Grades 9–12 Comprehensive
Outcomes Report

Texas GEAR UP
State Grant
Evaluation

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Acronyms and Abbreviations

AEIS	Academic Excellence Indicator System
AP	Advanced Placement
APR	Annual Performance Report
CTK	Community TechKnowledge
ED	U.S. Department of Education
EL	English Learner
EOC	End-of-Course
FY	Fiscal Year
GEAR UP	Gaining Early Awareness and Readiness for Undergraduate Programs
GUIDES	GEAR UP Integrated Data Entry System
HLM	Hierarchical Linear Model
IGC	Individual Graduation Committee
MLM	Multilevel Linear Model
NOGA	Notification of Grant Award
PBL	Project-based Learning
PD	Professional Development
PEIMS	Public Education Information Management System
PSAT/NMSQT	Preliminary SAT/National Merit Scholarship Qualifying Test
PSAT-10	Preliminary SAT for Grade 10 students
PSM	Propensity Score Matching
QED	Quasi-Experimental Design
SB	Senate Bill
SG	State Grant
STAAR®	State of Texas Assessments of Academic Readiness
STAAR® EOC	State of Texas Assessments of Academic Readiness End-of-Course
STEM	Science, Technology, Engineering, and Mathematics
TAKS	Texas Assessment of Knowledge and Skills
TAPR	Texas Academic Performance Report
TEA	Texas Education Agency
TEC	Texas Education Code
UT-IPSI	The University of Texas at Austin's Institute for Public School Initiatives

Highlights

Overview

This report explores the impact on academic outcomes of the Texas Gaining Early Awareness and Readiness for Undergraduate Programs State Grant (Texas GEAR UP SG) for students in six participating high schools. Specifically, outcomes were analyzed for students who attended these schools in 2014–15 to 2017–18, from Grades 9 to 12 (the primary cohort) relative to:

- **The State** (where available)
- **Comparison cohort** – similar schools to the primary cohort not served by Texas GEAR UP SG
- **Retrospective cohort –** the same schools as the primary cohort but one year prior to implementation
- **Follow-on cohorts** – the same schools as the primary cohort, but one and two years after implementation (where available)

Additionally, to examine the effect of dosage on outcomes, the number of years students were in the cohort was also examined relative to outcomes.

Key Findings

Outcomes were examined in two ways. First, differences at the group level (i.e., mean differences) were assessed. Next, multilevel models (MLMs) were constructed that took school, prior STAAR performance and other student characteristics (e.g., gender, at-risk status) into account. Because the MLMs take factors into account that could impact outcomes, these models are a much more robust way to measure the impact of Texas GEAR UP SG.

Below are outcomes in which cohort group or length of time in cohort were significant predictors in the covariate MLMs:

Advanced Course Completion:

- Texas GEAR UP SG's strongest success was in increasing the number of students who completed advanced coursework.
    - **Algebra I completion** – primary cohort students were more likely to complete Algebra I by Grade 9 than retrospective cohort students.
    - **AP course completion** - primary cohort students completed more AP courses than students in the retrospective cohort.
    - **Dual credit earned** – primary cohort students were more likely to earn college credit via dual credit course completion in high school than the retrospective cohort.
- There were sustained increases in Grades 8 and 9 Algebra I completion for schools that implemented Texas GEAR UP SG for up to two years after program completion.

STAAR EOC:

- Students participating in Texas GEAR UP SG were statistically less likely to meet STAAR EOC standards than students in the retrospective cohort in all areas but English II – where there were no differences between groups - and Algebra I – where Texas GEAR UP participants were more likely to reach the Approaches Grade Level standard than students in the retrospective cohort.
- Students who were in the cohort for a longer period of time were more likely to reach both the Approaches Grade Level standard and the Meets Grade Level standard than students who were in the cohort for a shorter period of time.

On-Time Promotion / Graduation

- Students in the cohort were less likely to be promoted on-time from Grade 9 to 10 than students in the retrospective cohort.
- Students in Texas GEAR UP SG schools had slightly higher graduation rates compared to all students at the state level, but there were no differences for graduation between the cohort groups or for length of time in cohort.

Executive Summary

Overview

The U.S. Department of Education (ED) awarded the Texas Education Agency (TEA) a $33 million federal Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) grant in federal fiscal year (FY) 2012. The broad purpose of the federal GEAR UP program is to increase the number of low-income students who are prepared to enter and succeed in postsecondary education through state and local partnership grants. Beginning in 2012–13, the Texas GEAR UP SG followed a cohort of students from Grade 7 through their first year of postsecondary education (the 2018–19 school year).

This report focuses on outcomes in Years 3 through 6 of the Texas GEAR UP SG (the 2014–15 school year through the 2017–18 school year), the cohort's years in high school (Grades 9, 10, 11, and 12). Seven middle schools which fed into six high schools were involved in the state evaluation of GEAR UP. Participating schools and their districts are listed in Table ES.1; throughout this report, schools are identified by letter (e.g., School H, School I) in order to protect confidentiality.

Table ES.1 Texas GEAR UP SG Schools

District	Middle School (2012 13; 2013 14)	High School (2014 15; 2015 16; 2016 17; 2017 18)
Edgewood Independent School District	Brentwood, Garcia, Wrenn	Memorial, Kennedy
Somerset Independent School District	Somerset	Somerset
Lubbock Independent School District	Dunbar	Estacado
Manor Independent School District	Decker, Manor	Manor, Manor New Tech

In order to meet the federal purpose of the grant, the Texas GEAR UP SG program had nine project goals and 27 corresponding objectives, provided in Appendix A.2 of the report. Some of the goals and objectives, relevant to this report, were related to advanced coursework, college preparation, on-time promotion, and improved high school completion at a college-ready level. Other goals, many shared across the state, were to increase data-driven instruction (through teacher professional development [PD]), community collaboration, and access to postsecondary information, and to increase college attendance and college retention.

Evaluation of Texas GEAR UP State Grant

The evaluation of the program examines implementation and outcomes (including the relationship between the two) over the seven-year grant period. Evaluation objectives include the following:

- Provide ongoing formative evaluation of implementation of Texas GEAR UP SG (facilitators and barriers, promising practices, and recommended corrections).
- Explore implementation status, mix of implementation, and relationships between implementation and student outcomes.
- Determine the impact on parents, school, and community alliances.
- Examine access to and use of statewide resources.
- Examine student outcomes.
- Understand cost and sustainability.

The external evaluation is a longitudinal design that spans seven years and follows a cohort model (see Table ES.2).

- The **primary cohort** includes students at the six Texas GEAR UP SG high schools to whom services were provided.
- The **comparison cohort** consists of students attending six statistically similar schools that did not participate in Texas GEAR UP SG.
- The **retrospective cohort** contains students who attended the same six Texas GEAR UP SG schools one year prior to the start of the grant.
- The **follow-on cohort** consists of students who attended the Texas GEAR UP SG schools one- and two-years after implementation.

Table ES.2. Evaluation Timeline: Grade in School by Grant Year by Cohort Group

Cohort Group	Pre Grant Award 2011 12	Grant Year 1 2012 13	Grant Year 2 2013 14	Grant Year 3 2014 15	Grant Year 4 2015 16	Grant Year 5 2016 17	Grant Year 6 2017 18	Grant Year 7 2018 19
Primary Cohort (Texas GEAR UP SG Schools)	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	First Year of College
Matched Comparison Schools	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	First Year of College
Retrospective Cohort (Texas GEAR UP SG Schools pre-award)	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	First Year of College	-
Follow-on Cohort 1 (Texas GEAR UP SG Schools)	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Follow-on Cohort 2 (Texas GEAR UP SG Schools)	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11

In this report, outcomes for the primary cohort from Grade 9 to Grade 12 (2014–15 to 2017–18) in three major areas – advanced course completion, STAAR EOC performance, and on-time promotion/graduation are examined. These outcomes are compared to those of the state (when available) and to those of the comparison and retrospective cohorts. Differences between cohort groups that persist when school-level differences, student characteristics and prior academic performance are taken into account are highlighted. In addition, to measure program sustainability, when possible, the longitudinal effects of the program are evaluated by examining outcomes for the two follow-on cohorts. Additionally, when possible, the effect of dosage (e.g., exposure to more years of Texas GEAR UP SG programming vs. fewer years) is examined.

Evaluation Questions

- What outcomes are associated with participation in Texas GEAR UP SG?
- How do trends in outcomes at the Texas GEAR UP SG schools differ in comparison to the state average and/or the comparison group schools?
- How do trends in outcomes for the Texas GEAR UP SG primary cohort students differ from the retrospective cohort?
- Were there lasting effects at schools one to two years after Texas GEAR UP SG implementation was completed?
- How do trajectories of outcomes differ based on the length of time students attended Texas GEAR UP schools?

Analysis Strategy

Outcomes were examined in two ways. First, differences at the group level (i.e., mean differences) were assessed. Next, multilevel models (MLM) were constructed. The first MLM (main MLM) examined cohort effects after clustering students within schools. A second MLM (covariate MLM) added prior STAAR performance and other student characteristics (e.g., gender, at-risk status). Because the covariate MLMs take factors into account that could impact group differences, these models are a much more robust way to measure the impact of Texas GEAR UP SG.

Key Findings

In the following section, tables describing differences at the group level and in the covariate MLM models are presented. Findings were considered key if they persisted in the covariate MLMs because these models took school, prior STAAR performance and student characteristics into account.

Advanced Course Completion

The first area of interest was advanced course completion. Specifically, completion of Algebra I, Algebra II, and AP courses was examined, in addition to earned college credit through dual course completion.

COHORT COMPARISONS

> 🔑 **Key Takeaway:**
>
> *Texas GEAR UP SG's strongest success was in increasing the number of students who completed advanced coursework in comparison to the year prior to the grant.*

Students in the Texas GEAR UP SG primary cohort completed Algebra I, AP, and dual credit courses at significantly higher rates than did students in the retrospective cohort. These differences held in the more stringent covariate MLM. A higher percentage of students completed at least one AP course than did students in the comparison cohort, but there were no differences in any of the covariate models. See Table ES.3.

Table ES.3. Advanced Course Outcomes Differences by Cohort Group

Outcome	Primary Cohort vs. Comparison		Primary Cohort vs. Retrospective	
	Group Level	Covariate Model	Group Level	Covariate Model
Algebra I by Grade 8	n/a	n/a	Higher	Higher
Algebra I by Grade 9	-	-	Higher	Higher
Algebra II by Grade 12	-	-	-	-
At Least One AP Course	Higher	-	-	-
Number of AP Courses Completed	-	-	Higher	Higher
At Least One Dual Credit Course	-	-	Higher	Higher

Notes. Color indicates the direction of effect (blue = primary higher; orange = primary lower) and confidence in the observed results (darker shaded items, from the MLMs, indicate more reliability). "n/a" indicates that the area was not assessed, and "-" indicates no significant differences between cohort groups. Algebra I by Grade 8 results were taken from the previous comprehensive report (Hutson et al., 2018).

LONG TERM EFFECTS

> 🔑 **Key Takeaway:**
>
> *There were sustained increases in Grades 8 and 9 Algebra I completion for schools that implemented Texas GEAR UP SG for up to two years after program completion.*

Completion rates for Algebra I increased for students in the primary cohort as compared to students in the retrospective cohort in both Grades 8 and 9, and the two follow-on cohorts had similarly high levels of Algebra I completion. In fact, for Algebra I completion in Grade 9, the first follow-on cohort had both a significantly higher completion rate than the retrospective cohort and the primary cohort. All of these differences were sustained in the covariate MLMs that controlled for student characteristics and prior STAAR performance. See Figure ES.1.

Figure ES.1. Percentage of Students Completing Algebra I in Grade 8 and Grade 9 Increased During Program Implementation and Remained Elevated Two Years Afterward
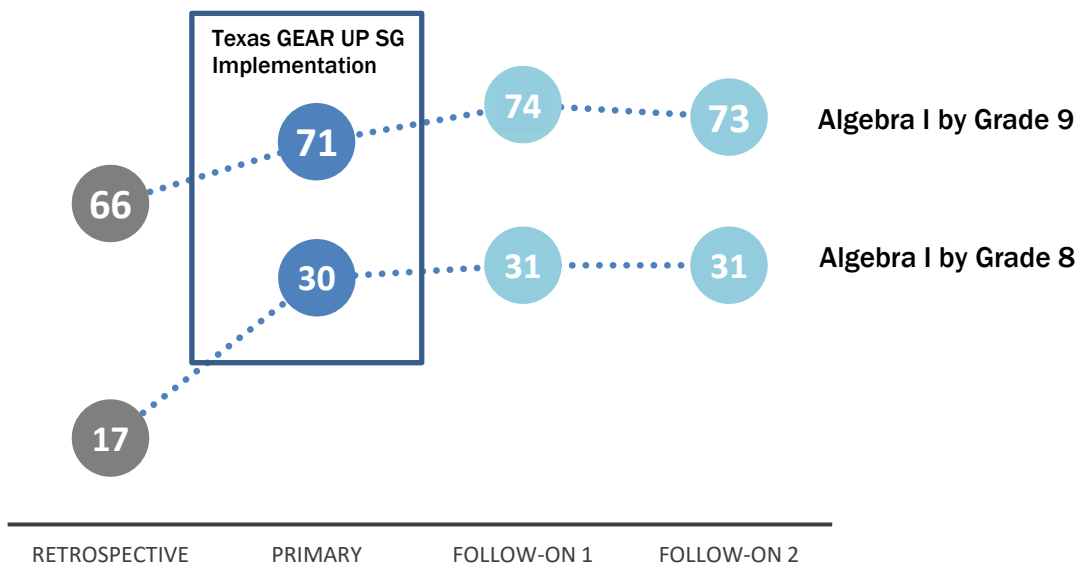
STAAR EOC

To determine students' academic preparation for college, performance on STAAR EOC assessments was examined. Specifically, the percentage of students who reached the Approaches Grade Level standard (the minimum passing standard) and the Meets Grade Level standard (which serves as a proxy for postsecondary readiness in this analysis) were analyzed.

COHORT COMPARISONS

> ☞   ## Key Takeaway:
>
> *Primary cohort students were less likely to meet five of the ten EOC standards examined than students in the retrospective cohort, and more likely to meet one of the ten standards in covariate MLM models, indicating a possible cost to the emphasis on advanced course taking. However, there were no differences between the primary and comparison cohort students in the models.*

More students in the primary cohort reached Approaches Grade Level standard for English II and for U.S. History than students in the comparison cohort, but these differences were not sustained in the covariate MLMs. In the MLM models, there were no differences between primary and comparison cohort students. See Table ES.4.

Cohort group was a significant predictor in the primary vs. retrospective covariate MLM for Algebra I Approaches Grade Level. **Students in the primary cohort were more likely to reach the Approaches Grade Level standard for Algebra I than students in the retrospective cohort.** In addition, a greater percentage of primary cohort students reached the Meets Grade Level standard than students in the retrospective cohort, but this difference was not sustained in the covariate MLM.

However, results for the other EOC assessments were not as favorable **Students in the primary cohort had poorer results on three of five STAAR EOCs than did students in the retrospective cohort.** Students in the primary cohort were less likely to reach Approaches Grade Level standard than students in the retrospective cohort for English I, Biology, and U.S. History in the covariate MLM models. They were also less likely to reach the Meets Grade Level standard for English I and U.S. History than students in the retrospective cohort.

There were some changes in the criteria to reach Approaches Grade Level standard over time that may have had an impact on some of the results, as it was easier to reach this standard in earlier years of STAAR EOC administration. However, on two of three EOCs (English I and U.S. History) where the retrospective cohort was more likely to reach Approaches Grade Level standard, students in the retrospective cohort were also more likely to reach Meets Grade Level standard.

These findings may indicate a cost to emphasis on advanced course taking. It is possible that encouraging students to take advanced math, AP, and dual credit courses stretched resources for assisting students in meeting STAAR EOC standards—particularly those for English I and U.S. History. However, it is important to remember that there were not any differences between students in the primary and comparison cohort in these MLMs.

Table ES.4. STAAR EOC Performance Differences by Cohort Group

Outcome	Primary Cohort vs. Comparison		Primary Cohort vs. Retrospective	
	Group Level	Covariate Model	Group Level	Covariate Model
Algebra I Approaches Grade Level	-	-	-	Higher
Algebra I Meets Grade Level	-	-	Higher	-
English I Approaches Grade Level	-	-	Lower	Lower
English I Meets Grade Level	-	-	Lower	Lower
English II Approaches Grade Level	Higher	-	-	-
English II Meets Grade Level	-	-	-	-
Biology Approaches Grade Level	-	-	-	Lower
Biology Meets Grade Level	-	-	-	-
U.S. History Approaches Grade Level	Higher	-	Lower	Lower
U.S. History Meets Grade Level	-	-	Lower	Lower

Note. Color indicates the direction of effect (blue = primary higher; orange = primary lower) and confidence in the observed results (darker shaded items, from the MLMs, indicate more reliability). "-" indicates no significant differences between cohort groups.

LENGTH OF TIME IN COHORT

☞ Key Takeaway:

Students who attended Texas GEAR UP schools for a longer period of time (up to six years) had statistically better STAAR EOC outcomes than students who attended the same schools for a shorter period of time.

Length of time in cohort was a strong predictor for all ten covariate MLMs for STAAR EOCs. Students who were in the cohort for a longer period of time were much more likely to reach both the Approaches Grade Level and Meets Grade Level standards than students who were in the cohort for a shorter period of time.

On-Time Promotion and Graduation

The final category of outcomes concerned on-time promotion from Grade 9 to 10, on-time graduation, and graduation under the Foundation High School Program or at the distinguished level of achievement.

COHORT COMPARISONS

🔑 Key Takeaway:

Participation in Texas GEAR UP SG did not provide an advantage for students in terms of on-time promotion, graduation, or graduation under the Foundation High School Program with an endorsement or at the distinguished level of achievement.

Only 80% of primary cohort students were promoted from Grade 9 to Grade 10 on-time, which was substantially lower than the state average of 91%. A higher percentage of students in the primary cohort were promoted on-time from Grade 9 to Grade 10 than students in the retrospective cohort, but in the covariate MLM, once prior STAAR performance and other student characteristics were accounted for, retrospective cohort students were more likely to be promoted than primary cohort students. On the other hand, a slightly higher percentage of comparison cohort students were promoted from Grade 9 to 10 on time than students in the primary cohort, but there were no differences in the covariate MLM.

About 92% of Texas GEAR UP SG primary cohort students graduated early or on-time. This was slightly higher than the state of Texas (90%) for the class of 2018, but lower than the retrospective cohort (95%). However, there were no differences between cohorts in the MLM models for on-time graduation. **A slightly lower percentage of primary cohort students (83%) graduated under the Foundation High School Program plus endorsement or at the distinguished level of achievement compared to the state** (85%). However, there were no differences between the primary and comparison cohort for this outcome. Retrospective cohort students had the option to but were not required to graduate under the Foundation High School Program plus endorsement or at the distinguished level of achievement, so differences between cohorts were not assessed for this outcome. See Table ES.5.

Table ES.5. On-time Promotion/Graduation Differences by Cohort Group

Outcome	Primary Cohort vs. Comparison		Primary Cohort vs. Retrospective	
	Group Level	Covariate Model	Group Level	Covariate Model
On-time Promotion Grade 9 to 10	Lower	-	Higher	Lower
On-time Graduation	-	-	Lower	-
Graduation under the Foundation High School Program plus endorsement or at the distinguished level of achievement	-	-	n/a	n/a

Notes. Color indicates the direction of effect (blue = primary higher; orange = primary lower) and confidence in the observed results (darker shaded items, from the MLMs, indicate more reliability. "n/a" indicates that the area was not assessed, and "-" indicates no significant differences between cohort groups.

LONG-TERM EFFECTS

Differences between the primary cohort and the two follow-on cohorts for promotion from Grade 9 to Grade 10 were able to be examined for this outcome (graduation data were not available at the time of analysis). In the MLM models, retrospective cohort students were more likely to be promoted on time than students in the follow-on cohorts, once prior STAAR performance and other student characteristics were taken into account. Additionally, students in the primary cohort were more likely to be promoted on time than students in the second follow-on cohort.

LENGTH OF TIME IN COHORT

Students who were in the cohort for a longer period of time were more likely to have been promoted from Grade 9 to Grade 10 on time. However, there were no differences in the covariate MLMs for on time graduation or graduation under the Foundation High School Program plus endorsement or at the distinguished level of achievement.

