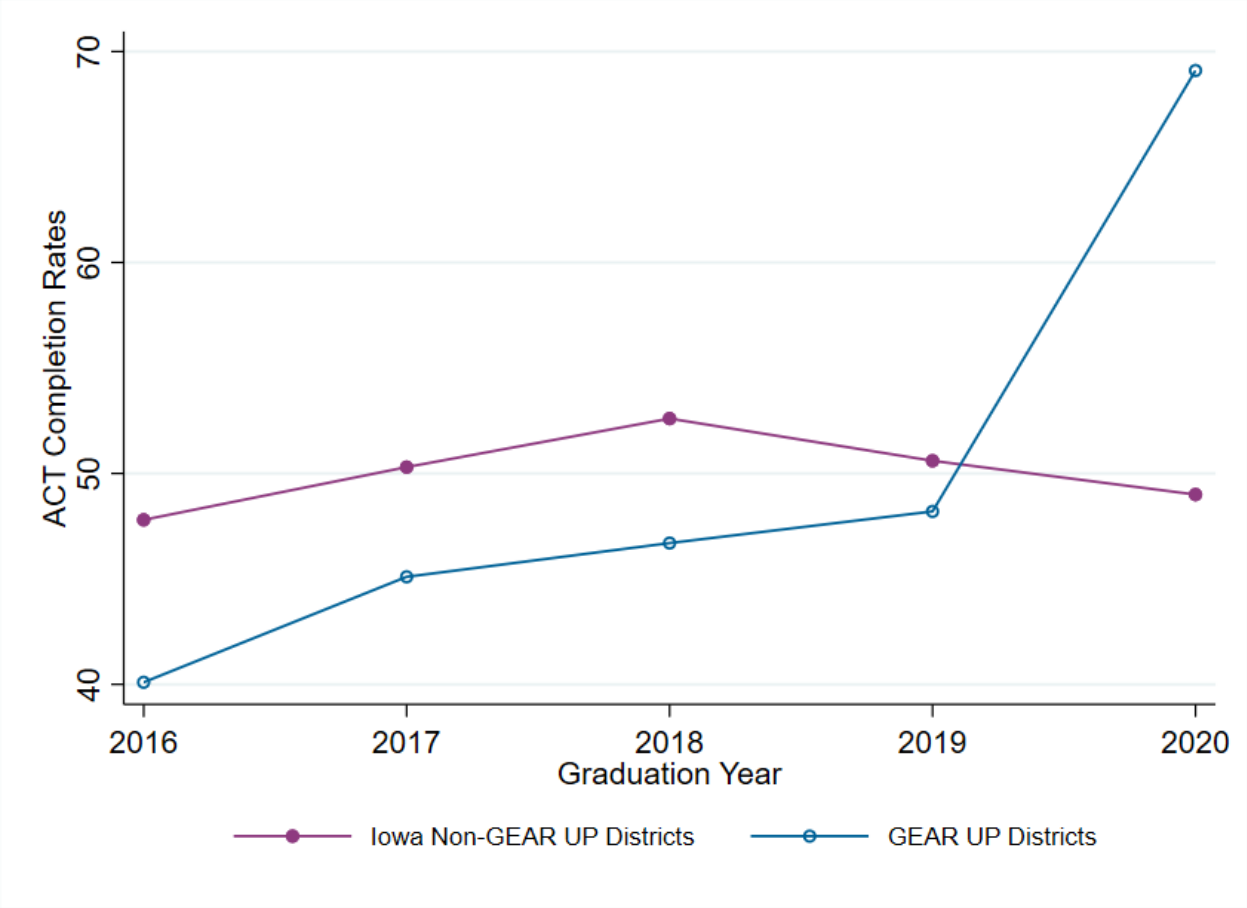


Figure 1: ACT completion rates

Table 4 lists the results from the logistic regression models run on the outcome variable of whether or not a student took the ACT exam. The design of the three models follows an analysis of GEAR UP outcomes by Bowman et al. (2016). Model 1 considered three binary predictor variables; enrollment in a GUI 2.0 district, graduation in 2020 and graduating in 2020 from a GUI 2.0 district. Model 2 added in the linear trends in graduation year and Model 3 included demographic control variables. All three models included school of enrollment as a fixed effect. In each model, the average marginal effect of having graduated from a GUI 2.0 school in 2020 was approximately 27 percentage points.