Recommendations

- Algebra I completion was much higher for the primary cohort than the retrospective cohort, and the change was sustained for at least two subsequent years. However, there were no differences between cohort groups for Algebra II completion. **If a goal of future programs is to increase advanced mathematics course taking through the end of high school, efforts should start early (as in the Texas GEAR UP SG, where efforts to encourage students to take Algebra I began in Grade 7) and continue as students continue through high school.**
- Students in the primary cohort were more likely to complete AP courses and to earn college credit via dual credit course completion than students in the retrospective cohort. **Efforts here could be duplicated in other programs or in other course areas (e.g., advanced mathematics).**
- Results for STAAR EOCs and on-time promotion from Grade 9 to 10 generally favored the retrospective cohort. These results may indicate that the program stretched academic resources such that schools were not able to provide as much support for STAAR and for Grade 9 students who were struggling to meet promotion requirements. **Adding additional supports for students could mitigate these declines.**

1. Introduction and Overview of Texas GEAR UP

In April 2012, the U.S. Department of Education (ED) awarded the Texas Education Agency (TEA) a federal Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) grant. The broad purpose of the federal GEAR UP program is to increase the number of low-income students who are prepared to enter and succeed in postsecondary education. Through the Texas GEAR UP State Grant (SG), participating schools provide services to a primary cohort of students from Grade 7 (2012–13 school year) through their first year of postsecondary education (2018–19).[1]

Texas GEAR UP SG services are intended to serve individual students and their parents, as well as to support teachers through the provision of professional development (PD) and schools/districts through changes in academic rigor. In addition, the Texas GEAR UP SG is intended to make a statewide impact through the widespread provision of coordinated information and resources for students and their parents regarding postsecondary opportunities. TEA contracted with ICF to provide an external, third-party evaluation of the Texas GEAR UP SG, including the annual implementation reports.

The first comprehensive report (Hutson et. al, 2018) examined the effects of the program on three Grade 8 outcomes: on-time promotion from Grade 7 to Grade 8, Algebra I completion in Grade 8, and State of Texas Assessments of Academic Readiness (STAAR) achievement. The authors found that the Texas GEAR UP SG primary cohort had significantly higher levels of completion of Algebra I in Grade 8 than students in comparison schools and students who attended the Texas GEAR UP SG schools before the program was implemented. The remaining findings were mixed, with primary cohort students sometimes having better outcomes, and sometimes worse outcomes than the other two groups of students. The report also includes an examination of the relationship between participation and outcomes based on approximately 18 months of program implementation (from November 2012 to March 2014).

This second comprehensive report examines outcomes in high school, that is, from Grade 9 to 12. The two major areas of focus are on college readiness and on-time promotion/graduation. College readiness is measured first by examining advanced course completion – that is, Algebra I completion by Grade 9, and Algebra II, Advanced Placement (AP), and dual credit course completion by Grade 12. Second, college readiness is measured by examining the percentage of students who achieved Approaches Grade Level and Meets Grade Level on the STAAR End-of-Course (EOC) assessments. Students are expected to pass five EOC assessments to graduate from Texas public schools: Algebra I, English I, English II, Biology, and U.S. History.[2] On-time promotion is assessed at the crucial transition from Grade 9 to

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[1] Additional information about the cohort evaluation design of Texas GEAR UP SG is included in Appendix B.

[2] The passage of House Bill 5 in 2015 (84th Texas Legislature) modified Texas Education Code (TEC) §28.0258 (2016) revising the state's assessment graduation requirements for students enrolled in the Grade 11 or Grade 12 beginning in the 2014–15 school year through the 2018–19 school year. Under this provision, a student who has failed the EOC assessment for no more than two of the five required courses may receive a Texas high school diploma if the student was determined to be qualified to graduate by means of an individual graduation committee (IGC) determination. See https://statutes.capitol.texas.gov/Docs/ED/htm/ED.28.htm#28.0258.

Grade 10. Finally, on-time graduation and graduation with advanced degree plans are examined.

While this comprehensive report focuses on outcomes, annual implementation reports provide detailed information regarding implementation of Texas GEAR UP SG. Annual Implementation Reports were published beginning in the 2013–14 school year (O'Donnel et al., 2013), detailing efforts in Grade 7 and will continue until the 2018–19 school year, when the primary cohort was in their first year of postsecondary education. These annual reports provide a snapshot of the services provided as well as success and challenges of implementing Texas GEAR UP SG at the participating schools (located in four districts). Readers interested in more fully understanding Texas GEAR UP SG implementation are encouraged to read the annual implementation reports. [3]

The GEAR UP Program

About the Federal GEAR UP Program

TEA's application for and receipt of a federal GEAR UP SG is in line with the general state focus on promoting college readiness and access. The federal GEAR UP program seeks to improve postsecondary enrollment and completion for low-income students. The program addresses the challenges faced by low-income students in attaining postsecondary success by providing services, activities, and resources to students from Grade 7 through the first year of college. The goals of the GEAR UP program are to increase postsecondary awareness and aspirations, strengthen academic preparation and achievement, and raise postsecondary participation.

Overview of Texas GEAR UP State Grant

Texas GEAR UP SG began serving students in July 2012 through a district intervention package. This package supported four districts' college readiness and success initiatives (seven middle schools and six high schools). [4] TEA selected districts to participate in the Texas GEAR UP SG grant based on data from the 2009–10 school year related to poverty and the risk of dropping out of school. At that time, all seven Texas GEAR UP SG middle schools in the four selected districts had greater percentages of students identified as being economically disadvantaged and at-risk (i.e., those students identified as being at risk for dropping out of school based on having one or more of 13 factors), compared to the state. [5] The seven middle

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[3] These reports can be found at:
https://tea.texas.gov/Reports_and_Data/Program_Evaluations/Program_Evaluations_Middle_School,_High_School,_and_College_Preparation/Program_Evaluation__Middle_School,_High_School,_and_College_Preparation_Initiatives/

[4] The statewide initiatives implemented as part of the Texas GEAR UP SG are not addressed in this report.

[5] TEC § 29.081 (2018) criteria for at-risk status include each student who is under 26 years of age and who (1) was not advanced from one grade level to the next for one or more school years; (2) is in Grades 7, 8, 9, 10, 11, or 12 and did not maintain an average equivalent of 70 on a scale of 100 in two or more subjects in the foundation curriculum during a semester in the preceding or current school year or is not maintaining such an average in two or more subjects in the foundation curriculum in the current semester; (3) did not perform satisfactorily on an assessment instrument administered to the student, and who has not in the previous or current school year subsequently performed on that instrument or another

schools also had higher-than-state-average enrollments of Hispanic students and three of the schools also had large African American student populations. Both Hispanic and African American students are historically underrepresented in higher education (Editorial Projects in Education, 2013; Krogstad, 2016).

The Texas GEAR UP SG had a range of project goals and objectives broadly focused on increasing academic rigor and support to prepare students for postsecondary education (Appendix A.2). Key to this report are Project Goals 1, 2, 4 and 5.

Project Goal 1 focuses on improved instruction and expanded academic opportunities in mathematics and science with Objective 1.1 setting a goal that by the end of the project's second year (Grade 8), 30% of cohort students would have completed Algebra I, and by the end of the project's third year (Grade 9), 85% of students would have completed Algebra I. In the Texas GEAR UP State Grant Program Evaluation Grades 7–8 Comprehensive Report, which focused on Grades 7 and 8, analyses revealed that students in the Texas GEAR UP SG primary cohort met this objective exactly. This report will examine the percentage of students completing Algebra I by Grade 9, as well as the percentage of students completing Algebra II by Grade 12. Objective 1.2 states that by the end of the project's sixth year (Grade 12), the percentage of students graduating on the Foundation High School Program with an endorsement, or at the distinguished level of achievement, will meet or exceed the state average. This objective will also be examined in this report.

Project Goal 2 is to increase access to and success in advanced academic coursework. Objective 2.2 set a goal of at least 60% of students completing a pre-AP or AP course by the end of the project's fifth year (Grade 11). Objective 2.3 set a goal of 50% of students graduating with college credit earned by AP exam or through dual credit. Progress toward these goals for the Texas GEAR UP SG primary cohort was discussed in Annual Implementation Reports #5 and #6. This report focuses on the number of AP courses completed and the number of dual credits earned by Grade 12.

Project Goal 4 is to provide strong support services to students to encourage on-time promotion and academic preparation for college. Objective 4.3 states that by the end of the project's third year (i.e., between Grade 9 and Grade 10), the on-time promotion rate of students will exceed

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appropriate instrument at a level equal to at least 110% of the level of satisfactory performance on that instrument; (4) is in prekindergarten, kindergarten, or Grades 1, 2, or 3 and did not perform satisfactorily on a readiness test or assessment instrument administered during the current school year; (5) is pregnant or is a parent; (6) has been placed in an alternative education program during the preceding or current school year; (7) has been expelled during the preceding or current school year; (8) is currently on parole, probation, deferred prosecution, or other conditional release; (9) was previously reported through the Public Education Information Management System (PEIMS) to have dropped out of school; (10) is an English language learner; (11) is in the custody or care of the Department of Protective and Regulatory Services or has, during the current school year, been referred to the department by a school official, officer of the juvenile court, or law enforcement official; (12) is homeless; or (13) resided in the preceding school year or resides in the current school year in a residential placement facility in the district, including a detention facility, substance abuse treatment facility, emergency shelter, psychiatric hospital, halfway house, or foster group home (See https://rptsvr1.tea.texas.gov/perfreport/tapr/2015/glossary.pdf; http://www.statutes.legis.state.tx.us/Docs/ED/htm/ED.29.htm#29.081).

the state average (that is, promotion from Grade 9 to 10). This objective will also be examined in this report.

Finally, Project Goal 5 is to promote high school completion and college attendance. Objective 5.3 states that by the end of the project's sixth year (Grade 12), the number of students who will graduate postsecondary education ready in mathematics and English will meet or exceed the state average. This report will examine the achievement of students at the Approaches Grade Level standard (the minimum passing standard) and the Meets Grade Level standard (indicative that the student is on track for college and career readiness) on STAAR EOC assessments for Algebra I, English I and English II, Biology, and U.S. History. Finally, this report measures success on Objective 5.4, which states that by the end of the project's sixth year (Grade 12), the graduation rate for the Texas GEAR UP Primary Cohort will meet or exceed the state average.

TEA SELECTION OF DISTRICTS/SCHOOLS TO PARTICIPATE

TEA based selection of districts to participate in the Texas GEAR UP SG grant on data from the 2009–10 school year related to poverty levels and the level of risk of students dropping out of school.[6] At that time, all seven Texas GEAR UP SG middle schools in the four selected districts had higher percentages of students who were classified as economically disadvantaged and as at risk of dropping out of school than the state average.[7]

The seven Texas GEAR UP SG middle schools (which funneled into six high schools) also had higher-than-state-average enrollments of Hispanic students. At four of the schools, over 85% of students were Hispanic. At the three schools with lower percentages of Hispanic students, the next largest group of students in the 2009–10 school year was African American. Both Hispanic and African American students are historically underrepresented in higher education (Editorial Projects in Education, 2013; Pew Hispanic Center, 2012). Table 1.1 provides general key demographics at the seven GEAR UP middle schools based on the time of selection into the cohort.

Table 1.1. Profile of Texas GEAR UP SG Middle Schools Pre-Award, 2009–10

Texas GEAR UP SG Middle School	Percentage of Economically Disadvantaged Students	Percentage of At risk Students	Percentage of Hispanic Students	Percentage of African American Students
School A	90%	68%	98%	1%
School B	82%	74%	98%	1%
School C	91%	62%	97%	1%
School D	90%	48%	51%	4%
School E	84%	56%	61%	7%
School F	76%	50%	55%	14%
School G	82%	58%	86%	13%
State average (all Texas schools)	**59%**	**47%**	**49%**	**14%**

Source. Texas Education Agency, Academic Excellence Indicator System (AEIS), 2009–10.

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[6] TEA first applied for the GEAR UP grant in July 2011 with plans for implementation to begin in the 2011–12 school year. Funding was awarded based on this application in a deferred award cycle (April 2012).

CHARACTERISTICS OF STUDENTS PARTICIPATING IN TEXAS GEAR UP STATE GRANT, 2014–15 TO 2017–18

As of May 2018, 2933 high school students had ever attended one of the six participating Texas GEAR UP SG schools during the 2014–15 to 2017–18 school years as part of the primary cohort.[8] Table 1.2 provides demographic information about the students in the primary cohort. As with middle schools, participating high schools are identified by a letter to mask the school and maintain confidentiality.

There were large demographic differences between schools. For example, although the average percentage of at-risk students was 70%, the range was from 28% (School L) to 87% (School I). Similarly, the percentage of students who were African American ranged from 0% (School M) to 43% (School J) and the percentage of students who were Hispanic ranged from 46% (School L) to 97% (Schools H and I). School L in particular was quite different from the other schools in the group. It was the only school with a lower percentage of students who were at risk of dropping out than the state average. Additionally, it had fewer Hispanic students and fewer students identified as EL, but more African American students than the cohort and state average.

Table 1.2. GEAR UP Primary Cohort Student Demographic Characteristics by School for Students Ever in Cohort, 2014–15 to 2017–18

Texas GEAR UP SG High School	Number of Students	Percentage of Economically Disadvantaged Students	Percentage of At Risk Students	Percentage of African American Students	Percentage of Hispanic Students	Percentage of English Learners
School H	636	92%	85%	2%	97%	12%
School I	625	85%	87%	1%	97%	11%
School J	336	78%	79%	43%	51%	1%
School K	791	72%	55%	29%	61%	19%
School L	127	56%	28%	22%	46%	8%
School M	418	79%	61%	0%	86%	11%
Total	**2933**	**80%**	**70%**	**14%**	**78%**	**12%**
State Average		**59%**	**51%**	**13%**	**52%**	**9%**

Sources. Texas Education Agency, Public Education Information Management System (PEIMS), 2015–2018, and Texas Education Agency (2018)*.* PEIMS Standard Reports (2018).[9] State averages are from 2017–2018.
Notes. Students included in this table attended one of the six high schools participating in Texas GEAR UP SG in Grade 9, 10, 11 and/or 12. An additional 415 students in the primary cohort attended a Texas GEAR UP SG middle school in Grade 7 and/or Grade 8 but did not enroll in a Texas GEAR UP SG high school.

Evaluation of Texas GEAR UP State Grant

The evaluation of the Texas GEAR UP SG program over the seven-year grant period focused on accomplishing the following objectives:

- Providing TEA with regular, formative feedback regarding implementation of the program, including formative memos within 30 days of completion of each data collection.
- Understanding relationships among Texas GEAR UP SG implementation, the timing of implementation, and the implementation dosage on Texas GEAR UP SG outcomes.

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[8] Students must have attended school for enough days to be considered part of the cohort, see section B.5. Appendix B for more information on cohort processing rules
[9] See website: https://tea.texas.gov/Reports_and_Data/Student_Data/Standard_Reports/PEIMS_Standard_Reports

- Describing opportunities provided through Texas GEAR UP SG at the statewide level.
- Identifying facilitators and barriers to Texas GEAR UP SG implementation.
- Identifying potential Texas GEAR UP SG promising practices and any possible correction in needed areas of program implementation.
- Evaluating the impact of Texas GEAR UP SG from a cost and sustainability perspective.

This comprehensive outcomes report focuses on addressing the following additional evaluation questions:

- What outcomes are associated with participation in Texas GEAR UP SG?
- How do trends in outcomes at the Texas GEAR UP SG schools differ in comparison to the state average and/or the comparison group schools?
- How do trends in outcomes for the Texas GEAR UP SG primary cohort students differ from the retrospective cohort?[10]
- Were there lasting effects at schools one to two years after Texas GEAR UP SG implementation was completed?
- How do trajectories of outcomes differ based on the length of time students attended Texas GEAR UP schools? For example, do students who participate in Texas GEAR UP SG activities in all grades differ compared to students who enter Texas GEAR UP SG schools at a later grade level?

Logic Model

The evaluation design was developed based on conceptualizing a logic model for how Texas GEAR UP SG might bring about change in student outcomes (see Figure 1.1). The logic model maps out the inputs, program activities (outputs), and intended outcomes of the program.

In the logic model, the first column on the left identifies the inputs for the program. These inputs are the existing conditions that students, parents, and schools had as they began participation in the Texas GEAR UP SG. Many of these inputs could not be changed by the program (e.g., socioeconomic status, gender, parental expectations).

Outputs indicate the extent to which individual students, parents, and teachers actually participate in Texas GEAR UP SG activities and the patterns of participation. Understanding what activities are implemented and the trends in participation are critical to understanding the potential effect of such participation on outcomes. These outputs are fully explored in the annual implementation reports.[11]

Finally, outcomes indicate the program's effects on students, parents, and teachers. In these reports, we primarily explore short-term and intermediate outcomes, such as successful completion of Algebra I by Grade 9, reaching the college-readiness indicators on STAAR EOC, and completion of AP courses. The goal is to improve long-term outcomes (e.g., enrollment and persistence in postsecondary education). The outcomes of specific interest for the final report explored two distinct topics: college readiness and on-time promotion/graduation.[12]

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[10] The retrospective cohort consists of students who attended GEAR UP schools the year prior to implementation. Follow-on cohorts attended the Texas GEAR UP SG schools one and two years after implementation.

[11] See https://tea.texas.gov/Reports_and_Data/Program_Evaluations/Middle_School_High_School_and_College_Preparation for each of these reports.

[12] See Appendix A.2 for a complete list of Texas GEAR UP SG project goals and objectives over the course of the 7-year grant.

Figure 1.1. Texas GEAR UP Evaluation Logic Model

Student Characteristics
- Number of students in Grade 7 primary cohort
- Economically Disadvantaged status (free/reduced lunch eligible)
- English language learner status
- Race/Ethnicity
- Gender
- Special education status
- At-risk status

Schools and Teachers
- 100% Title I district/campus graduation rate and annual dropout rate
- Teacher years of experience, degree

Parents/Community
- Parents' aspirations and expectations
- Parent/community education level
- Parent/community employment status

Program Implementation/Process/Activities
- Improve instruction and expand mathematics and science opportunities.
- Increase access to, and participation and success in, advanced academic programs.
- Provide strong student support services.
- Promote high school completion and college attendance.
- Provide professional development for differentiated instruction, vertical teaming, advanced instructional strategies, and project-based learning.
- Increase availability of postsecondary information and knowledge-building opportunities.
- Build and expand community collaborations.
- Promote college readiness statewide.

Outputs/Participation
- Number of students participating in mentoring, counseling, and/or tutoring programs
- Number of students enrolled in summer programs and institutes
- Number of school-based school completion and college attendance activities offered to students
- Number of high school college credit courses taken (e.g., advanced placement, dual credit, concurrent enrollment)
- Number and combination of professional development workshops participated in
- Number of state publications distributed regarding college options, preparation, and financing
- Number of participants in workshops and information sessions
- Number of new community collaborations

OUTCOMES

Short Term (Year 1 and Annually)
- Annual number/percentage of students in the primary cohort working at or above grade level
- Percentage of primary cohort enrolled in/completing pre-Algebra or equivalent; successful completion of Algebra I in Grade 8
- Annual number/percentage of students being promoted on time
- Student aspirations and expectations for postsecondary enrollment and financial literacy

- Annual student feedback (focus groups, interviews, or surveys) on the quality of interactions from mentoring, counseling, tutoring programs, and/or summer institutes

- Annual change in percentage of teachers and counselors completing college process training
- Annual change in number of vertical teams meetings across middle and high school
- Annual number of educators participating in GEAR UP professional learning

- Parent expectations and aspirations regarding postsecondary enrollment/success and financial literacy
- Annual parent attendance at workshops and information sessions
- Number of parents accessing resource sites
- Number/percentage of parents attending college awareness activities
- Annual number and type of community collaborations and alliances established

Intermediate (Years 2–5)
- Number/Percentage of students in the Primary cohort completing:*
  - Algebra I in Grade 9, pre-advanced placement, or advanced placement course
  - College credits
  - Progress on graduation plan
- Average scale score and number/percentage of Levels I, II, and III students on the State of Texas Assessments of Academic Readiness (STAAR) 7th, 8th, and end-of-course exams*
- Number/Percentage of students earning college credits*
- Percentage of students taking ACT Aspire, PSAT/NMSQT, PSAT-10, ACT, and SAT [a]
- Average ACT Aspire, PSAT/NMSQT, ACT, and SAT score*[a]

- Percentage of teachers in target districts and across the state trained through at least one Texas GEAR UP opportunity
- Parents' perceptions of the workshops and information sessions (focus groups, interviews, or surveys)
- Parents' expectations and aspirations regarding postsecondary enrollment/success and financial literacy

Long Term (Year 6+)
- Number of students meeting or exceeding the college-ready criterion on the ACT/SAT[a]
- Average number of college applications*
- Number/Percentage of the primary cohort completing high school on time Number/Percentage graduating with an endorsement or with distinguished level of achievement
- Number/Percentage of students in the primary cohort enrolled in postsecondary education in the fall following high school graduation, in the spring after high school graduation, and a second year after high school graduation*
- Number/Percentage of students in the primary cohort enrolled in college remediation courses (mathematics and English)*

Assumptions

Program Implementation/Process/Activities: The evaluation team assumes that processes and activities will change, will be ongoing, and will have varied effects on project outputs and outcomes. As program elements and activities are implemented, evaluators will identify specific expected outputs and short- and long-term outcomes. This process will continue during each stage of the project.

Outputs/Participation: Evaluators will monitor changes in outputs as a result of project processes and activities. We will also assess, to the extent possible, the relationship between changes in outputs and short- and long-term outcomes.

Short-Term and Long-Term Outcomes: Several outcomes will serve as annual measures of program success, including, for example, STAAR results, grade-level performance, and so forth. Items marked with an asterisk (*) will be compared to project goals, historical performance, matched comparison groups from like students and schools, or the state average performance on these measures. Successful attainment of short-term outcomes will also be considered in understanding successful completion of long-term outcomes.

[a] PSAT is the Preliminary SAT. ACT Aspire is the pre-ACT test. SAT and ACT are tests used for college admission.

Evaluation Design: Longitudinal and Quasi-Experimental

The external evaluation is a longitudinal design that spans seven years and follows a cohort model. The primary GEAR UP cohort includes students at the six Texas GEAR UP SG high schools to whom services were provided (see Appendix B, Section B.6.5 for additional cohort data cleaning details). The comparison school cohort consists of students attending six statistically similar schools that did not participate in Texas GEAR UP SG. Students in the retrospective cohort attended the Texas GEAR UP SG schools one year prior to the start of the grant. Students in the follow-on cohorts attended the Texas GEAR UP SG schools one and two years after implementation. Table 1.3 illustrates the timeline and grade levels associated with the Texas GEAR UP SG cohort (the primary cohort that the evaluation focuses on) across the grant period compared to the other cohorts of interest.

For this report, each cohort was followed from Grant Year 3 to 6, from Grades 9 to 12. In addition to comparing differences across cohort groups, outcomes for Texas GEAR UP SG primary cohort were also compared with state averages when possible. Additional details about the evaluation design and methods are provided as analyses are introduced and in Appendix B. In addition to comparisons of Texas GEAR UP SG primary cohort students' outcomes to students in the comparison and retrospective cohorts, relationships between participating in the program for various periods of time (i.e., length of time within the GEAR UP cohort), and academic outcomes were also examined.

Table 1.3. Evaluation Timeline: Grade in School by Grant Year by Cohort Group

Cohort Group	Pre Grant Award 2011 12	Grant Year 1 2012 13	Grant Year 2 2013 14	Grant Year 3 2014 15	Grant Year 4 2015 16	Grant Year 5 2016 17	Grant Year 6 2017 18	Grant Year 7 2018 19
Primary Cohort (Texas GEAR UP SG Schools)	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	First Year of College
Matched Comparison Schools	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	First Year of College
Retrospective Cohort (Texas GEAR UP SG Schools pre-award)	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	First Year of College	-
Follow-on Cohort 1 (Texas GEAR UP SG Schools)	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Follow-on Cohort 2 (Texas GEAR UP SG Schools)	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11

Comparison Groups

The evaluation report measures the impact of Texas GEAR UP SG by comparing outcomes of the Texas GEAR UP SG primary cohort in relation to state averages and three key comparison groups:

Comparison Schools Cohort: The six comparison schools were selected based on the similarity of students on demographic characteristics and on Grade 7 STAAR Mathematics scores to students in the Texas GEAR UP SG primary cohort (see Appendix B, Section B.2.1 for additional details). Schools in the primary cohort are labeled from School H to School M, and schools in the comparison cohort are labeled School N to School S.

As demonstrated in Table 1.4, despite the careful matching process performed prior to Year 3 (when students entered Grade 9), by the end of Year 6 (Grade 12), there were large statistically

significant differences between cohorts.[13] There was a higher percentage of students in the comparison cohort than the primary cohort who were classified as economically disadvantaged (87% versus 80%). There were fewer African American students (10% versus 14%) and more Hispanic students (83% versus 78%) in the comparison cohort. Finally, there were more EL students in the comparison cohort (18% versus 12%). Because of the lack of group equivalency, statistical models that take student characteristics into account are crucial to understanding of the effects of Texas GEAR UP SG. Without taking these student characteristics into account, outcome differences that are simply caused by group makeup could be mistakenly believed to be caused by program participation.

Table 1.4. Texas GEAR UP Primary Cohort and Comparison Cohort Key Demographics for Students Ever in Cohort, 2014–15 to 2017–18

Student Characteristic	Primary	Comparison	sig
Gender (Female)	46%	47%	ns
Race: African American	14%	10%	***
Ethnicity: Hispanic	78%	83%	***
Economically Disadvantaged	80%	87%	***
At Risk at Beginning of Grade 9	70%	68%	ns
English Learners	12%	18%	***
Number of Students	2933	3223	

Source. Texas Education Agency, Public Education Information Management System (PEIMS), 2015–2018.
Notes. Asterisks indicate the level of statistical significance for χ^2 analyses (sig): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. Students must have been enrolled in a Texas GEAR UP SG primary or comparison cohort high school in Grade 9, 10, 11, or 12 to be included in these analyses.

Retrospective Cohort: The retrospective cohort includes students in GEAR UP SG schools one year prior to the school receiving the Texas GEAR UP SG. For example, the Texas GEAR UP SG primary cohort group of students were in Grade 12 in 2017–18. The retrospective cohort students attended the same schools as the primary cohort but were in Grade 12 in 2016–17.

Given that the retrospective cohort students were from the same schools as the primary cohort, there were no expected significant demographic differences between the groups. However, two significant differences between groups were found (see Table 1.5). First, there were more female students in the primary cohort than the retrospective cohort. Second, there were more economically disadvantaged students in the retrospective cohort compared to the primary cohort. Although there were not as many differences between the primary cohort and the retrospective cohort as between the primary and comparison cohorts, the fact that there were still differences between the groups means that, as above, analyses that take these prior differences into account are crucial for understanding the true impact of Texas GEAR UP SG.

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[13] In using the term *significant* to discuss differences in this chapter, $p < .05$ was the minimum cut point for significance testing. This significance level means that, statistically, there is only a 5% chance that the amount of difference occurred due to chance alone. Asterisks in the tables represent the level of significance, with levels up to <0.1% or 1/1000.

Table 1.5. Texas GEAR UP Primary Cohort and Retrospective Cohort Key Demographics for Students Ever in Cohort, 2014–15 to 2017–18

Student Characteristic	Primary	Retrospective	sig
Gender (Female)	46%	41%	***
Race: African American	14%	12%	ns
Ethnicity: Hispanic	78%	69%	ns
Economically Disadvantaged	80%	86%	***
At Risk at Beginning of Grade 9	70%	68%	ns
English Learners	12%	11%	ns
Number of Students	2933	2164	

Source. Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018.
Notes. Asterisks indicate the level of statistical significance for χ^2 analyses (sig): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. Students must have been enrolled in a Texas GEAR UP SG high school in Grade 9, 10, 11, or 12 to be included in these analyses.

Follow-On Cohorts: The follow-on cohorts include students in GEAR UP SG schools who entered Grade 9 one or two years following Texas GEAR UP SG implementation (i.e., 2015–16 or 2016–17). Like students in the retrospective cohort, students in these cohorts did not directly participate in Texas GEAR UP SG. If sustained changes were made in schools as a result of Texas GEAR UP SG, students in the follow-on cohorts should have better outcomes than students in the retrospective cohort.

There were several notable demographic differences between the primary cohort and the two follow-on cohorts (see Table 1.6). There were significantly more economically disadvantaged students in the primary cohort than in the first follow-on cohort. Additionally, compared to the primary cohort, there were significantly fewer students who were classified as EL in the first follow-on cohort and significantly more students in the second follow-on cohort.

Table 1.6. Texas GEAR UP SG Primary Cohort and Follow-On Cohort Key Demographics for Students Ever in Cohort, 2014–15 to 2017–18

Student Characteristic	Primary	Primary versus Follow On 1		Primary versus Follow On 2	
		Follow On 1	sig	Follow On 2	sig
Gender (Female)	46%	46%	ns	46%	ns
Race: African American	14%	14%	ns	14%	ns
Ethnicity: Hispanic	78%	79%	ns	79%	ns
Economically Disadvantaged	80%	76%	***	81%	ns
At Risk at Beginning of Grade 9	70%	70%	ns	72%	ns
English Learners	12%	7%	***	16%	***
Number of Students	2933	2775		2553	

Source. Texas Education Agency, Public Education Information Management System (PEIMS), 2015–2018.
Notes. Asterisks indicate the level of statistical significance for χ^2 analyses (sig): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. Primary cohort students must have been enrolled in a Texas GEAR UP SG high school in Grade 9, 10, 11, or 12 to be included in these analyses. Follow-on 1 cohort students must have been enrolled in a Texas GEAR UP SG high school in Grade 9, 10, or 11 and Follow-on 2 cohort students must have been enrolled in a Texas GEAR UP SG high school in Grade 9 or 10 to be included in these analyses.

Limitations

Although the sample was carefully chosen to give the most robust examination of outcomes possible, there were four primary limitations identified that could present challenges to interpreting findings. These limitations are discussed below.

First, once students left a cohort school, data were not always available for outcomes, particularly if students did not then enroll in another public school in Texas. For example, if a student left the cohort in Grade 11, it was possible that graduation data or Grade 12 AP course completion data would not be available for that student. Of the 3353 students who were ever in the primary cohort, only 957 (29%) were in the cohort for all six years—there was significant

student mobility. Therefore, many of the analyses do not include all students ever served by Texas GEAR UP SG, but only a subset of students with data available. When a subset of data was used, it is noted in the tables accompanying the analysis.

Second, the large differences in student characteristic makeups of the primary cohort and the comparison and retrospective cohorts means that interpretation of any results that do not use these characteristics as covariates may be biased. There was a lower percentage of students classified as economically disadvantaged in the primary cohort (80%) than either the comparison or retrospective cohorts (87%) but more than in the first follow-on cohort (76%). Being economically disadvantaged has been shown to be a strong predictor of poorer academic performance for students, even when other variables (e.g., race/ethnicity, EL status) are controlled. To address this limitation, for each outcome, a covariate multilevel model (MLM) that does take into account all student characteristics as well as prior performance on STAAR was created. Results from the covariate MLM, therefore, should carry the most weight when interpreting the findings, and other analyses should be interpreted with caution.

Third, for purposes of this study, students were considered to be a part of the primary cohort if they ever received GEAR UP services. Students who were retained in the retrospective cohort thus became part of the primary cohort. Therefore, differences between the primary and retrospective cohort – especially those in the retrospective cohort's favor – may be partially due to the fact that the primary cohort contained some lower achieving students. Some of these differences are mitigated by including Grade 8 STAAR Reading score as a control in the covariate MLM, but there may be other factors that lead to student retention that are not measurable that are the true cause of the differences between the cohorts.

Finally, the design of the study in a quasi-experimental design, which cannot prove causality. That is, even when analyses are carefully controlled, we cannot be certain that participation in Texas GEAR UP SG actually caused any observed differences between cohorts. Models presented in this report control for factors that are measurable (i.e., collected by schools and reported to TEA) but other factors that are not measurable (e.g., student motivation, parental engagement) may also contribute to change. That is, it can only be said that Texas GEAR UP SG implementation was *associated* (or not) with differences in outcomes, and not that Texas GEAR UP SG implementation *caused* the changes.

Report Overview

In the next chapter, analyses of student outcomes are reported. We first provide descriptive statistics associated with each of the outcomes, to provide a foundation for the analyses that follow. Next, findings regarding outcomes in the Texas GEAR UP SG primary cohort are compared to statewide outcomes and cohort outcomes (i.e., comparison schools, retrospective). Then the report explores the longitudinal effects of the program by looking at changes in key outcomes for the retrospective through follow-on cohorts. Finally, the number of years in the Texas GEAR UP SG primary cohort as a predictive factor for better outcomes is analyzed.

Additional details about the methodology accompany each of the various models in the main text, and Appendix B contains a detailed summary of the analytic methods. A summary of findings is presented in Chapter 3, along with conclusions and recommendations. Appendix C has additional tables with data from non-significant findings that were excluded from the main body of the report.

2.   Student Outcomes

The overall goals of the federal GEAR UP program are improved college readiness and increased postsecondary education enrollment (see Appendix A.2 for a list of all Texas GEAR UP SG project goals and objectives). In this chapter, progress toward these goals and success in meeting project objectives along the way, is tracked by analyzing specific student outcomes. After describing the outcomes, associations between outcomes and student characteristics are measured. Then, differences between student outcomes and cohort are analyzed. Next, long-term outcome changes at Texas GEAR UP schools are assessed. Finally, the impact of the length of time students spent in the cohort is examined.

Analysis Overview

To assess the impact of Texas GEAR UP SG on high school outcomes, a series of analyses were conducted in a stepwise fashion. Following is a high-level overview of the content of each of the following sections in this chapter. See Appendix B for more details on analyses, including cohort construction and statistical methodology. Findings in this report may differ from the implementation reports due to differences in data availability and cohort processing rules.

- Section 2.2, Student Outcome Overview, describes each outcome and provides a rationale for why the outcome was examined and how data was selected for the outcome.
- Section 2.3, Student Outcomes by Student Characteristics examines the role of student characteristics (e.g., gender, EL) on each outcome. General descriptive data (e.g., means) and basic statistical comparisons between groups (i.e., chi-squared analyses) are presented in this section.
- Section 2.4, Student Outcomes by Cohort compares each outcome (e.g., Algebra I completion by Grade 9) for the primary cohort and the comparison and retrospective cohorts in turn. Each sub-section is arranged as follows:
  - General descriptive data (e.g., means) and basic statistical comparisons between groups (e.g., t-tests). These basic descriptive statistics provide a context for the subsequent analyses.
  - MLM models. Two MLM models were conducted for each area of analysis. First, a main effects MLM was conducted to see if differences between groups could be explained by their unique school environment. Second, a covariate MLM adds student characteristic variables (e.g., gender) and prior academic performance (i.e., Grade 8 STAAR Reading Scale Score) to help determine which outcomes were affected by program participation and which are explained by considering known aspects of the students.
- Section 2.5, Lasting Effects of Participation. In this section, we examine several outcomes of interest longitudinally, looking at change over time within schools as a result of the Texas GEAR UP SG. Specifically, we examine change from the retrospective cohort (pre-grant) through the follow-on cohorts (one- and two-years post-grant).
- Section 2.6, Length of Time in Cohort. In this section, we examine the impact of being in the cohort for different amounts of time (from one to six years) on outcomes, theorizing that students who were in the cohort for longer, and thus experienced more Texas GEAR UP SG services would have better outcomes than students who participated for a shorter length of time.

Appendices A and B provide a more detailed and complete overview of the evaluation and the analyses. Appendix C provides tables with additional details on the findings reported as referenced throughout the chapter.

Student Outcome Overview

This chapter's focus is on two categories of academic outcomes: college readiness and on-time promotion/graduation. A list of the outcomes, and how they are measured, follows. Each outcome also includes the requirements to be included in the analytic sample. Because student data is often incomplete for students who move in and out of schools, students must have been enrolled at a school and have attended enough days to be considered part of a cohort (either primary, comparison, retrospective or follow-on) to be included. See Appendix B, section B.6.5 for all cohort processing rules.

College Readiness: Advanced Course Completion

- **Algebra I completion (by Grade 8)**. Project Objective 1.1 states that by the end of the second year of the grant, 30% of cohort students will have completed Algebra I. Hutson et al. (2018) found Texas GEAR UP primary cohort students met this goal and were more likely than students in the comparison or retrospective cohort to have students complete Algebra I by Grade 8.[14] Because it has been measured before, this outcome will only be examined for the follow-on cohorts in this report. To be included in the analytic sample, students must have been in their cohort in Grade 8.
- **Algebra I completion (by Grade 9).** Project Objective 1.1 also states that by the end of the third year of the grant, 85% of primary cohort students will have completed Algebra I. Students must have been a part of their cohort in both Grade 8 and 9 to be included in the sample.
- **Algebra II completion (by Grade 12).** Project Goal 1 is to improve instruction and expand academic opportunities in mathematics and science, and Project Goal 4 is to provide a network of strong student support services to promote on-time promotion and academic preparation for college. One measure of progress toward this goal is the percentage of students who completed Algebra II by the end of Grade 12. Students were required to be in the GEAR UP cohort in Grades 9, 10, 11 and 12 to be part of these analyses.
- **AP course completion.** Project Objective 2.2 states that by the end of the project's fifth year (i.e., Grade 11) 60% of the cohort, EL students will have completed a pre-AP or AP course, and Project Objective 2.3 states that, by the end of the project's sixth year (i.e., Grade 12) 50% of students will have received college credit earned by an AP exam or through dual credit. Information on pre-AP course completion and credit received through AP exams was not available for this analysis. Therefore, the number of AP courses completed and the percentage of students completing at least one AP course by Grade 12 served as a proxy for these outcomes. Students were required to be in the GEAR UP cohort in Grades 9, 10, 11, and 12 to be a part of this sample.
- **Completion of college credit hours via dual credit enrollment.** Project Objective 2.3 states that, by the end of the project's sixth year (i.e., Grade 12) 50% of students will have received college credit earned by an AP exam or through dual credit. The percentage of students who completed at least one dual credit course. Students were required to be in the GEAR UP cohort in Grades 9, 10, 11, and 12 to be included in these analyses.

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[14] See TEA's Public Education Information Management System (PEIMS) standards for additional information https://tea.texas.gov/Reports_and_Data/Data_Submission/PEIMS/PEIMS_Data_Standards/PEIMS_Data _Standards/. It is possible for students to have passed a course but not receive credit, for example due to excessive absences. For students to be considered to be Algebra I completers, they must have received credit for the course. The same requirement is true for all other courses examined (Algebra II, AP, and dual credit).

College Readiness: STAAR End-of-Course (EOC) Achievement.

Project Objective 4.4 states that, by the end of the project's fifth year (i.e., Grade 11 for the primary cohort), 70% of students will demonstrate necessary academic preparation for college, and Project Objective 5.3 states that the percentage of students who graduate postsecondary ready in mathematics and English will meet or exceed the state average.

STAAR EOC outcomes were categorized by two achievement standards. The first standard was Approaches Grade Level standard. Students who are classified as meeting this standard passed the assessment. Passing standards changed over the course of the grant. Students taking STAAR assessments from 2012 to 2015 were held to the Level II Phase-in 1 standard. In 2015-16, a standard progression approach was applied to the performance standards to allow for annual, consistent, incremental improvements, which required 25 to 50 more scale score points to meet the passing standard (depending on the assessment).[15] Then in 2017, the standard stayed the same but was renamed Approaches Grade Level performance standard. For consistency, this is the label used throughout this paper although the label and standard may have changed. See Table 2.1 for the scale scores needed to reach each level on STAAR EOCs.

It is important to note that because of the changes in the Approaches Grade Level standard over time, some students taking an assessment might have been held to a slightly harder standard to pass the exam than others. This is particularly relevant for the comparisons between the primary and retrospective cohorts. Areas where a significant proportion of students were held to different standards will be highlighted in the text.

The second standard was Meets Grade Level standard, which serves in this report as indicative that the student was on track for college and career readiness.[16] This standard was known in previous years as the Level II final standard. Unlike Approaches Grade Level standard, the scale score required to achieve Meets Grade Level standard did not change over time. Students were required to have taken the STAAR EOC assessment for the first time with a valid score code to be included in the analyses for both standards.