Table 4: GUI 2.0 status and ACT completion

	Model 1	Model 2	Model 3
GUI 2.0 District	-1.105*** (.163)	-1.097*** (.163)	-.391* (.183)
Class of 2020	-.069*** (.014)	-.204*** (.019)	-.313*** (.020)
GUI 2.0 District x Class of 2020	1.150*** (.033)	1.148*** (.033)	1.390*** (.041)
Average marginal effect (GUI 2.0 District x Class of 2020)	**.265*** (.007)**	**.265*** (.007)**	**.269*** (.008)**
Graduation Year (linear)		.054*** (.005)	.062***(.005)
Asian			.368*** (.038)
Black			-.351*** (.029)
Latinx			-.445*** (.023)

Multiple Races or Ethnicities	-.119*** (.034)
Native American	-.707*** (.100)
Pacific Islander	-.742*** (.137)
FRPL	-1.237*** (.013)
ESL	-1.067*** (.043)
IEP	-2.206*** (.025)
Female	.575*** (.011)
Note: *p < .05 **p < .01 ***p < .001	

Given that GUI 2.0 clearly increased the proportion of students in GUI 2.0 districts who completed the ACT, it is interesting to consider which students were impacted. The distribution of scores for GUI 2.0 and non-GUI 2.0 districts are shown in Figure 2. The average of the pre-intervention graduating classes is compared to the 2020 graduating class in both cases. For the non-GUI 2.0 districts, the distribution of scores remains roughly constant, though the total number of students completing the exam drops slightly. For GUI 2.0 districts, we see that the peak of the 2020 graduating class score distribution shifted toward lower scores, while the number of students taking the ACT at the higher end of the score distribution remained about the same as pre GUI 2.0 years. The ACT scores for students typically admitted to Iowa's four-year public institutions fall between 21 and 28. With district wide testing, approximately 100 more students from GEAR UP schools fall into that ACT range than the previous four years, on average.