Table 2.1 STAAR End-Of-Course (EOC) Passing Standards

EOC	Approaches		Meets
	2012−2015	2016−2018	2012−2018
Algebra I	3500	3550	4000
Biology	3500	3550	4000
English I	3750	3775	4000
English II	3750	3775	4000
U.S. History	3500	3550	4000

Source. State of Texas Assessments of Academic Readiness End-of-Course Assessments Performance Standards, https://tea.texas.gov/student.assessment/staar/performance-standards/

The five STAAR EOC's examined and the grades they are typically taken for the first time are:

- Algebra I (Grade 8 or 9)
- English I (Grade 9)
- English II (Grade 10)
- Biology (Grade 9)
- U.S. History (Grade 11)

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[15] http://tea.texas.gov/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=25769825110&libID=25769825206
[16] Level II at the final standard from 2012 to 2016

On-time Promotion and Graduation

- **On-time promotion from Grade 9 to Grade 10**. Project Objective 4.3 states that by the end of the project's third year (i.e., between Grade 9 and Grade 10), the on-time promotion rate of cohort students will exceed the state average. This outcome is based on enrollment in Grade 9 the prior year (e.g., 2014–15) and in Grade 10 the subsequent year (e.g., 2015–16). Students were required to be a part of their cohort in Grade 9 to be included in these analyses.
- **On-time graduation**. Project Objective 5.4 says that by the end of the project's sixth year (i.e., Grade 12), Texas GEAR UP SG cohort completion will meet or exceed the state average. This outcome is measured by examining graduation data from PEIMS. Students were required to be a part of their cohort in Grade 12 or to have graduated in a prior year to be included in these analyses.
- **Graduation with the Foundation High School Program plus endorsement or the distinguished level of achievement**. Project Objective 1.2 states that the percentage of students graduating on the Foundation High School Program or at the distinguished level of achievement will meet or exceed the state average. Students were required to be a part of their cohort in Grade 12 or to have graduated in a prior year to be included in these analyses.

Student Outcomes by Student Characteristics

Students within each school were grouped on the following student characteristics:[17]

- Gender
- Race/Ethnicity[18] (African American, Hispanic, White)[19]
- Economically Disadvantaged
- At-Risk at the Beginning of Year in Grade 9
- EL[20]

Each of the 18 student outcomes described in Section 2.2 is examined in the student characteristic subsection. Analyses compared the percentage or mean of students achieving the outcome in one category to those of the other category.

Gender

There was a significant difference between males and females for 14 of the 18 student outcomes, with females outperforming males on 78% of the outcomes and males outperforming females on just one outcome (6%) (see Table 2.2).

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[17] Data standards 2015–16 and onward are located here: https://www.texasstudentdatasystem.org/TSDS/TEDS/TEDS_Latest_Release and data standards for 2014–15 are located here: https://tea.texas.gov/Reports_and_Data/Data_Submission/PEIMS/PEIMS_Data_Standards/2014-2015_Data_Standards/.

[18] The data received by ICF for the purposes of this report includes data TEA combined from a two-part question (on Hispanic ethnicity and race) to create a race/ethnicity variable that prioritizes Hispanic ethnicity and only allows students to have one racial category. This means that students who were both African American and Hispanic, White and Hispanic, or another race (e.g., Asian) and Hispanic were all coded only as Hispanic.

[19] There were not enough members of other racial/ethnic groups (e.g., Asian, Multiracial) within each of the schools to be included in the analysis.

[20] Students are identified in TEA PEIMS as Limited English Proficient but are labeled as EL in this report.

Females were more likely than males to complete advanced courses. They completed Algebra I by Grade 9 (74% versus 65%) and Algebra II by Grade 12 (86% versus 77%) at higher rates than males. More than half of females completed at least one AP course by Grade 12, completing 1.8 courses, on average. Only 40% of males completed at least one AP course, on average completing 1.3 courses. Double the percentage of females (4%) earned college credit through dual credit enrollment than males (2%).

A larger proportion of females achieved both the Approaches Grade Level and Meets Grade Level standards for the English I and English II EOCs. More females reached the Approaches Grade Level standard than males on Biology (85% versus 79%), and Algebra I (72% versus 64%). More males reached the Meets Grade Level standard on U.S. History than females, however (53% versus 40%).

Females were promoted from Grade 9 to Grade 10 at higher rates than males (86% versus 80%). Females also graduated on time at higher rates (95% versus 91%) and graduated more often with the Foundation High School Program and an endorsement or at the distinguished level of achievement (68% versus 62%).

		Percentage or Mean		# of Students in Analysis		Statistical Test Results	
	Outcomes	Female	Male	Female	Male	t or χ^2	sig
Advanced Course Completion	Algebra I by Grade 9	74%	65%	2339	2400	46.24	***
	Algebra II by Grade 12	86%	77%	1727	1796	42.62	***
	At Least One AP Course	55%	40%	1727	1796	69.88	***
	Number of AP Courses Completed	1.8	1.3	1727	1796	7.32	***
	At Least One Dual Credit Course	4%	2%	1727	1796	6.92	**
STAAR End-of-Course Achievement	Algebra I Approaches Grade Level	72%	64%	2432	2709	34.15	***
	Algebra I Meets Grade Level	20%	18%	2432	2709	3.3	ns
	English I Approaches Grade Level	56%	41%	2793	3069	134.04	***
	English I Meets Grade Level	34%	22%	2793	3069	110.49	***
	English II Approaches Grade Level	56%	41%	2502	2841	119.76	***
	English II Meets Grade Level	33%	21%	2502	2841	91.37	***
	Biology Approaches Grade Level	85%	79%	2640	2834	32.69	***
	Biology Meets Grade Level	34%	34%	2640	2834	0	ns
	U.S. History Approaches Grade Level	85%	86%	2252	2455	0.66	ns
	U.S. History Meets Grade Level	40%	53%	2252	2455	83.36	***
Promotion & Graduation	On-time Promotion Grade 9 to Grade 10	86%	80%	3056	3497	40.62	***
	On-time Graduation	95%	91%	2251	2484	24.1	***
	Graduation with Foundation High School Program + Endorsement or DLA	68%	62%	2084	2183	17.91	***

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency. State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. Cells are shaded to indicate which group had a more favorable outcome when the statistical test was significant. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. All analyses were χ^2 except for "Number of AP Courses Completed", which was a t-test. DLA = distinguished level of achievement. This table and associated analyses include students in the primary, comparison, and retrospective cohorts.

Ethnicity: Hispanic

Differences were examined between ethnicities beginning with comparisons for students who were classified as Hispanic to students who were not classified as Hispanic (see Table 2.3). Hispanic students outperformed students who were not classified as Hispanic for seven of the 18 outcomes (39%). They had lower achievement on four outcomes (22%).

Hispanic students were more likely to complete Algebra I by Grade 9 than students who were not Hispanic (70% versus 66%). Additionally, they were also more likely to complete an AP course (48% versus 43%), and they completed more AP courses on average (1.6 versus 1.3). However, students not classified as Hispanic were three times more likely to earn credit via dual-credit course completion than Hispanic students (6% versus 2%).

Hispanic students were more likely to Approach the standard for Algebra I by Grade 9 (68% versus 64%) Biology EOC (82% versus 79%) but were less likely to Meet the standard for English I (27% versus 31%) and English II (26% versus 30%). In terms of promotion and graduation, Hispanic students were less likely than students not classified as Hispanic to be promoted from Grade 9 to Grade 10 on time (82% versus 85%). However, they were more likely to graduate on time (93% versus 91%) and to graduate on the Foundation High School Program plus endorsement or at the distinguished level of achievement (66% versus 60%).

Table 2.3. Outcomes by Student Characteristics: Ethnicity: Hispanic versus Non-Hispanic

	Outcomes	Hispanic %/Mean	Not Hispanic %/Mean	Hispanic #	Not Hispanic #	t or χ^2	sig
Advanced Course Completion	Algebra I by Grade 9	70%	66%	3855	884	5.78	*
	Algebra II by Grade 12	82%	81%	2909	614	0.14	ns
	At Least One AP Course	48%	43%	2909	614	5.17	*
	Number of AP Courses Completed	1.6	1.3	2909	614	2.74	**
	At Least One Dual Credit Course	2%	6%	2909	614	21.91	***
STAAR End-of-Course Achievement	Algebra I Approaches Grade Level	68%	64%	4191	950	5.55	*
	Algebra I Meets Grade Level	19%	17%	4191	950	2.33	ns
	English I Approaches Grade Level	47%	50%	4759	1103	2.93	ns
	English I Meets Grade Level	27%	31%	4759	1103	6.7	*
	English II Approaches Grade Level	48%	49%	4324	1019	0.01	ns
	English II Meets Grade Level	26%	30%	4324	1019	7.23	**
	Biology Approaches Grade Level	82%	79%	4437	1037	4.46	*
	Biology Meets Grade Level	33%	36%	4437	1037	2.78	ns
	U.S. History Approaches Grade Level	86%	84%	3810	897	2.04	ns
	U.S. History Meets Grade Level	47%	47%	3810	897	0.05	ns
Promotion & Graduation	On-time Promotion Grade 9 to 10	82%	85%	5316	1237	5.78	*
	On-time Graduation	93%	91%	3872	863	5.67	*
	Graduation with Foundation High School Program + Endorsement or DLA	66%	60%	3502	765	8.3	**

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency. State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. Cells are shaded to indicate which group had a more favorable outcome when the statistical test was significant. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. All analyses were χ^2 except for "Number of AP Courses Completed", which was a t-test. DLA = distinguished level of achievement

Race: African American

Differences were examined between students who were classified as African American and not African American. Overall, African American students had poorer outcomes than students of

other races/ethnicities on 14 of 18 areas (78%) and similar outcomes on the remaining four (22%) outcomes (see Table 2.4).

Although fewer African American students completed Algebra I by Grade 9 (60% versus 70%) compared to students who were not African American, they completed Algebra II at similar rates. They were less likely to complete at least one AP course (38% versus 49%) and completed fewer AP courses (1.2 versus 1.6) than students who were not African American. They had lower rates of meeting both sets of standards for all five STAAR EOC assessments. Although African American students had similar rates of promotion from Grade 9 to 10 and similar graduation rates, they were less likely to graduate under the Foundation High School Program plus endorsement or at the distinguished level of achievement than students who were not African American (57% versus 66%).

Table 2.4. Outcomes by Student Characteristics: Race: African American versus Students of Other Races

	Outcomes	African American % / Mean	Other Races %/Mean	African American #	Other Races #	t or χ^2	Sig
Advanced Course Completion	Algebra I by Grade 9	60%	70%	570	4169	23.05	***
	Algebra II by Grade 12	78%	82%	386	3137	3.41	ns
	At Least One AP Course	38%	49%	386	3137	15.52	***
	Number of AP Courses Completed	1.2	1.6	386	3137	3.79	***
	At Least One Dual Credit Course	4%	3%	386	3137	0.58	ns
STAAR End-of-Course Achievement	Algebra I Approaches Grade Level	56%	69%	617	4524	42.27	***
	Algebra I Meets Grade Level	9%	20%	617	4524	40.13	***
	English I Approaches Grade Level	43%	49%	720	5142	7.67	**
	English I Meets Grade Level	23%	28%	720	5142	6.34	*
	English II Approaches Grade Level	40%	50%	647	4696	20.08	***
	English II Meets Grade Level	22%	28%	647	4696	9.77	**
	Biology Approaches Grade Level	74%	83%	665	4809	29.51	***
	Biology Meets Grade Level	25%	35%	665	4809	25.67	***
	U.S. History Approaches Grade Level	80%	86%	564	4143	13.76	***
	U.S. History Meets Grade Level	38%	48%	564	4143	18.74	***
Promotion & Graduation	On-time Promotion Grade 9 to 10	83%	83%	793	5760	0.07	ns
	On-time Graduation	91%	93%	525	4210	2.42	ns
	Graduation with Foundation High School Program + Endorsement or DLA	57%	66%	469	3798	15.12	***

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency. State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.
Notes. Cells are shaded to indicate which group had a more favorable outcome when the statistical test was significant. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. All analyses were χ^2 except for "Number of AP Courses Completed", which was a t-test. DLA = distinguished level of achievement. **Racial groups (e.g., African American and White) do not include students of Hispanic ethnicity.**

Race: White

The final race/ethnicity comparisons were for students classified as White and those who were of other racial backgrounds. White students had better outcomes than students of other races on 13 of 18 areas (72%), similar outcomes on the remaining five areas (28%) (see Table 2.5).

White students were more likely to complete Algebra I than students of other races (78% versus 69%) and were more likely to complete at least one dual credit course by Grade 12 (8% versus 3%). However, they had similar rates of completion for Algebra II and AP courses.

A higher proportion of White students met the standards for all of the STAAR EOC assessments compared to students of other races. They were more likely to be promoted on-time from Grade 9 to 10 on time than students of other races (90% versus 82%) but were equally as likely to graduate on time or under the Foundation High School Program plus endorsement or at the distinguished level of achievement.

Table 2.5. Outcomes by Student Characteristics: Ethnicity: White versus Students of Other Races

	Outcomes	White %/Mean	Other Races %/Mean	White #	Other Races #	t or χ^2	sig
Advanced Courses Completion	Algebra I by Grade 9	78%	69%	260	4479	9.84	**
	Algebra II by Grade 12	85%	81%	184	3339	1.13	ns
	At Least One AP Course	50%	47%	184	3339	0.42	ns
	Number of AP Courses Completed	1.5	1.5	184	3339	0.19	ns
	At Least One Dual Credit Course	8%	3%	184	3339	14.53	***
STAAR End-of-Course Achievement	Algebra I Approaches Grade Level	80%	67%	278	4863	19.87	***
	Algebra I Meets Grade Level	31%	18%	278	4863	26.81	***
	English I Approaches Grade Level	66%	47%	309	5553	41.9	***
	English I Meets Grade Level	45%	27%	309	5553	47.51	***
	English II Approaches Grade Level	67%	47%	297	5046	41.42	***
	English II Meets Grade Level	48%	26%	297	5046	69.47	***
	Biology Approaches Grade Level	89%	81%	305	5169	10.56	**
	Biology Meets Grade Level	57%	33%	305	5169	76.11	***
	U.S. History Approaches Grade Level	91%	85%	265	4442	6.45	*
	U.S. History Meets Grade Level	65%	46%	265	4442	33.5	***
Promotion & Graduation	On-time Promotion Grade 9 to 10	90%	82%	362	6191	14.31	***
	On-time Graduation	91%	93%	265	4470	1.75	ns
	Graduation with Foundation High School Program + Endorsement or DLA	65%	65%	232	4035	0	ns

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency. State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. Cells are shaded to indicate which group had the more favorable outcome when the statistical test was significant. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. All analyses were χ^2 except for "Number of AP Courses Completed", which was a t-test. DLA = distinguished level of achievement. **Racial groups (e.g., African American and White) do not include students of Hispanic ethnicity.**

Economically Disadvantaged Status

Outcomes were examined for students classified as economically disadvantaged and students not classified as economically disadvantaged. Students were considered economically disadvantaged if they qualified for a free or reduced-price lunch. There were large differences between students classified as economically disadvantaged and students not classified as economically disadvantaged– economically disadvantaged students had poorer outcomes on 16 of the 18 outcomes (89%) (see Table 2.6).

Students identified as economically disadvantaged completed advanced courses at lower rates than students not identified as economically disadvantaged. They were less likely to meet the standards for all five EOC assessments. They were less likely to graduate under the Foundation High School Program plus endorsement or at the distinguished level of achievement (64% versus 69%). However, they were just as likely to be promoted and to graduate on-time as students who were not classified as economically disadvantaged.

Table 2.6. Outcomes by Student Characteristics: Economically Disadvantaged vs not Economically Disadvantaged

	Outcomes	Econ. Disad. %/Mean	Non Econ. Disad. %/Mean	Econ. Disad. #	Non Econ. Disad. #	t or χ^2	Sig
Advanced Course Completion	Algebra I by Grade 9	68%	74%	4114	625	6.93	**
	Algebra II by Grade 12	81%	85%	3017	506	5.45	*
	At Least One AP Course	46%	54%	3017	506	9.27	**
	Number of AP Courses Completed	1.5	1.7	3017	506	1.99	ns
	At Least One Dual Credit Course	2%	7%	3017	506	29.61	***
STAAR End-of-Course Achievement	Algebra I Approaches Grade Level	66%	74%	4433	708	17.65	***
	Algebra I Meets Grade Level	18%	24%	4433	708	17.78	***
	English I Approaches Grade Level	46%	61%	5039	823	62.26	***
	English I Meets Grade Level	26%	38%	5039	823	56.79	***
	English II Approaches Grade Level	47%	58%	4546	797	36.9	***
	English II Meets Grade Level	25%	38%	4546	797	56.54	***
	Biology Approaches Grade Level	81%	86%	4687	787	11.85	**
	Biology Meets Grade Level	32%	47%	4687	787	71.16	***
	U.S. History Approaches Grade Level	85%	89%	3963	744	10.1	**
	U.S. History Meets Grade Level	46%	56%	3963	744	24.69	***
Promotion & Graduation	On-time Promotion Grade 9 to 10	82%	84%	5639	914	1.9	ns
	On-time Graduation	93%	94%	4010	725	1.45	ns
	Graduation with Foundation High School Program + Endorsement or DLA	64%	69%	3603	664	6.5	*

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency. State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. Cells are shaded to indicate which group had the better outcome when the statistical test was significant. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. All analyses were χ^2 except for "Number of AP Courses Completed", which was a t-test. DLA = distinguished level of achievement. Econ. Disad. = Economically Disadvantaged

At-Risk

The next outcome examined was at-risk status at the beginning of Grade 9. Students are classified as at-risk for a number of reasons including behavior (e.g., expelled or on parole), academic performance (e.g., not being promoted on time, having failing grades in two or more core subjects for one semester), home status (e.g., being homeless, residing in a residential placement facility, or foster group home).[21] There was a large number of students who did not have a classification as being at-risk or not at-risk in the data set; these students were excluded from these analyses.

Unsurprisingly, students who were identified as at-risk at the beginning of Grade 9 had poorer outcomes than students who were not classified as at-risk. These were the largest differences between student groups that were observed. At-risk students were less likely to complete advanced courses, meet the standards on STAAR EOCs, to be promoted on time from Grade 9 to 10, to graduate on time, and to graduate under the Foundation High School Program plus endorsement or at the distinguished level of achievement (see Table 2.7).

	Outcomes	At Risk %/Mean	Not At Risk %/Mean	At Risk #	Not At Risk #	t or χ^2	Sig
Table 2.7. Outcomes by Student Characteristics: At-Risk at Beginning of Grade 9 vs Not At-Risk							
Advanced Course Completion	Algebra I by Grade 9	65%	78%	3050	1650	79.78	***
	Algebra II by Grade 12	77%	89%	2122	1386	80.57	***
	At Least One AP Course	37%	63%	2122	1386	233.76	***
	Number of AP Courses Completed	1.0	2.3	2122	1386	15.82	***
	At Least One Dual Credit Course	2%	5%	2122	1386	29.82	***
STAAR End-of-Course Achievement	Algebra I Approaches Grade Level	11%	39%	3409	1479	309.81	***
	Algebra I Meets Grade Level	36%	77%	3409	1479	529.98	***
	English I Approaches Grade Level	15%	56%	3680	1858	846.63	***
	English I Meets Grade Level	39%	77%	3680	1858	1053.31	***
	English II Approaches Grade Level	15%	56%	3039	1541	595.9	***
	English II Meets Grade Level	76%	95%	3039	1541	845.45	***
	Biology Approaches Grade Level	21%	61%	3401	1817	285.39	***
	Biology Meets Grade Level	83%	95%	3401	1817	847.84	***
	U.S. History Approaches Grade Level	36%	73%	2479	1379	124.51	***
	U.S. History Meets Grade Level	80%	94%	2479	1379	486.99	***
Promotion & Graduation	On-time Promotion Grade 9 to 10	94%	97%	4336	1984	187.59	***
	On-time Graduation	63%	69%	2319	1450	16.62	***
	Graduation with Foundation High School Program + Endorsement or DLA	62%	70%	2129	1396	15.57	***

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency. State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.
Notes. Cells are shaded to indicate which group had the more favorable outcome when the statistical test was significant. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. All analyses were χ^2 except for "Number of AP Courses Completed", which was a t-test. DLA = distinguished level of achievement

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[21] see footnote 10 on p.7 for all criteria

English Learners

Finally, differences between students learning English (English Learners, or ELs) were examined. Similar to students classified as at risk and those identified as economically disadvantaged, students identified as EL had poorer outcomes on the majority (16 of 18 or 89%) of areas and similar outcomes in just two areas (11%) (see Table 2.8). ELs were less likely to complete Algebra I by Grade 9 or Algebra II by Grade 12. They were also less likely to complete an AP course. However, there were no differences in completion of dual credit courses. Students identified as EL had much poorer performance on STAAR EOCs than students not identified as EL. For example, only 14% of EL students achieved the Approaches Grade Level standard for English I, compared to 54% of non-EL students. EL students were less likely to be promoted on time from Grade 9 to 10 and to graduate on time. However, there were no differences in the percentage of students who graduated under the Foundation High School Program plus endorsement or at the distinguished level of achievement.

Table 2.8 Outcomes by Student Characteristics: ELs vs non-ELs

	Outcomes	EL %/Mean	Non EL %/Mean	EL #	Non EL #	t or χ^2	Sig
Advanced Course Completion	Algebra I by Grade 9	62%	70%	536	4203	12.88	***
	Algebra II by Grade 12	77%	82%	392	3131	5.63	*
	At Least One AP Course	30%	50%	392	3131	53.74	***
	Number of AP Courses Completed	0.7	1.6	392	3131	11.44	***
	At Least One Dual Credit Course	2%	3%	392	3131	3.13	ns
STAAR End-of-Course Achievement	Algebra I Approaches Grade Level	51%	70%	750	4391	114.27	***
	Algebra I Meets Grade Level	10%	20%	750	4391	43.85	***
	English I Approaches Grade Level	14%	54%	837	5025	440.53	***
	English I Meets Grade Level	4%	31%	837	5025	272.57	***
	English II Approaches Grade Level	15%	54%	753	4590	379.7	***
	English II Meets Grade Level	4%	31%	753	4590	236.97	***
	Biology Approaches Grade Level	60%	85%	759	4715	273.66	***
	Biology Meets Grade Level	9%	38%	759	4715	235.75	***
	U.S. History Approaches Grade Level	67%	88%	587	4120	188.33	***
	U.S. History Meets Grade Level	23%	51%	587	4120	159.69	***
Promotion & Graduation	On-time Promotion Grade 9 to 10	74%	84%	897	5656	46.97	***
	On-time Graduation	90%	93%	591	4144	7.35	**
	Graduation with Foundation High School Program + Endorsement or DLA	65%	65%	517	3750	0	ns

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency. State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. Cells are shaded to indicate which group had the more favorable outcome when the statistical test was significant. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. All analyses were χ^2 except for "Number of AP Courses Completed", which was a t-test. DLA = distinguished level of achievement

Section Summary

In this section, all of the academic outcomes for students were examined by student characteristic. There were several characteristics that had particularly strong differences. First, students who were classified as at-risk at the beginning of Grade 9 were much less likely to take advanced courses, meet both of the standards on STAAR EOC, and be promoted or graduate on time than students who were not at-risk. Differences between at-risk and not at-risk students were of the largest magnitude and statistical test results were the strongest (with all tests having p-values of <.001).

Two other areas that were strong predictors of underachievement were economic disadvantage (students classified as economically disadvantaged had poorer outcomes than non-disadvantaged students in all areas but on-time graduation and promotion) and EL status (students identified as EL had poorer outcomes than non-EL students in all areas but the percentage receiving dual credit and graduating under the Foundation high school program plus endorsement or at a distinguished level of achievement).

Gender and race/ethnicity were related to some outcomes, although the relationship was weaker than the first two areas. In terms of gender, females had better outcomes than males on 14 of 18 areas and poorer outcomes on one area (U.S. History Meets Grade Level standard). Female students were more likely to complete advanced courses, to be promoted / graduate on time, and to achieve both of the grade-level standards for the majority of STAAR EOC assessments (the exceptions being both standards for U.S. History and Meets Grade Level standard for Biology).

African American students were less likely to meet the grade-level standards for all STAAR EOCs and were less likely to complete AP courses and Algebra I by Grade 9. White students were more likely to meet both of the grade-level standards for all STAAR EOCs, to complete dual credit courses, to complete Algebra I by Grade 9, and to be promoted on time than students of other races.

Hispanic students had the most mixed results: they were more likely than students not classified as Hispanic to achieve the Approaches Grade Level standard for Algebra I and Biology, but less likely to achieve Meets Grade Level standard for English I and II. They were more likely to complete Algebra I by Grade 9 and to complete AP courses, but were less likely to complete dual credit courses. They were less likely to be promoted on time but were more likely to graduate on time and with the Foundation High School Program plus endorsement or at the distinguished level of achievement.

The differences found in this section make a strong argument for including these student characteristics as covariates when comparing outcomes by cohort in Section 2.4.

Student Outcomes by Cohort

One of the primary goals of the evaluation of Texas GEAR UP SG is to understand if participation in Texas GEAR UP SG improved student outcomes. In this section of the report, differences between cohort groups on outcomes are examined. Outcomes in this section are measured in three stages. First, overall differences between group means are presented. Next, two MLMs are conducted. The first (MLM main model) groups students by school to account for each school's unique environment. The second (MLM covariate model) adds student characteristics (e.g., gender, EL) and prior academic performance. In this report, prior academic performance is approximated by using students' Grade 8 STAAR Reading scores. Grade 8 STAAR Reading was used because it was taken prior to students entering high school and because there was more data available for all students (some students who took Algebra I in Grade 8 did not take the Grade 8 STAAR Mathematics assessment). Analyses of the current

data set indicated the correlation between Grade 8 STAAR Reading and Grade 8 STAAR Mathematics was 0.57, which indicates a medium level of correspondence between the two.

As a reminder, because of student characteristic differences between the cohorts discussed in Section 1.3, the covariate MLM model should carry the most weight when interpreting findings, as it is the only model that controls for school, prior academic performance, and student characteristics. Tables for outcomes in which the cohort variable in the covariate MLM was significant are presented in the text. If the cohort variable was not significant, the relevant table is located in Appendix C. For more information on the analyses used in this report, see Appendix B.

Advanced Course Completion

The first set of outcomes explored were related to completing advanced courses. Student completion of Algebra I by Grade 9 and Algebra II by Grade 12 are first explored, followed by completion of AP courses and college credit earned via dual credit enrollment.

ALGEBRA I COMPLETION BY GRADE 9

Project Objective 1.1 states that, by Grade 9, at least 85% of cohort students will have completed Algebra I. Algebra I completers were defined as students who received credit for Algebra I by Grade 9. The set of non-completers includes both students who did not take Algebra I and those who took Algebra I but did not receive credit. To be included in the analysis, students must have been a part of their respective cohorts in Grade 8 and Grade 9.

In the primary cohort, only 71% of students completed Algebra I by Grade 9, missing Project Objective 1.1 by a large degree. At the campus level, there were large differences in Algebra I course completion, ranging from 51% to 84%. Notably, no campus met Objective 1.1.[22]

Comparison Cohort. At the group level, there were no differences between the primary cohort and the comparison cohort in terms of Algebra I completion. At the campus level, in the comparison cohort, the range of completion was 61% to 91% Cohort group was not a significant predictor in the main or covariate MLMs; that is, once school-level differences, prior STAAR performance and demographic characteristics were taken into account, there were no significant differences between groups. Females, students with higher Grade 8 STAAR Reading scores, and those who were not classified at-risk were more likely to have completed Algebra I by Grade 9 (see Table C.1, Appendix C).

Retrospective Cohort. There was a small difference in completion rates between students in the primary and retrospective cohorts. Overall, 71% of students in the primary cohort, compared to 66% of students in the retrospective cohort, completed Algebra I by Grade 9. As with the other cohorts, there was a large difference in completion by school. The range for the retrospective cohort was from 49% to 76% completion of Algebra I by Grade 9.

Cohort group was a predictor of Algebra I completion in both the main and covariate MLMs. Students in the primary cohort were more likely to complete Algebra I by Grade 9 than students in the retrospective cohort, even after prior STAAR performance and demographic characteristics were accounted for (see Table 2.9). Other predictors of Algebra I completion by

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[22] As reported in the Year 3 Annual Implementation Report (Briggs et al, 2015), in Year 3 of the Texas GEAR UP SG, 92% of Grade 9 students in the primary cohort were either enrolled in Algebra I (61%) or had already completed Algebra I (31%). When stating that this goal was met in the Year 3 Annual Implementation Report, the evaluation team could only report on enrollment in Algebra I by Grade 9 at that point in the evaluation (except for the students who had already completed Algebra I prior to Grade 9).

Grade 9 included prior STAAR performance (students with higher Grade 8 STAAR Reading scores were more likely to complete Algebra I by Grade 9), gender (females were more likely to complete by Grade 9 than males, and race (students identified as African American were less likely to complete the course by Grade 9 than students not identified as African American).

Table 2.9. Algebra I Completion by Grade 9: Texas GEAR UP Primary Cohort versus Retrospective Cohort								
Initial Group Differences in Algebra I Completion by Grade 9								
	Cohort Percentages			Number in Cohort			Test Results	
	Primary	Retrospective		Primary	Retrospective		χ^2	sig
	71%	66%		1575	1227		6.53	*
MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	0.63	0.12	***	NA	0.62	0.23	**	NA
Group (primary cohort versus retrospective cohort)	0.21	0.08	*	1.24	0.42	0.09	***	1.52
Grade 8 STAAR Reading Scale Score (z-score)					0.14	0.05	**	NA
Female					0.32	0.09	***	1.38
Hispanic (versus White/Other)					-0.21	0.19	ns	NA
African American (versus White/Other)					-0.45	0.22	*	0.64 (1.57)
English Learner					0.20	0.17	ns	NA
Economically Disadvantaged					0.01	0.13	ns	NA
At-Risk					0.05	0.11	ns	NA
Number of students/schools	2802 / 6				2689 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.06		0.06		0.05			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grades 8 and 9 to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

ALGEBRA II COMPLETION BY GRADE 12

Next, Algebra II completion by Grade 12 was examined. Algebra II completion was not tied to a single project objective but served as a proxy for college readiness. Algebra II completers were defined as students who received credit for Algebra II by Grade 12. The set of non-completers includes both students who did not take Algebra II and those who took Algebra II but did not ever receive credit for the course. To be included in the analysis, students must have been a part of their respective cohorts in Grades 9, 10, 11, and 12.

Comparison Cohort. There were no differences between the primary cohort and the comparison cohorts' rates of Algebra II completion. Overall, about 82% of students in both cohorts completed Algebra II by Grade 12. Between 71% and 87% of students completed Algebra II by Grade 12 at each campus in the primary cohort, and between 76% and 87% of students completed the course at each campus in the comparison cohort. Cohort group was not a significant predictor in either MLM model (see Table C.2, Appendix C). In the covariate model, prior STAAR performance, gender, and at-risk status were predictors of completion – females,

students with higher Grade 8 STAAR Reading scores, and students who were not classified as at-risk at the beginning of Grade 9 were more likely to complete Algebra II by Grade 12 than their counterparts.

Retrospective Cohort. As in the comparison cohort, there were no differences in Algebra II completion between the primary and retrospective cohort. Completion rates ranged from 64% to 87% for schools in the retrospective cohort. Cohort group was not a predictor of Algebra II completion in the MLM models (see Table C.3, Appendix C). As in the comparison cohort models, students with higher Grade 8 STAAR Reading scores, females, and students who were not classified as at-risk at the beginning of Grade 9 were more likely to have completed Algebra II by Grade 12 than their counterparts.

AP COURSE COMPLETION

Project Objective 2.2 states that by the end of the project's fifth year (Grade 11), 60% of the cohort will complete a pre-AP or AP course, and Project Objective 2.3 states that at least half of cohort students will graduate with college credit from AP exams or through a dual credit course. Data were not available for students in all cohorts to be able to assess these objectives directly (there was not information about pre-AP courses or credit earned from AP exams in the data set for this analysis). Therefore, for this outcome, the number of AP courses completed and the percentage of students completing at least one AP course was examined. Overall, students across all cohorts completed between 0 to 15 AP courses.[23]

Comparison Cohort. Students in the primary cohort were more likely to complete an AP course than students in the comparison cohort, (χ^2 = 13.42 p < .001). On average, 51% of students in the primary cohort completed at least one AP course, compared to only 44% of the comparison cohort. However, there were no overall differences in the number of AP courses completed. On average, students completed 1.6 AP courses. There were large differences in completion by campus, with 30% to 69% of students per campus completing an AP course in the primary cohort and 13% to 59% of students per campus completing an AP course in the comparison cohort.

Cohort group was not a significant predictor in the MLM models (see Table C.4 and Table C.5, Appendix C). Significant predictors of completion included score on Grade 8 STAAR Reading (students with higher scores tended to complete more AP courses), gender (females completed more courses than males), and at-risk status (students who were identified as at-risk at the beginning of Grade 9 completed fewer AP courses). Additionally, in the covariate model for number of courses completed, EL was a significant predictor: once prior STAAR performance and other student characteristics were taken into account, students who were identified as EL completed more courses than non-EL students. It is important to note that this was only true in the MLM model – overall, EL students completed 0.7 AP courses and non-EL students completed 1.6 AP courses (see Section 2.3.7).

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[23] As reported in the Year 5 Annual Implementation Report (Spinney et al., 2018), according to GUIDES data, approximately 73% of the primary cohort—including 68% of EL students—had completed a pre-AP or AP course prior to Grade 11, indicating that overall the cohort met Project Objective 2.2 prior to the end of Year 5. When stating that this goal was met in the Year 5 Annual Implementation Report, the evaluation team could only report on this objective using GUIDES data at that point in the evaluation. The discrepancy in reporting on this objective is because the analysis in this report is based on a different dataset that did not have data available for students in all cohorts. Because data were not available for pre-AP course completion for students in this sample, meeting Project Objective 2.2. could not be definitively determined.

Retrospective Cohort. There was not a significant difference between the primary and retrospective cohort in the percentage of students completing at least one AP course. On average, half of students completed at least one AP course. Similar to the prior findings, there were large differences in completion by campus, with 29% to 69% of students completing an AP course by Grade 12 in the retrospective cohort. Cohort group was not a significant predictor in the MLM models (see Table C.6, Appendix C).

Students in the primary cohort completed more AP courses (about 1.7) than students in the retrospective cohort (about 1.4, χ^2 = 3.03, p < .01). Cohort group was a significant predictor in the main and covariate MLM models (see Table 2.10). Students in the primary cohort were more likely to complete a course than students in the retrospective cohort. Additional predictors of course completion included score on Grade 8 STAAR Reading (students with higher scores tended to complete more AP courses), gender (females completed more courses than males), and risk status (students who were identified as at-risk at the beginning of Grade 9 completed fewer AP courses).

Table 2.10. Number of AP Courses Completed by Grade 12: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Number of AP Courses Completed by Grade 12							
	Cohort Means			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	t	sig
	1.7	1.4		1164	1042	3.03	**

MLM Regression Models							
	Main Model			Covariate Model			
Variable	B	SE	sig	B	SE		sig
Intercept	1.34	0.21	***	1.82	0.33		***
Group (Primary cohort versus retrospective cohort)	0.27	0.08	**	0.29	0.08		***
Grade 8 STAAR Reading Scale Score (z-score)				0.72	0.05		***
Female				0.36	0.08		***
Hispanic (versus White/Other)				-0.23	0.18		ns
African American (versus White/Other)				-0.37	0.21		ns
English Learner				0.17	0.16		ns
Economically Disadvantaged				-0.20	0.12		ns
At-Risk				-0.66	0.10		***

Number of students/schools		2206 / 6		1970 / 6		
School level variance	Intercept only	Main model	Covariate model		
	0.15	0.15	0.41		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency
Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grades 9, 10, 11, and 12 to be included in these analyses.

DUAL CREDIT

Project Objective 2.3 was for at least half of Texas GEAR UP SG primary cohort students to earn college credit through AP exams or through dual course completion. Data for credit earned via AP exam was not available for students in all cohorts in this dataset for this analysis. The percentage of students who received at least one college credit via dual credit course completion by cohort

was analyzed for this outcome. To be included in the analyses, students had to have been a part of their cohort in Grades 9, 10, 11 and 12.[24]

Comparison Cohort. There were no significant differences between the percentages of students who earned course credit at the group level. On average, 4% of students earned college credit through dual credit coursework. There was a very large difference between campuses, revealing limited offerings overall for dual credit courses.

Only one campus in the comparison cohort, School Q, had dual credit earners (approximately 17% of students at this campus). Only two campuses in the primary cohort had any dual credit completion – Schools J (14%) and L (34%). Cohort group was not a significant predictor in the MLM models (see Table C.7, Appendix C). Prior score was the only predictor of dual credit completion: students with higher Grade 8 STAAR Reading scores were more likely to earn dual credit than their students with lower Grade 8 STAAR Reading scores.

Retrospective Cohort. There was a difference in the percentage of students who earned dual credit between the primary cohort and the retrospective cohort: 4% of primary cohort students earned dual credit compared to only 1% of retrospective cohort students (over three times as many, $\chi^2 = 14.43$, p < .001). In the retrospective cohort, 10% of students at School J and 2% of students at School K received dual credit. In contrast to the primary cohort, there were no students in the data set who earned dual credit at School L in the retrospective cohort.

Cohort group was a strong predictor of earning dual credit in both MLM models (see Table 2.11). That is, students in the primary cohort were more likely to earn dual credit even after controlling for student characteristics and prior STAAR performance. There were several additional predictors of dual credit earners. First, students who had higher Grade 8 STAAR Reading scores were more likely to earn dual credit than students with lower scores. Students who were Hispanic and those who were identified as at-risk at the beginning of Grade 9 were less likely to earn dual credit than students who were not identified as at-risk. Interestingly, students who were classified as EL were more likely than non-EL students to earn dual credit in high school. This finding is likely related to the small number of dual credit completions overall and the large disparities by campus.

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[24] As reported in the Year 7 Annual Implementation Report (Spinney et al., 2019), according to GUIDES data, only 19% of students in the primary cohort earned college credit while in high school, indicating that overall the primary cohort did not meet Project Objective 2.3 prior to the end of Year 6. Because earning credit through AP exams was a significant part of Project Objective 2.3, and data for this outcome were not available, it could not be definitively determined if students met the objective in this report.

Table 2.11. Dual Credit Course Completion by Grade 12: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in At Least One Dual Credit Course Completion by Grade 12								
	Cohort Percentages			Number in Cohort			Test Results	
	Primary	Retrospective		Primary	Retrospective		χ^2	sig
	4%	1%		1164	1042		14.43	***

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-7.1	2.27	**	NA	-7.09	2.55	**	NA
Group (primary cohort versus retrospective cohort)	1.18	0.33	***	3.26	1.34	0.43	**	3.81
Grade 8 STAAR Reading Scale Score (z-score)					1.23	0.27	***	NA
Hispanic (versus White/Other)					-1.11	0.50	*	0.33 (3.05)
African American (versus White/Other)					-0.74	0.55	ns	NA
English Learner					3.06	1.29	*	21.43
At-Risk					-2.08	0.65	**	0.12 (8)

Number of students/schools	2206 / 6				1970 / 6			
School level variance	Intercept only		Main model		Covariate model			
	14.59		14.59		16.32			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, White/Other, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grades 9, 10, 11, and 12 to be included in these analyses. Due to convergence issues, gender and economic disadvantage were removed from the covariate analysis.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

ADVANCED COURSE COMPLETION SUMMARY

Courses examined included Algebra I by Grade 9, Algebra II by Grade 12, Advanced Placement by Grade 12, and dual credit courses (with college credit earned by Grade 12). There were large differences in advanced course completion at each of the campuses within the three cohorts. Between cohorts, at the group level, primary cohort students were more likely to complete at least one AP course by Grade 12 than students in the comparison cohort. Additionally, primary cohort students were more likely to complete Algebra I by Grade 9 than students in the retrospective cohort. They also completed more AP courses and earned more college credit via dual credit enrollment than students in the retrospective cohort.

Cohort group was not a significant predictor of advanced course completion in the MLMs for the comparison cohort. It was a predictor for three of four outcomes in the primary versus retrospective covariate analyses: once prior STAAR and other student characteristics were controlled, primary cohort students were more likely to complete Algebra I by Grade 9, more AP courses by Grade 12, and earn at least one hour of college credit by Grade 12 than students in the retrospective cohort.

STAAR End-of-Course Achievement

Project Objective 4.4 states that, by the end of the project's fifth year (i.e., Grade 11 for the primary cohort), 70% of students will demonstrate necessary academic preparation for college, and Project Objective 5.3 states that the percentage of students who graduate postsecondary ready in mathematics and English will meet or exceed the state average. In this report, student achievement on End-of-Course state assessments was measured across cohort to examine students' postsecondary readiness.[25]

Those assessments were: STAAR Algebra I EOC, STAAR English I EOC, STAAR English II EOC, STAAR Biology EOC, and STAAR U.S. History EOC. STAAR outcomes are categorized by scores at or above two standards. The first is Approaches Grade Level standard. Students who met this standard passed the EOC in the year it was administered. The second is Meets Grade Level standard. Reaching this standard serves as a proxy for college and career readiness.