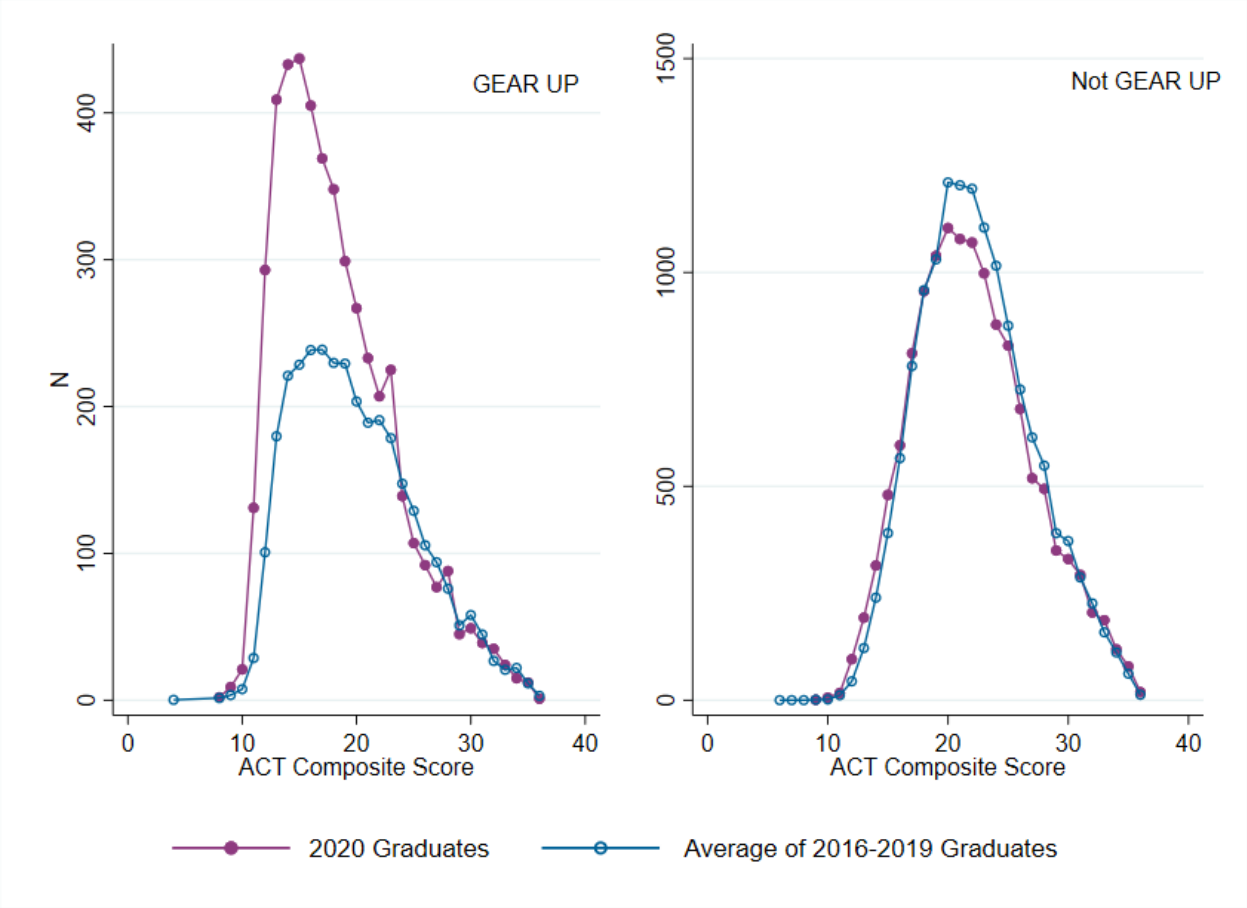


Figure 2: Distribution of ACT scores before and after GUI 2.0

6. Accomplishments, Challenges, and Recommendations

To better understand successes and pitfalls with ACT preparation and testing efforts during 11th grade we undertook two efforts to elicit feedback from GUI 2.0 coaches and school personnel directly involved. At the end of the 11th grade school staff were surveyed on accomplishments and opportunities for improvement for the purpose of annual reporting to the US Department of Education. We reviewed these responses and extracted all mentions of ACT related activities to identify accomplishments, challenges, and recommendations for future implementation of ACT preparation activities. In addition, we administered a separate, specific survey of school personnel most closely involved in the administration of ACT activities to determine the nature of services provided, materials used to support student performance, student participation in services, and logistical issues around communication, attitudes toward services, program support, and implementation of services. Responses from both surveys were combined and examined for accomplishments, challenges, and future recommendations. Finally, procedural challenges and successes experienced at the administrative level of Iowa College Aid are included below.

6.1 Accomplishments

Not surprisingly, the most frequent success noted by school personnel was the increased number of students who took the ACT assessment. Many individuals expressed great excitement about the large gains of students taking the ACT as well as noting that without the GUI 2.0 effort many of their students

would not have completed the ACT. The second most frequent accomplishment involved school personnel witnessing specific students improve their test performance. Specifically, individuals described students who actively engaged in test prep services and experienced improvement from the practice test to the actual ACT. This outcome also elicited tremendously positive reactions from teachers, counselors, and GUI 2.0 coaches.

Several respondents reported positive experiences with the CES test preparation training and materials. One stated *"We trained 7 content area teachers on the Cambridge [test prep vendor] test and how to utilize that for test prep for the ACT*" and another said, *"The training was good and easy to follow."* Others noted, *"Several teachers were very excited to help facilitate prep"* and *"They were very helpful in helping us understand the tools and creating a plan to access them in our environment."* Conversely, a couple of respondents noted that the study book was literally overwhelming to their students and that they utilized test prep materials from previous years.

Having the opportunity to take the pre-ACT or an ACT practice test was a success noted by several respondents. Giving the students a preview of what the ACT would be like as well as the opportunity to identify gaps were the most common responses. One person noted that then, *"The students were able to get refreshers in English, Math, Science, and Reading."* Another stated this in regards to the practice test, *"This event alone increased the expectations for the students and their families."*

Several other positive outcomes were noted by staff. One person described how their students were more confident as they approached the ACT. Another stated that their students expressed greater expectations in themselves with respect to how they would perform on the ACT and that this was backed up by their actual performance. Finally, another person indicated that after taking the ACT several students engaged in different conversations around what efforts they would need to take to get into college and how to take more challenging coursework during the senior year.