STAAR EOC: ALGEBRA I

Comparison Cohort. At the group level, there were no differences between the primary and comparison cohort in meeting either standard. On average, 67% of students met the standard for Approaches Grade Level and 20% met the standard for Meets Grade Level. Cohort group was also not a significant predictor in any of the MLM models (see Table C.8 and Table C.9, Appendix C). In the covariate models, students with higher STAAR Grade 8 Reading scale scores were more likely, and students who were identified as at-risk at the beginning of Grade 9 were less likely to meet both standards. Additionally, students identified as African American were less likely to achieve the Meets Grade Level standard than students of other races.

Retrospective Cohort. Approximately the same percentage of students in the retrospective cohort met the Approaches Grade Level standard as those in the primary cohort. On average, 68% of students met this standard. However, in the covariate MLM, cohort group was a significant predictor of Approaches Grade Level standard (see Table 2.12). Students in the primary cohort were less likely to reach this standard than students in the retrospective cohort. Additionally, students who had higher Grade 8 STAAR Reading scores, students who were not identified as African American, and students who were not identified as at-risk at the beginning of Grade 9 were more likely to reach Approaches Grade Level standard.

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[25] As reported in the Year 5 Annual Implementation Report (Spinney et al., 2018), according to GUIDES data, only about 22% of primary cohort students met the criteria to be academically prepared for college, indicating that overall the primary cohort did not meet Project Objective 4.4 by the end of Year 5 (Grade 11). As reported in the Year 7 Annual Implementation Report (Spinney et al., 2019), according to GUIDES data, by the end of Year 6, approximately 14% of Grade 12 students were considered college ready in mathematics and English. Of those who graduated high school in Year 6, 16% were college ready in mathematics and English. Both groups were below the 2016–17 state average of 47%. Accordingly, Project Objective 5.3 was not met. The standards that this report uses are very different from the prior report because there was not the same level of detailed data available for college preparation for students in all cohorts. Because of this limitation, progress to Objective 4.4 cannot be definitively determined in this report.

Table 2.12. Algebra I EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Approaching the Achievement Standard							
	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	68%	68%		1934	1276	0	ns

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	0.94	0.24	***	NA	2.72	0.35	***	NA
Group (Primary cohort versus retrospective cohort)	-0.01	0.08	ns	NA	-0.26	0.11	*	0.77 (1.29)
Grade 8 STAAR Reading Scale Score (z-score)					1.05	0.07	***	NA
Female					0.10	0.11	ns	NA
Hispanic (versus White/Other)					-0.42	0.28	ns	NA
African American (versus White/Other)					-0.96	0.30	**	0.38 (2.62)
English Learner					0.25	0.18	ns	NA
Economically Disadvantaged					-0.12	0.17	ns	NA
At-Risk					-0.75	0.16	***	0.47 (2.12)

Number of students/schools	3210 / 6			2397 / 6		
School level variance	Intercept only		Main model		Covariate model	
	0.3		0.3		0.13	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. A small number of primary cohort students (73) took Algebra I EOC in a primary cohort middle school but did not attend a primary cohort high school; they are included in the Initial Group Differences analysis but not in the MLM Regression Models.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

A higher proportion of primary cohort students (20%) reached the Meets Grade Level standard for Algebra I EOC than retrospective cohort students (16%, χ^2 = 6.75, p < .01). Cohort group was significant in the main MLM (primary cohort students were more likely to achieve the Meets Grade Level standard than retrospective cohort) but was not significant in the covariate MLM (see Table C.10, Appendix C). Significant predictors of achieving Meets Grade Level standard included Grade 8 Reading STAAR score (students with higher scores were more likely to meet the standard), gender (females were more likely to meet the standard), ethnicity (African American students were less likely to meet the standard), EL status (ELs were more likely to reach the standard than students not classified as Els) and at-risk status (students classified as at-risk at the beginning of Grade 9 were less likely to meet the standard than students not classified as at-risk).

STAAR EOC: ENGLISH I

Comparison Cohort. There were no differences in the percentage of primary or comparison cohort students who reached either of the performance standards on English I EOC. On average, about 46% of students achieved Approaches Grade Level standard and 26% achieved Meets Grade Level standard. Cohort group was not a significant predictor of reaching either standard in the MLM models (see Table C.11 and Table C.12, Appendix C). Significant

predictors of reaching the standard included higher score on STAAR Grade 8 reading, gender (females were more likely to reach the standard), not being identified as EL and not being classified as at-risk at the beginning of Grade 9.

Retrospective Cohort. Students in the primary cohort were less likely to achieve the Approaches Grade Level standard than students in the retrospective cohort (45% versus 54%, χ^2 = 29.08, p < .001. Cohort group was also a significant predictor of the Approaches Grade Level standard in the MLM models (see Table 2.13). Females, students with higher Grade 8 STAAR Reading score, students who were not identified as EL, and students who were not identified as at risk at the beginning of Grade 9 were more likely to meet the standard than their counterparts.

Table 2.13. English I EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Approaching the Achievement Standard							
	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	45%	54%		2028	1612	29.08	***

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR [a]	B	SE	sig	OR [a]
Intercept	0.37	0.28	ns	NA	1.51	0.28	***	NA
Group (Primary cohort versus retrospective cohort)	-0.37	0.07	***	0.69 (1.45)	-0.61	0.10	***	0.54 (1.84)
Grade 8 STAAR Reading Scale Score (z-score)					1.77	0.08	***	NA
Female					0.55	0.10	***	1.74
Hispanic (versus White/Other)					-0.20	0.23	ns	NA
African American (versus White/Other)					-0.45	0.28	ns	NA
English Learner					-0.37	0.21	ns	NA
Economically Disadvantaged					-0.42	0.16	**	0.66 (1.52)
At-Risk					-0.74	0.13	***	0.48 (2.1)

Number of students/schools	3640 / 6				2641 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.44		0.45		0.02			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.
Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.
[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

The results were similar for Meets Grade Level standard. A smaller percentage of students in the primary cohort met the standard than the retrospective cohort (26% versus 31%, χ^2 = 8.42, *p* < .01). Cohort group was also a predictor in both MLM models: students in the retrospective cohort were more likely to meet the standard than students in the primary cohort (see Table 2.14). As with Approaches Grade Level standard, there were several significant student characteristics that predicted reaching Meets Grade Level standard. Females, students with higher Grade 8 STAAR Reading score, students who were not classified as economically

disadvantaged, and students who were not identified as at-risk at the beginning of Grade 9 were more likely to meet the standard than their counterparts.

Table 2.14. English I EOC Meets Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Meeting the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	26%	31%		2028	1612	8.42	**

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR [a]	B	SE	sig	OR [a]
Intercept	-0.65	0.30	*	NA	-0.28	0.29	ns	NA
Group (Primary cohort versus retrospective cohort)	-0.22	0.08	**	0.8 (1.25)	-0.26	0.11	*	0.77 (1.3)
Grade 8 STAAR Reading Scale Score (z-score)					1.82	0.09	***	6.2
Female					0.61	0.11	***	1.85
Hispanic (versus White/Other)					-0.37	0.23	ns	NA
African American (versus White/Other)					-0.58	0.27	*	0.56 (1.78)
English Learner					-0.78	0.37	*	0.46 (2.18)
Economically Disadvantaged					-0.28	0.16	ns	NA
At-Risk					-0.90	0.12	***	0.41 (2.46)

Number of students/schools	3640 / 6		2641 / 6	
School level variance	Intercept only	Main model	Covariate model	
	0.50	0.50	0.07	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

STAAR EOC: ENGLISH II

Comparison Cohort. A higher percentage of students in the primary cohort achieved the Approaches Grade Level standard (50%) than students in the comparison cohort (45%, χ^2 = 9.45, p < .01). However, cohort group was not a significant predictor in the MLM models (see Table C.13, Appendix C). There were no differences in the percentage of students who achieved Meets Grade Level standard – on average, 26% of students reached this standard – and cohort group was not a significant predictor in the MLM models (see Table C.14, Appendix C).

Females and students with higher Grade 8 STAAR Reading scores were more likely to reach the both standards than their males and students with lower Grade 8 STAAR Reading scores. Students who were identified as African American, EL, and those who were at-risk at the beginning of Grade 9 were less likely to meet both standards than students without these classifications.

Retrospective Cohort. There were no differences at the group level in reaching either standard. On average, 50% of students achieved the Approaches Grade Level standard, and 27% reached the Meets Grade Level Standard. Cohort group was not a significant predictor in either model (see Table C.15 and Table C.16, Appendix C). Males, students identified as African American, English Learners, and students who were identified as At Risk at the beginning of Grade 9 were less likely to meet both the Approaches Grade Level and Meets Grade Level standard.

STAAR EOC: BIOLOGY

Comparison Cohort. There were no differences at the group level in meeting the Biology EOC standards. On average, about 81% of students reached the Approaches Grade Level standard, and 35% reached the Meets Grade Level standard. However, cohort group was not a significant predictor in any of the MLMs (see Table C.17 and Table C.18, Appendix C).

Students with higher prior score on Grade 8 STAAR Reading, females, and students who were not classified as at-risk at the beginning of Grade 9 were more likely to meet both standards than their counterparts. Additionally, students who were identified as EL were less likely to meet the Approaches Grade Level standard than non-EL students, and students identified as African American were less likely to reach the Meets Grade Level standard than students of other races.

Retrospective Cohort. Similar to the comparison cohort, there were no group-level differences in reaching either standard. On average, about 81% of students achieved Approaches Grade Level standard and 34% achieved Meets Grade Level standard. Cohort group was not a significant predictor in either main MLM model or in the covariate model for Meets Grade Level (see Table C.19, Appendix C). However, cohort group was a significant predictor for Approaches Grade Level (see Table 2.15). Students in the primary cohort were less likely than students in the retrospective cohort to achieve the Approaches Grade Level standard once prior STAAR performance and other student characteristics were controlled.

Table 2.15. Biology EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Approaching the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	82%	83%		1803	1568	0.35	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.88	0.38	***	NA	3.54	0.47	***	NA
Group (Primary cohort versus retrospective cohort)	-0.05	0.09	ns	NA	-0.38	0.15	*	0.68 (1.47)
Grade 8 STAAR Reading Scale Score (z-score)					1.34	0.10	***	NA
Female					0.11	0.14	ns	NA
Hispanic (versus White/Other)					0.07	0.35	ns	NA
African American (versus White/Other)					-0.47	0.39	ns	NA
English Learner					-0.13	0.22	ns	NA
Economically Disadvantaged					0.25	0.22	ns	NA
At-Risk					-1.11	0.25	***	0.33 (3.04)
Number of students/schools				3371 / 6		2545 / 6		
School level variance		Intercept only		Main model		Covariate model		
		0.81		0.81		0.25		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Additional predictors of meeting both standards included Grade 8 STAAR Reading score (students with higher scores were more likely to meet the standards) and at-risk status (students who were identified as at risk at the beginning of Grade 9 were less likely to meet the standard). There were two additional predictors for reaching Meets Grade Level standard – females and students who were not identified as African American were more likely to achieve at this level than their counterparts.

STAAR EOC: U.S. HISTORY

Comparison Cohort. Students in the primary cohort were slightly more likely to Approach the standard for U.S. History than students in the comparison cohort (85% versus 82%, χ^2 = 4.89, p < .05). However, cohort group was not a significant predictor in the MLM models (see Table C.20, Appendix C). There were no significant differences between cohorts for Meets Grade Level standard (about 46% of students met the standard) and cohort group was not a significant predictor in either MLM (see Table C.21, Appendix C). Males and students with higher Grade 8 STAAR Reading scores were more likely to meet both standards than females and students with lower Grade 8 STAAR Reading scores. An additional predictor of reaching the Meets Grade Level standard was risk status – students classified as at-risk were less likely to meet the standard than students who were not at-risk.

Retrospective Cohort. More retrospective cohort students reached the Approaches Grade Level standard than students in the primary cohort (91% versus 85%). Cohort group was also a significant predictor in both MLM models – students in the retrospective cohort were more likely to meet the standard than students in the primary cohort (see Table 2.16). Additionally, males and students who had higher Grade 8 STAAR Reading scores were more likely to achieve Approaches Grade Level than their counterparts.

Table 2.16. U.S. History EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Approaching the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	85%	91%		1686	1323	23.87	***

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR [a]	B	SE	sig	OR [a]
Intercept	2.54	0.33	***	NA	5.19	0.68	***	NA
Group (Primary cohort versus retrospective cohort)	-0.58	0.12	***	0.56 (1.79)	-0.99	0.19	***	0.37 (2.69)
Grade 8 STAAR Reading Scale Score (z-score)					1.41	0.13	***	NA
Female					-0.76	0.18	***	0.47 (2.14)
Hispanic (versus White/Other)					-0.59	0.57	ns	NA
African American (versus White/Other)					-0.89	0.60	ns	NA
English Learner					-0.01	0.27	ns	NA
Economically Disadvantaged					-0.33	0.31	ns	NA
At-Risk					-0.37	0.27	ns	NA

Number of students/schools	3009 / 6			2163 / 6		
School level variance	Intercept only		Main model		Covariate model	
	0.56		0.58		0.26	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

A higher percentage of students in the retrospective cohort (49%) reached the Meets Grade Level standard for U.S. History than students in the primary cohort (45%). Cohort group was a significant predictor in the MLM models (see Table 2.17). Students in the retrospective cohort were more likely to achieve Meets Grade Level than students in the primary cohort. Additionally, students with higher Grade 8 STAAR Reading scores, males, students not identified as African American, and students not identified as at-risk were more likely to meet this standard than their counterparts.

Table 2.17. U.S. History EOC Meets Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Meeting the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	45%	49%		1686	1323	5.28	*

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR [a]	B	SE	sig	OR [a]
Intercept	0.11	0.29	ns	NA	1.61	0.31	***	NA
Group (Primary cohort versus retrospective cohort)	-0.18	0.08	*	0.83 (1.2)	-0.27	0.11	*	0.76 (1.31)
Grade 8 STAAR Reading Scale Score (z-score)					1.34	0.08	***	NA
Female					-1.21	0.11	***	0.3 (3.34)
Hispanic (versus White/Other)					-0.36	0.25	ns	NA
African American (versus White/Other)					-0.94	0.29	**	0.39 (2.56)
English Learner					-0.05	0.22	ns	NA
Economically Disadvantaged					-0.04	0.16	ns	NA
At-Risk					-0.78	0.13	***	0.46 (2.18)

Number of students/schools	3009 / 6			2163 / 6		
School level variance	Intercept only		Main model		Covariate model	
	0.48		0.48		0.1	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

STANDARDIZED TEST ACHIEVEMENT SUMMARY

In this section, many differences were observed between the primary cohort and the comparison and retrospective cohorts. The most robust results are those that persisted in the covariate MLMs, which accounted for school-level variance, student characteristics, and prior STAAR performance. When looking at results in this way, although primary cohort students outperformed the comparison cohort on several of the outcomes, there were no differences between groups in the MLMs.

When comparing the primary and retrospective cohorts' performance on STAAR, results generally favored the retrospective cohort. Students in the retrospective cohort were more likely to reach the Approaches Grade Level standard for Biology EOC. They were also more likely to meet both standards (Approaches Grade Level and Meets Grade Level) for English I and U.S. History EOC than students in the primary cohort. However, students in the primary cohort were more likely to achieve Meets Grade Level on the Algebra I EOC. Some of the differences for Approaches Grade Level might be explained by the changing standards (it was slightly easier to achieve Approaches Grade Level prior to 2016) but Meets Grade Level did not change over time.

On-Time Grade-Level Promotion and Graduation

One of the major objectives for the Texas GEAR UP SG is to increase on-time promotion (Project Goal 4) and to promote high school completion (Project Goal 5). The three outcomes in this section measure progress to this important purpose.

PROMOTION FROM GRADE 9 TO GRADE 10

Project Objective 4.3 is to increase promotion for the GEAR UP cohort relative to the state at the end of year three, or from Grade 9 to Grade 10.[26] In 2014-15, the state promotion rate from Grade 9 to Grade 10 was 91.4%. Students in the primary cohort in Grade 9 had a promotion rate of only 80.0%, which was lower than the state average by 11.4 percentage points. Therefore, the primary cohort did not meet Project Objective 4.3.[27]

Comparison Cohort. More students were promoted on time in the comparison cohort (83%) than in the primary cohort (80%, χ^2 = 6.48, p < .05). In the main MLM, cohort group was a significant predictor favoring the primary cohort. However, in the covariate MLM, cohort was no longer a significant predictor (see Table C.22, Appendix C). There were several significant student characteristics: Females and students with higher STAAR Grade 8 Reading scores were more likely to be promoted on time than males and students with lower STAAR Reading scores. Conversely, students who were identified as at-risk at the beginning of Grade 9 were less likely to be promoted on time.

Retrospective Cohort. At the group level, students in the primary cohort were more likely to be promoted on time than students in the retrospective cohort (80% compared to 77%). Cohort group was also a predictor of promotion in the main MLM, favoring the primary cohort (see Table 2.18). However, in the covariate MLM, once student characteristics and prior STAAR performance were considered, students in the primary cohort were *less* likely to be promoted than students in the retrospective cohort.

As in the comparison cohort models, females and students with higher STAAR Grade 8 Reading scores were more likely to be promoted on time than their counterparts. Conversely, students who were identified as at-risk at the beginning of Grade 9 were less likely to be promoted on time. Students in the retrospective cohort who were not promoted on time were still in Grade 9 in 2014–15 (and thus received GEAR UP SG services). For all other analyses, these students were considered a part of the primary GEAR UP cohort.

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[26] Promotion was assessed by examining if students who were in Grade 9 at the end of year in 2014–15 (primary cohort and comparison cohort) or 2013–14 (retrospective cohort) were in Grade 10 according to the PEIMS fall snapshot the following school year. Students who were not in the PEIMS database in either Grade 9 or Grade 10 were excluded from the analysis as their grade-level in the missing year is unknown.

[27] As reported in the Year 4 Annual Implementation Report (Spinney et al., 2018), Texas GEAR UP SG schools reported in the annual performance data that, of the students who remained at the same school through the end of the school year, 88% of Grade 9 students were eligible for on-time promotion to Grade 10. According to statewide data for Grade 9 retention from the 2014–15 school year, the retention rate was 8.6%, implying a promotion rate of 91.4%. Texas GEAR UP SG schools overall were not on track to meet the project objective by the end of the project's third year.

Table 2.18. On-time Promotion from Grade 9 to Grade 10: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students' On-time Promotion from Grade 9 to Grade 10							
	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	80%	77%		2233	2161	9.17	**

MLM Regression Models							
	Main Model				Covariate Model		
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.54	0.32	***	NA	3.55	0.42	***	NA
Group (Primary cohort versus retrospective cohort)	0.20	0.07	**	1.22	-0.83	0.15	***	0.44 (2.3)
Grade 8 STAAR Reading Scale Score (z-score)					0.76	0.09	***	2.14
Female					0.35	0.14	*	1.42
Hispanic (versus White/Other)					0.12	0.36	ns	NA
African American (versus White/Other)					-0.29	0.38	ns	NA
English Learner					0.33	0.24	ns	NA
Economically Disadvantaged					0.01	0.23	ns	NA
At-Risk					-0.79	0.22	***	0.45 (2.2)

Number of students/schools	4394 / 6			2806 / 6		
School level variance	Intercept only		Main model		Covariate model	
	0.58		0.58		0.08	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grade 9 to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

ON-TIME GRADUATION

Project Objective 5.4 states that at the end of the project's sixth year (i.e., 2017–18), the Texas GEAR UP SG cohort completion rate will meet or exceed the state average to increase on-time graduation for the GEAR UP cohort.[28] Overall, the state 4-year graduation rate in 2017−18)[29] was 90.0%. The graduation rate for primary cohort students was 92.1%, or about 2 percentage points above the state average.[30]

Comparison Cohort. There were no significant differences in on-time graduation between the primary and comparison cohorts in terms of overall group differences or in the statistical models.

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[28] To be included in the analyses, students had to have data for Grade 12 or had to have graduated early (i.e., in either 2016 or 2017.)

[29] See https://rptsvr1.tea.texas.gov/acctres/completion/2017/state.html

[30] As reported in the Year 7 Annual Implementation Report (Spinney et al., 2019), in spring 2018, 90.7% of Texas GEAR UP SG students in the primary cohort graduated. This report contains the most up-to-date information on graduation, including summer graduates, so the percentage is slightly higher than reported previously.

Grade 8 STAAR Reading score was a significant positive predictor of graduation in the MLM – students with higher scores were more likely than students with lower Grade 8 STAAR Reading scores to graduate on time (see Table C.23, Appendix C).

Retrospective Cohort. More students in the retrospective cohort graduated on-time than the primary cohort (95% versus 92%, χ^2 = 10.52, p < .01) Cohort group was also a significant predictor in the retrospective cohort's favor in the main MLM, but there were no differences in the covariate MLM (see Table C.24, Appendix C). As above, Grade 8 STAAR Reading score predicted on-time graduation – students with higher scores were more likely to graduate on time than their students with lower Grade 8 STAAR Reading scores.

GRADUATION ON THE FOUNDATION HIGH SCHOOL PROGRAM WITH AN ENDORSEMENT OR AT THE DISTINGUISHED LEVEL OF ACHIEVEMENT

Project Objective 1.2 was for the percentage of cohort students graduating on the Foundation High School Program with an endorsement or at the distinguished level of achievement to meet or exceed the state average. In 2017–18, 85.4% of students in the state graduated on the Foundation High School Program with an endorsement or at the distinguished level of achievement.[31] In the primary cohort, 82.9% graduated with this level of achievement – slightly lower than the state level.[32]

Comparison Cohort. There were no differences between cohorts for graduation with the Foundation High School Program with an endorsement or at the distinguished level of achievement at the group level or in the MLMs (see Table C.25, Appendix C). Females and students with higher Grade 8 STAAR Reading scores were more likely than their male counterparts and students with lower Grade 8 STAAR Reading scores to graduate under the Foundation High School Program plus endorsement or at the distinguished level of achievement.

Retrospective Cohort. Students in the retrospective cohort were not required to graduate under the Foundation High School Program plus endorsement or at the distinguished level of achievement. Therefore, only a small percentage (17%) did so. Because of this disparity in requirements, there were no statistical analyses conducted for this outcome.

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[31] See https://tea.texas.gov/acctres/DropComp_2016-17.pdf

[32] As reported in the Year 7 Annual Implementation Report (Spinney et al., 2019), according to GUIDES data, most (87.7%) primary cohort students graduated on the Foundation High School Program with an endorsement, and nearly that same percentage of graduates (87.3%) additionally received the distinguished level of achievement. This exceeds the state average of 85.4% for the class of 2018; accordingly, Project Objective 1.2 was met.

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ON-TIME PROMOTION AND GRADUATION SUMMARY

A slightly higher percentage of students in the comparison cohort (83%) were promoted on-time than students in the primary cohort (80%). However, in the main model, after controlling for school-level variance, students in the primary cohort were more likely to be promoted on time than students in the comparison cohort. In the covariate MLM models, cohort group was not a significant predictor of on-time promotion.

When examining on-time promotion from Grade 9 to 10 for the primary versus retrospective cohort, there was a curious finding. More students in the primary cohort (80%) were promoted on time than students in the retrospective cohort (77%), and cohort group was a significant predictor in the main model favoring the primary cohort. However, once prior STAAR performance and other student characteristics were added to the model, results flipped and favored the retrospective cohort – retrospective cohort students were more likely to be promoted than primary cohort students in this model.

The graduation rates for the primary and comparison cohorts were similar. More students in the retrospective cohort (95%) graduated on time than students in the primary cohort (92%), and cohort group was a significant predictor in the main MLM. However, in the covariate MLM, cohort group was no longer a predictor of on-time graduation.

There were no differences between the primary and comparison cohort in graduating under the Foundation High School Program plus an endorsement or with distinguished level of achievement. More students graduated under this plan in the primary cohort than the retrospective cohort, but requirements changed significantly between years, so this outcome was not analyzed statistically.

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Section Summary

In this section, differences in outcomes by cohort were examined. Specifically, outcomes for students in the Texas GEAR UP SG primary cohort were compared to those for the comparison cohort and for the retrospective cohort. Mean group differences were first examined, and then MLM models were created to examine differences once student characteristics and prior academic performance were controlled. Because of the differences in composition among students detailed in section 1.3, the covariate MLM models give the strongest indication of group differences caused by the program.

In these MLM models, cohort group was not a significant predictor of outcome for any of the models examining the primary cohort and the comparison cohort. For example, although more primary cohort students completed at least one AP course by Grade 12 than comparison cohort students, once school, prior performance, and other student characteristics were taken into account, there were no significant differences between cohorts.

There were some significant differences in outcomes between the primary and retrospective cohorts. In terms of advanced coursework completion, these differences generally favored the primary cohort. Primary cohort students were more likely to complete Algebra I by Grade 9 than retrospective cohort students. They completed more AP courses by Grade 12. Finally, they were more likely to earn college credit via dual credit course completion than students in the retrospective cohort.

When comparing the primary and retrospective cohorts' performance on STAAR, the retrospective cohort outperformed the primary cohort on half of the items measured (five of ten). Students in the retrospective cohort were more likely to meet the Approaches Grade Level standard on the Biology EOC. They were also more likely to meet both standards for English I and U.S. History EOC than students in the primary cohort. The primary cohort outperformed the

retrospective cohort on one measure: they were more likely to achieve Approaches Grade Level standard on the Algebra I EOC.

When examining on-time promotion from Grade 9 to 10 for the primary versus retrospective cohort, there was a reversal in findings. More students in the primary cohort (80%) were promoted on time than students in the retrospective cohort (77%), and cohort group was a significant predictor in the main model favoring the primary cohort. However, once prior STAAR performance and other student characteristics were added to the model, results flipped and favored the retrospective cohort – retrospective cohort students were more likely to be promoted on time than primary cohort students.

There were no differences in the MLM models for on-time graduation. 92.1% of Texas GEAR UP SG primary cohort students graduated on time. This percentage was about 2% higher than the state average (90.0%).

Lasting Effects of Participation

In the previous section, there were significant differences found between the primary and retrospective cohorts in terms of advanced course completion and promotion from Grade 9 to 10. Primary cohort students were more likely than retrospective cohort students to complete advanced courses. More primary cohort students were promoted on-time than retrospective cohort students, but in the covariate MLM, students in the retrospective cohort were more likely to be promoted on-time than students in the primary cohort. In this section lasting effects of Texas GEAR UP SG are examined by comparing Algebra I completion and on-time promotion of two follow-on cohorts to primary and retrospective course completion.

Algebra I Completion

ALGEBRA I BY GRADE 8

The previous Comprehensive Report found that students in the primary cohort (30%) were much more likely to complete Algebra I by Grade 8 than students in the retrospective cohort (18%).

Follow-on Cohorts versus Primary Cohort. About a third (31%) of the 2093 students in follow-on cohort 1 and a similar percentage of the 2032 students in follow-on-cohort 2 (31%) completed Algebra I by Grade 8. These rates were similar to those from the Texas GEAR UP State Grant Program Evaluation Grades 7−8 Comprehensive Report for the 1959 Grade 8 students in the primary cohort (see Figure 2.1).

MLM models were created to examine group differences while controlling for student characteristics. Cohort group was not a significant predictor of Algebra I completion between the primary cohort and either of the follow-on cohorts in the MLMs (see Table C.26 and Table C.27, Appendix C).

Follow-on Cohorts versus Retrospective Cohort

A much higher percentage of students in the two follow-on cohorts (both 31%) completed Algebra I by Grade 8 than the 1887 students in the retrospective cohort (17%, see Figure 2.1).

Figure 2.1: Algebra I Completion in Grade 8 Increased on Texas GEAR UP SG Implementation and Remained Elevated for Two Years Post-Grant

Retrospective (2012-13, n=1887)	17%
Primary (2013-14, n=1959)	30%
Follow-on 1 (2014-15, n=2093)	31%
Follow-on 2 (2015-16, n=2032)	31%
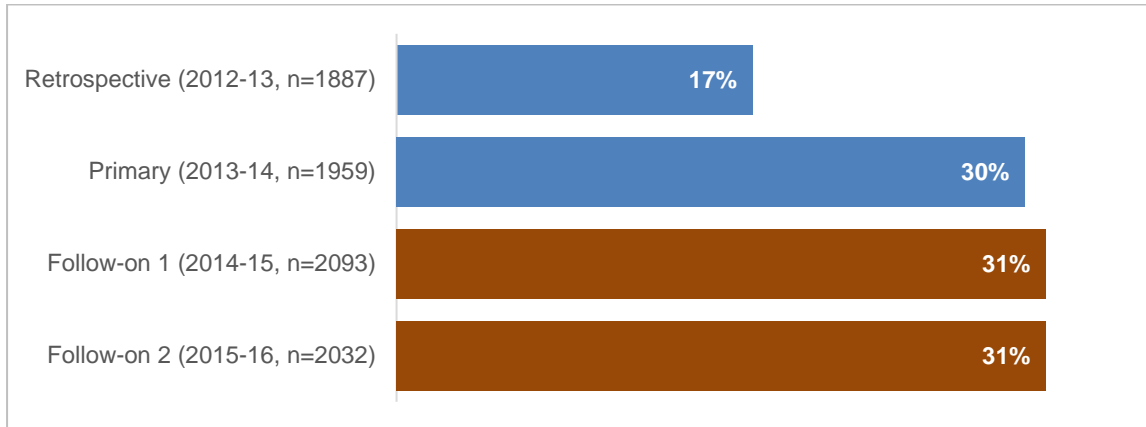
Source. Texas Education Agency, Public Education Information Management System (PEIMS), 2013–2018.

Cohort group was a significant predictor for the retrospective cohort and both of the follow-on cohorts (see Tables 2.19 and 2.20). In each case, students in the follow-on cohort were more likely to complete Algebra I by Grade 8 than students in the retrospective cohort. Additional predictors in both models included Grade 8 STAAR Reading score and race/ethnicity (African American students were less likely to complete Grade 8 than students of other races). In the follow-on 1 covariate MLM, students who were economically disadvantaged were less likely to complete the course than students not classified as economically disadvantaged, and in the follow-on 2 covariate MLM, students who were identified as EL were less likely to complete the course than students not identified as EL.

Table 2.19. Algebra I Completion by Grade 8: Texas GEAR UP Follow-On Cohort 1 versus Retrospective Cohort

Initial Group Differences in Algebra I Completion by Grade 8

	Cohort Percentages			Number in Cohort		Test Results	
	Retrospective	Follow On 1		Retrospective	Follow On 1	χ^2	sig
	17%	31%		1887	2093	108.9	***

MLM Regression Models

	Main Model				Covariate Model			
Variable[a]	B	SE	Sig	OR	B	SE	sig	OR[a]
Intercept	-0.85	0.24	**	NA	-0.86	0.35	*	NA
Group (follow-on cohort 1 versus retrospective cohort)	0.93	0.08	***	2.54	0.98	0.10	***	2.68
Grade 8 STAAR Reading Scale Score (z-score)					0.24	0.09	**	NA
Female					-0.06	0.17	ns	NA
Hispanic (versus White/Other)					-0.03	0.21	ns	NA
African American (versus White/Other)					-0.41	0.20	*	0.67 (1.5)
English Learner					-0.22	0.12	ns	NA
Economically Disadvantaged					-0.86	0.35	*	NA
Number of students/schools	3980 / 7				3570 / 7			
School level variance	Intercept only		Main model		Covariate model			
	0.35		0.40		0.61			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency.
Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grade 8 to be included in the analyses. At-risk status at the beginning of Grade 9 was not added to this analysis as these analyses are for Grade 8, and performance in that grade could have contributed to the at-risk variable.
[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table 2.20. Algebra I Completion by Grade 8: Texas GEAR UP Follow-On Cohort 2 versus Retrospective Cohort

Initial Group Differences in Algebra I Completion by Grade 8							
	Cohort Percentages			Number in Cohort		Test Results	
	Retrospective	Follow On 2		Retrospective	Follow On 2	χ^2	sig
	17%	31%		1887	2032	106.3	***

MLM Regression Models							
	Main Model				Covariate Model		
Variable	B	SE	Sig	OR	B	SE	sig	OR [a]
Intercept	-0.90	0.21	***	NA	-0.60	0.27	*	NA
Group (follow-on cohort 2 versus retrospective cohort)	0.86	0.08	***	2.36	0.88	0.08	***	2.40
Female					0.32	0.08	***	NA
Hispanic (versus White/Other)					-0.21	0.16	ns	NA
African American (versus White/Other)					-0.42	0.19	*	0.39 (2.58)
English Learner					-0.95	0.15	***	0.39 (2.58)
Economically Disadvantaged					-0.16	0.13	ns	NA

Number of students/schools		3919 / 7			3511 / 7		
School level variance	Intercept only	Main model		Covariate model			
	0.28	0.30		0.42			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency.
Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grade 8 to be included in the analyses. At-risk status at the beginning of Grade 9 was not added to this analysis as these analyses are for Grade 8, and performance in that grade could have contributed to the at-risk variable.
[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

ALGEBRA I BY GRADE 9

Next Algebra I completion by Grade 9 was examined. As discussed in Section 2.4, Student Outcomes by Cohort, more students in the primary cohort completed Algebra I by Grade 9 than students in the retrospective cohort (71% versus 66%, χ^2 = 6.53, p < .05). Algebra I completion continued to increase at Texas GEAR UP schools over time in the first follow-on year: more of the 1647 students in the first follow-on cohort completed Algebra I by Grade 9 than the 1575 students in the primary cohort (74% versus 71%, χ^2 = 4.35, p < .05). There was not a significant difference for Algebra I completion between the primary cohort and the second follow-on cohort (71% versus 73%, p > .10) (see Figure 2.2).

Figure 2.2: Algebra I Completion by Grade 9 Increased on Texas GEAR UP SG Implementation and Remained Elevated for Two Years Post-Grant
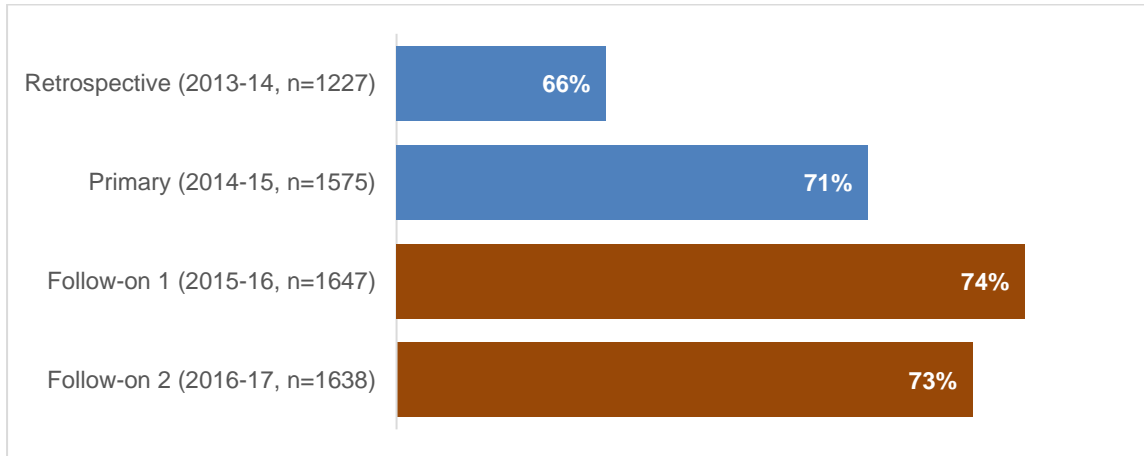
Source. Texas Education Agency, Public Education Information Management System (PEIMS), 2013–2018.

Follow-on Cohorts versus Primary Cohort

Cohort group was a significant predictor in the covariate MLM for the first follow-on cohort: students in the follow-on cohort were more likely to complete Algebra I by Grade 9 than students in the primary cohort, after prior STAAR performance and other student characteristics were accounted for (see Table 2.21). Cohort group was not a predictor in the covariate MLM for the second follow-on cohort (see Table C.28, Appendix C). Females, students who had higher Grade 8 STAAR Reading scores, and students who were not identified as at risk at the beginning of Grade 9 were more likely to complete Algebra I by Grade 9 than their counterparts in both covariate models. In the covariate MLM for the first follow-on cohort, students identified as EL were also more likely than non-ELs to complete Algebra I by Grade 9.

Table 2.21. Algebra I Completion by Grade 9: Texas GEAR UP Primary Cohort versus Follow-On Cohort 1

Initial Group Differences in Algebra I Completion by Grade 9

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Follow On 1		Primary	Follow On 1	χ^2	sig
	71%	74%		1575	1647	4.35	*

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR[a]	B	SE	sig	OR[a]
Intercept	1.11	0.19	***	NA	1.36	0.27	***	NA
Group (primary cohort versus follow-on 1 cohort)	-0.13	0.08	ns	NA	-0.39	0.09	***	0.68 (1.47)
Grade 8 STAAR Reading Scale Score (z-score)					0.81	0.06	***	NA
Female					0.48	0.09	***	1.62
Hispanic (versus White/Other)					0.06	0.21	ns	NA
African American (versus White/Other)					0.10	0.23	ns	NA
English Learner					0.43	0.17	*	1.54
Economically Disadvantaged					0.10	0.12	ns	NA
At-Risk					-0.34	0.12	**	0.71 (1.4)

Number of students/schools	3213 / 6			3030 / 6	
School level variance	Intercept only	Main model		Covariate model	
	0.16	0.19		0.12	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: follow-on cohort 1, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grades 8 and 9 to be included in the analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Follow-on Cohorts versus Retrospective Cohort. More students in the follow-on cohorts (74% and 73%, respectively) completed Algebra I by Grade 9 than students in the retrospective cohort (66%). Cohort group was also a significant predictor in the covariate MLMs: students in the follow-on cohorts were more likely to complete Algebra I by Grade 9 even after prior academic performance and other student characteristics were accounted for (see Table 2.22 and Table 2.23). Gender was a significant predictor of completing Algebra I by Grade 9 – females were more likely than males to complete the course. In addition, in the first follow-on cohort covariate MLM, EL students were more likely to complete the course than non-EL students.

Table 2.22. Algebra I Completion by Grade 9: Texas GEAR UP Follow-On Cohort 1 versus Retrospective Cohort

Initial Group Differences in Algebra I Completion by Grade 9							
	Cohort Percentages			Number in Cohort		Test Results	
	Retrospective	Follow On 1		Retrospective	Follow On 1	χ^2	sig
	66%	74%		1227	1647	20.21	***

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR
Intercept	1.05	0.14	***	NA	0.79	0.24	**	NA
Group (follow-on 1 cohort versus retrospective cohort)	0.42	0.08	***	1.52	0.67	0.09	***	1.94
Grade 8 STAAR Reading Scale Score (z-score)					0.19	0.05	***	NA
Female					0.25	0.09	**	1.28
Hispanic (versus White/Other)					0.05	0.18	ns	NA
African American (versus White/Other)					0.16	0.21	ns	NA
English Learner					0.45	0.21	*	1.56
Economically Disadvantaged					0.16	0.12	ns	NA
At-Risk					0.18	0.11	ns	NA

Number of students/schools		2874 / 6		2765 / 6	
School level variance	Intercept only	Main model		Covariate model	
	0.08	0.09		0.1	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grades 8 and 9 to be included in the analyses.

Table 2.23. Algebra I Completion by Grade 9: Texas GEAR UP Follow-On Cohort 2 versus Retrospective Cohort

Initial Group Differences in Algebra I Completion by Grade 9

	Cohort Percentages			Number in Cohort		Test Results	
	Retrospective	Follow On 2		Retrospective	Follow On 2	χ^2	sig
	66%	73%		1227	1638	14.84	***

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR
Intercept	1.02	0.1	***	NA	1.00	0.23	***	NA
Group (follow-on 2 versus retrospective cohort)	0.34	0.08	***	1.41	0.55	0.09	***	1.74
Grade 8 STAAR Reading Scale Score (z-score)					0.09	0.05	ns	NA
Female					0.36	0.09	***	1.43
Hispanic (versus White/Other)					-0.09	0.19	ns	NA
African American (versus White/Other)					0.01	0.22	ns	NA
English Learner					-0.17	0.15	ns	NA
Economically Disadvantaged					0.06	0.13	ns	NA
At-Risk					0.10	0.11	ns	NA

Number of students/schools	2865 / 6		2701 / 6	
School level variance	Intercept only	Main model	Covariate model	
	0.03	0.04	0.03	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grades 8 and 9 to be included in the analyses.

On-Time Promotion

The final area examined was on-time promotion from Grade 9 to Grade 10 for students in the follow-on cohorts compared to those in the primary and retrospective cohorts. As a reminder, more students in the primary cohort (80%) were promoted on-time than students in the retrospective cohort (77%, χ^2 = 9.17, p < .01), but once prior performance and other student characteristics were taken into account, primary cohort students were less likely than students in the retrospective cohort to be promoted on time.