6.2 Challenges

By far the most frequently cited challenge was lack of student engagement in ACT preparation activities. Multiple individuals indicated great excitement from students and that many students signed up for services (Saturday tutoring sessions, after school sessions, optional opportunities offered during flex or open times during the day) but the actual number who followed through was much lower. One person described students' attitude that studying for a few days before the actual exam was all that was required and that spending time on practice tests and studying areas of weakness months in advance did not seem necessary. Not surprisingly, several individuals noted that among the students who did attend these offered events they tended to experience improvement in their scores.

A few respondents indicated that lack of support among others in the building was a challenge, including teachers and administrators not being excited or emphasizing ACT preparation activities. One person who expressed lack of support noted that administrators were often putting out 'fires' and this got in the way of supporting testing and test prep efforts. As noted below, quite a few school personnel expressed excitement and demonstrated support for these efforts but this was not a universal experience for GUI 2.0 coaches and counselors.

Having enough time to spend on ACT preparation activities during the school day was mentioned as a challenge by some respondents. This problem was exacerbated by delays in ICA's ability to approve a

contract with CES. Instead of being able to offer pre-testing prior to the start of 11th grade, the practice test occurred once the school year started and school schedules were finalized, leaving little room for test preparation services. Had the data from the pre-test been available sooner, there would have been data to support the need for ACT test preparation. Interestingly, one person stated that there was sufficient time to spend on prep but the fidelity toward the intervention was lacking among some staff.

6.3 Future Recommendations

Build support for ACT prep and district wide testing. There were two different responses with respect to support for these activities. Some individuals expressed a great deal of support from teachers, counselors, and administrators for providing ACT prep activities during or after school as well as facilitating testing at school during the week. In addition, several individuals noted that these efforts have been or were likely to be sustained after the GUI 2.0 cohort completed 11th grade. At the same time others noted that a lack of building wide support was a challenge. Future endeavors should devote time to creating a culture and district wide practices that promotes college access activities such as the ACT.

Emphasize flexibility of test prep services. Several people described successes in offering varying types of services as well as a wide variety of modalities for supporting students. Some respondents described success with more engaging test prep materials found on ACT.org. Others noted that having opportunities, during school, after school, and on Saturdays were helpful, particularly among students who chose to attend. Several noted success around integrating brief activities (e.g., 5 minute test tips or review items) into regular class meetings as a way to deliver content to students, for example *"We saw our best success when we had teachers incorporate ACT prep activities into regular class time."*

Increase student engagement. Given that student utilization of offered services was the biggest challenge identified by staff, future efforts should emphasize the importance and value of preparing for and completing the ACT. Messaging for the ACT could begin earlier in the program to increase the expectation among students that this is a normal part of the college preparation process. The GUI 2.0 program has demonstrated strong outcomes on increasing students' expectations that they will complete college after high school. Additional efforts to inform students about the importance of the ACT in this process may increase engagement. In addition, GUI staff should begin planning even earlier to engage school personnel in determining what types of activities are more likely to engage students in their specific setting.

Expand students served. One respondent indicated directly, and several others indirectly implied, that the students who most need ACT prep services, likely first generation, lower socioeconomic status, possibly students of color, were less likely to take part in services. This issue is also reflected in Table 2, which shows lower participation rates for minority and low income students. Given the goal of the GEAR UP program to specifically support underserved students future efforts should include messaging that all encourages all students to participate in services and challenges school staff to ensure that every student in the building hears the message that taking the ACT is for them.

7. Conclusions

There is no doubt that GUI 2.0 had a large effect on the number of students who completed the ACT exam. This was done by requiring GUI 2.0 partners to offer district wide ACT testing that occurred during the school day and was free for students. Access to the ACT not only helped students accomplish a step that is important for college enrollment, it also allowed students to see their potential. For instance,

an additional 100 students tested as eligible to attend a Regent University in Iowa, compared to the past few years.

In addition to providing access to the ACT exam, GUI 2.0 helped students succeed by administering a practice test which improved scores by approximately half a point. The largest effects were seen when students took part in both the pre-test and the test preparation services, with a typical gain on the Composite score of 0.7 points. Unfortunately, few students participated in both the pre-test and test preparation due to issues with scheduling and a lack of enthusiasm either within the school or amongst the students.

Our recommendation for future emphasis on the ACT for GEAR UP programs would be to start planning early. By developing flexible, engaging test preparation services and starting conversations with school personal from the beginning, students have the potential to benefit significantly from exposure to ACT material.

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