Follow-on Cohorts versus Primary Cohort

There were no differences at the group level between the primary cohort and either follow-on cohort in terms of on-time promotion. However, in the covariate MLM, once prior STAAR performance and other student characteristics were accounted for, students in the primary cohort were more likely than students in the second follow-on cohort to be promoted on time (see Table 2.24). There were no significant differences for the MLMs for the first follow-on cohort (see Table C.29, Appendix C).

Table 2.24. On-time Promotion from Grade 9 to Grade 10: Texas GEAR UP Primary Cohort versus Follow-On Cohort 2

Initial Group Differences in Students' On-time Promotion from Grade 9 to Grade 10							
	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Follow On 2		Primary	Follow On 2	χ^2	sig
	80%	78%		2233	2184	3.46	ns

MLM Regression Models							
	Main Model				Covariate Model		
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.63	0.36	***	NA	1.85	0.35	***	NA
Group (Primary cohort versus follow-on cohort 2)	0.15	0.08	ns	NA	0.38	0.11	**	1.46
Grade 8 STAAR Reading Scale Score (z-score)					0.80	0.07	***	NA
Female					0.29	0.11	**	1.33
Hispanic (versus White/Other)					0.34	0.26	ns	NA
African American (versus White/Other)					0.40	0.29	ns	NA
English Learner					0.16	0.16	ns	NA
Economically Disadvantaged					-0.19	0.16	ns	NA
At-Risk					-0.14	0.15	ns	NA

Number of students/schools	4417 / 6			3208 / 6		
School level variance	Intercept only		Main model	Covariate model		
	0.74		0.74	0.26		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Follow-on Cohorts versus Retrospective Cohort

Significantly more students in the second follow-on cohort were promoted on time (81%) than students in the retrospective cohort (77%, χ^2 = 13.50, p < .01). However, although in the main MLM students in the follow-on cohort were more likely to be promoted than students in the retrospective cohort, in the covariate MLM, once prior performance and other student characteristics were taken into account, students in the first follow-on cohort were less likely than students in the retrospective cohort to be promoted on time (see Table 2.25).

Table 2.25. On-time Promotion from Grade 9 to Grade 10: Texas GEAR UP Retrospective Cohort versus Follow-On Cohort 1

Initial Group Differences in Students' On-time Promotion from Grade 9 to Grade 10

	Cohort Percentages		Number in Cohort		Test Results	
	Retrospective	Follow On 1	Retrospective	Follow On 1	χ^2	sig
	77%	81%	2161	2239	13.44	***

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.74	0.27	***	NA	2.68	0.40	***	NA
Group (follow-on 1 versus retrospective cohort)	0.25	0.08	**	1.29	-0.72	0.15	***	0.46 (2.18)
Grade 8 STAAR Reading Scale Score (z-score)					0.72	0.08	***	2.06
Female					0.27	0.14	*	1.31
Hispanic (versus White/Other)					0.26	0.30	ns	NA
African American (versus White/Other)					0.15	0.35	ns	NA
English Learner					0.43	0.27	ns	NA
Economically Disadvantaged					-0.26	0.21	ns	NA
At-Risk					-0.61	0.21	**	0.54 (1.85)

Number of students/schools	4400 / 6			3067 / 6		
School level variance	Intercept only	Main model		Covariate model		
	0.41	0.41		0.18		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

A similar percentage of students were promoted on time in the retrospective cohort and second follow-on cohort. In the covariate MLM, students in the second follow-on cohort were less likely to be promoted on-time than students in the retrospective cohort (see Table 2.26).

Table 2.26. On-time Promotion from Grade 9 to Grade 10: Texas GEAR UP Follow-On Cohort 2 versus Retrospective Cohort

Initial Group Differences in Students' On-time Promotion from Grade 9 to Grade 10							
Cohort Percentages				Number in Cohort		Test Results	
Retrospective	Follow On 2			Retrospective	Follow On 2	χ^2	sig
77%	78%			2162	2184	1.26	ns

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.63	0.36	***	NA	2.25	0.39	***	NA
Group (follow-on 2 versus retrospective cohort)	-0.15	0.08	ns	NA	-1.31	0.14	***	0.27 (3.71)
Grade 8 STAAR Reading Scale Score (z-score)					0.78	0.08	***	NA
Female					0.30	0.12	*	1.36
Hispanic (versus White/Other)					0.22	0.28	ns	NA
African American (versus White/Other)					0.53	0.34	ns	NA
English Learner					0.10	0.17	ns	NA
Economically Disadvantaged					-0.39	0.21	ns	NA
At-Risk					-0.33	0.18	ns	NA

Number of students/schools	4417 / 6			3061 / 6		
School level variance	Intercept only		Main model		Covariate model	
	0.55		0.74		0.26	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Section Summary

One of the major objectives for the first three years of the Texas GEAR UP SG was to increase Algebra I completion. These analyses demonstrate that this objective was not only successful for the period of the grant, but also for up to two years after the grant ended. Students in the primary and follow-on cohorts had higher rates of completion of Algebra I in Grade 8 and 9.

The other outcome examined was on-time promotion from Grade 9 to 10. Rates of promotion varied over time but there was not a clear pattern. Results from covariate MLM models showed that students in both follow-on cohorts were less likely than students from the retrospective cohort to be promoted on time from Grade 9 to 10 once student characteristics and prior STAAR performance were taken into account. Students in the second follow-on cohort were also less likely than students in the primary cohort to be promoted on-time once these factors were included in the models.

Length of Time in Cohort

In general, it was anticipated that students who participated in more years of Texas GEAR UP SG would perform better on student outcomes than students who participated in only one year. That is, more exposure to the Texas GEAR UP SG should be associated with better outcomes. In this section, the impact of length of time in cohort is examined.

Student data for Grades 7 through 12 or for up to 6 years of GEAR UP student participation were obtained. There was wide variation in participation (see Figure 2.3). About one-third of students (33%) had been in the cohort for all six years, and about a quarter (26%) had been in the cohort for only one year.

Figure 2.3: Texas GEAR UP SG Participation Over Time
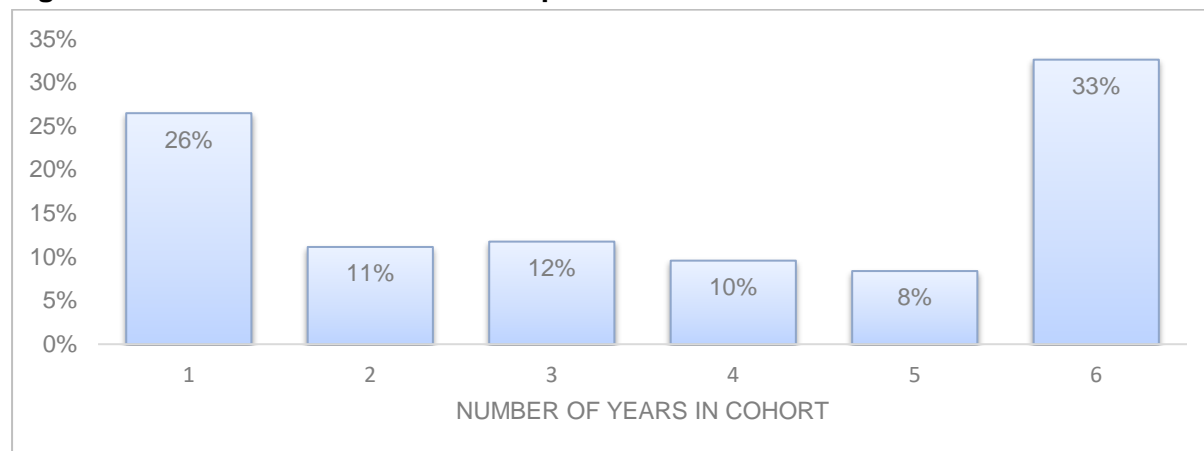
Source. Texas Education Agency, Public Education Information Management System (PEIMS), 2013–2018.

There were large differences in the number of years students attended particular campuses. School L had the highest mean number of years of participation (5.5), while school J had the lowest (4.7 years). School L also had the highest percentage of students who were in the primary cohort all six years (72%) while school J had the lowest (only 43%).

The next set of analyses focused on the effect of one to six years of GEAR UP participation on outcomes. Main effects MLMs and covariate MLMs were conducted for each outcome when possible. These models were similar to those in the previous section, but cohort group was replaced by length of time in cohort (from one to six years) in the model. This variable was cumulative – that is, if a student moved from Texas GEAR UP school after attending in Grade 9, but re-enrolled in Grade 12, that student would have a total of two years of participation in the program. To illustrate differences, means for students who were in the cohort for one to three years compared to those who were in the cohort for four to six years will be presented when the length of time variable was a significant predictor.

Because significant student characteristics have been described in other sections of this report, they are not discussed in this section. It is important to note when interpreting these results that there are likely differences between students who were in the cohort for longer periods of time. For example, those students in the cohort for all six years may have had more stable family structures and more stable peer groups than those who were only in the cohort for one or two years.

College Readiness: End-of-Course Assessments

Because students tended to not have data available when they left the cohort, data for advanced course completion (e.g., Algebra I, AP courses) was too limited to be included in the models. Therefore, this section begins with achievement of the Approaches Grade Level and Meets Grade Level standards for STAAR EOCs.

ALGEBRA I

Length of time in cohort was a significant predictor of reaching both standards: students who were in the cohort for a longer period of time were more likely to reach the Approaches Grade Level and Meets Grade Level standards in both the main and covariate MLM models on the Algebra I EOC (see Tables 2.27 and 2.28). Although 78% of the 1484 students who were in the

cohort four to six years reached the Approaches Grade Level standard, only 49% of the 1869 students who were in the cohort for one to three years reached this standard. A quarter (25%) of students who had been in the cohort for four to six years reached the Meets Grade Level standard, compared to only 11% of students who had been in the cohort for one to three years.

Table 2.27. Algebra I EOC Approaches Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-0.87	0.25	**	NA	0.32	0.54	ns	NA
Length	0.41	0.03	***	NA	0.42	0.06	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.18	0.10	***	NA
Female					0.22	0.15	ns	NA
Hispanic (versus White/Other)					-0.51	0.42	ns	NA
African American (versus White/Other)					-0.98	0.44	*	0.37 (2.67)
English Learner					0.48	0.24	*	1.62
Economically Disadvantaged					-0.18	0.22	ns	NA
At-Risk					-0.65	0.20	**	0.52 (1.92)
Number of students/schools	1934 / 6				1450 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.41		0.25		0.24			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

Table 2.28. Algebra I EOC Meets Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-3.28	0.33	***	NA	-2.31	0.53	***	NA
Length	0.40	0.05	***	NA	0.29	0.08	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.11	0.10	***	NA
Female					-0.27	0.15	ns	NA
Hispanic (versus White/Other)					0.00	0.30	ns	NA
African American (versus White/Other)					-0.44	0.37	ns	NA
English Learner					0.32	0.34	ns	NA
Economically Disadvantaged					-0.27	0.19	ns	NA
At-Risk					-0.82	0.17	***	0.44 (2.27)

Number of students/schools	1934 / 6			1450 / 6		
School level variance	Intercept only		Main model		Covariate model	
	0.41		0.27		0.12	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

ENGLISH I

As with Algebra I, length of time in cohort was a significant predictor for all models. Students who were in the cohort for a longer time were more likely to reach both English I standards in the main and covariate MLM models (see Tables 2.29 and 2.30).

Over half (55%) of the 1484 students who were in the cohort four to six years reached the Approaches Grade Level standard for English I, compared to only 22% of the1869 students who were in the cohort for one to three years. One-third (33%) of students who were in the cohort four to six years reached the Meets Grade Level standard for English I, compared to only 10% of students who were in the cohort for one to three years.

Table 2.29. English I EOC Approaches Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-1.77	0.24	***	NA	-1.68	0.42	***	NA
Length	0.38	0.03	***	NA	0.41	0.07	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.86	0.12	***	NA
Female					0.59	0.14	***	1.80
English Learner					-0.31	0.28	ns	NA
Economically Disadvantaged					-0.19	0.20	ns	NA
At-Risk					-0.77	0.17	***	0.46 (2.17)
Number of students/schools	2028 / 6				1432 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.36		0.21		0.04			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table 2.30. English I EOC Meets Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-2.48	0.31	***	NA	-1.77	0.54	**	NA
Length	0.34	0.04	***	NA	0.19	0.08	*	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.87	0.13	***	NA
Female					0.60	0.16	***	1.83
Hispanic (versus White/Other)					-0.35	0.32	ns	NA
African American (versus White/Other)					-0.91	0.39	*	0.40 (2.49)
English Learner					-1.55	0.73	*	0.21 (4.69)
At-Risk					-0.93	0.17	***	0.40 (2.53)

Number of students/schools	2028 / 6			1448 / 6		
School level variance	Intercept only		Main model		Covariate model	
	0.46		0.34		0.13	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

ENGLISH II

Length of time in cohort was a significant predictor for all models. Students who were in the cohort for a longer time were more likely to reach both the Approaches Grade Level and Meets Grade Level standards in the MLMs on the English II EOC (see Tables 2.31 and 2.32). Similar to the results for English I, over half (59%) of the students who were in the cohort four to six years reached the Approaches Grade Level standard for English II, compared to only 25% of students who were in the cohort for one to three years. One-third (33%) of students who were in the cohort four to six years reached the Meets Grade Level standard for English II, compared to only 12% of students who were in the cohort for one to three years.

Table 2.31. English II EOC Approaches Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort								
MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-1.60	0.24	***	NA	-2.71	0.61	***	NA
Length	0.38	0.03	***	NA	0.60	0.11	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.74	0.12	***	NA
Female					0.79	0.15	***	2.20
African American (versus White/Other)					-0.63	0.24	**	0.53 (1.87)
English Learner					-0.78	0.29	**	0.46 (2.18)
At-Risk					-0.62	0.19	**	0.54 (1.87)
Number of students/schools	1922 / 6				1261 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.35		0.21		0.05			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. Due to convergence issues, economic disadvantage was removed from the covariate model.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table 2.32. English II EOC Meets Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-2.43	0.28	***	NA	-4.27	0.81	***	NA
Length	0.32	0.04	***	NA	0.54	0.14	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.93	0.14	***	NA
Female					1.04	0.17	***	2.83
African American (versus White/Other)					-0.66	0.27	*	0.52 (1.93)
English Learner					-0.85	0.62	ns	NA
At-Risk					-1.14	0.18	***	0.32 (3.12)
Number of students/schools		1922 / 6			1261 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.32		0.23		0.05			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. Due to convergence issues, economic disadvantage was removed from the covariate model.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

BIOLOGY

Length of time in cohort was a significant predictor for all models. Students who were in the cohort for a longer time were more to reach both the Approaches Grade Level and Meets Grade Level standards in the MLMs on the Biology EOC (see Tables 2.33 and 2.34). Most (88%) of the students who were in the cohort four to six years reached the Approaches Grade Level standard for Biology, compared to 63% of students who were in the cohort for one to three years. Forty-one percent of students who were in the cohort four to six years reached the Meets Grade Level standard for Biology, compared to only 16% of students who were in the cohort for one to three years.

Table 2.33. Biology EOC Approaches Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-0.03	0.28	ns	NA	1.82	0.83	*	NA
Length	0.40	0.04	***	NA	0.51	0.09	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.26	0.14	***	NA
Female					0.35	0.20	ns	NA
Hispanic (versus White/Other)					-1.14	0.70	ns	NA
African American (versus White/Other)					-1.58	0.72	*	0.21 (4.83)
English Learner					-0.12	0.29	ns	NA
At-Risk					-1.24	0.33	***	0.29 (3.44)
Number of students/schools	1803 / 6				1339 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.61		0.27		0.21			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are male, White/Other, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. Due to convergence issues, economic disadvantage was removed from the covariate model.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table 2.34. Biology EOC Meets Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-2.05	0.43	***	NA	-1.24	0.61	*	NA
Length	0.33	0.04	***	NA	0.29	0.08	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.23	0.10	***	NA
Female					-0.17	0.14	ns	NA
Hispanic (versus White/Other)					-0.20	0.32	ns	NA
African American (versus White/Other)					-0.89	0.38	*	0.41 (2.43)
English Learner					-0.12	0.30	ns	NA
Economically Disadvantaged					0.08	0.19	ns	NA
At-Risk					-1.00	0.16	***	0.37 (2.71)
Number of students/schools	1803 / 6				1339 / 6			
School level variance	Intercept only		Main model		Covariate model			
	1.08		0.88		0.59			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

U.S. HISTORY*.* Length of time in cohort was a significant predictor for all models. Students who were in the cohort for a longer time were more to reach both the Approaches Grade Level and Meets Grade Level standards in the MLMs on the U.S. History EOC (see Tables 2.35 and 2.36). As with Biology, most (88%) of the students who were in the cohort four to six years reached the Approaches Grade Level standard for U.S. History, compared to about 73% of students who were in the cohort for one to three years. Almost half (49%) of students who were in the cohort four to six years reached the Meets Grade Level standard for U.S. History, compared to one-third (33%) of students who were in the cohort for one to three years.

Table 2.35. U.S. History EOC Approaches Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	0.75	0.31	*	NA	0.63	1.17	ns	NA
Length	0.27	0.04	***	NA	0.64	0.17	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.22	0.16	***	NA
Female					-0.52	0.22	*	0.59 (1.69)
Hispanic (versus White/Other)					-0.74	0.77	ns	NA
African American (versus White/Other)					-1.50	0.80	ns	NA
English Learner					-0.23	0.31	ns	NA
At-Risk					-0.84	0.33	*	0.43 (2.32)
Number of students/schools				1686 / 6		1133 / 6		
School level variance		Intercept only		Main model		Covariate model		
		0.5		0.34		0.02		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. Due to convergence issues, economic disadvantage was removed from the covariate model.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table 2.36. U.S. History EOC Meets Standard: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-0.90	0.30	**	NA	-1.94	0.87	*	NA
Length	0.18	0.03	***	NA	0.53	0.15	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.36	0.11	***	NA
Female					-1.13	0.16	***	0.32 (3.11)
African American (versus White/Other)					-0.76	0.25	**	0.47 (2.14)
English Learner					-0.78	0.33	*	0.46 (2.17)
At-Risk					-0.92	0.18	***	0.4 (2.51)
Number of students/schools	1686 / 6				1133 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.44		0.37		0.13			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. Due to convergence issues, economic disadvantage was removed from the covariate model.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

SUMMARY: LENGTH OF TIME IN COHORT AND EOC ACHIEVEMENT

Length of time in cohort was a predictor in all of the MLMs in this section. Students who participated in Texas GEAR UP SG for longer periods of time were more likely to reach Approaches Grade Level standard and Meets Grade Level standard for all five EOCs (i.e., Algebra I, English I, English II, Biology, and U.S. History EOC). Examination of means for students who were in the cohort for one to three years and vs. those who were in the cohort for four to six years revealed large, consistent differences in outcomes.

On-time Promotion and Graduation

The impact of length in time in cohort on on-time promotion from Grade 9 to 10, on-time graduation, and graduation under the Foundation High School Program with an endorsement or at the distinguished level of achievement was examined.

ON-TIME PROMOTION FROM GRADE 9 TO 10

Length of time in cohort was a significant predictor of promotion from Grade 9 to 10 on time in the MLM models. Students who were in the cohort for a longer period of time were more likely to have been promoted to Grade 10 on time (see Table 2.37). There were large differences in means; 96% students who had been in the cohort for four to six years were promoted on time compared to only 50% of the students who had been in the cohort for one to three years.

Table 2.37. On-time Promotion from Grade 9 to Grade 10: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-1.42	0.16	***	NA	-3.99	0.62	***	NA
Length	0.84	0.04	***	NA	1.50	0.10	***	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.50	0.12	***	NA
Female					0.43	0.22	ns	NA
Hispanic (versus White/Other)					-0.44	0.50	ns	NA
African American (versus White/Other)					-0.35	0.53	ns	NA
English Learner					0.75	0.37	*	2.13
Economically Disadvantaged					0.16	0.31	ns	NA
At-Risk					-0.56	0.27	*	0.57 (1.74)
Number of students/schools			2233 / 6			1487 / 6		
School level variance		Intercept only		Main model		Covariate model		
		0.64		0.02		<0.01		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

GRADUATION

Length of time in cohort was a significant predictor of on-time graduation in the MLM main model. Students who were in the cohort for a longer period of time we more likely to graduate on-time. However, in the covariate model, once prior STAAR achievement and other student characteristics were taken into account, cohort group was no longer a significant predictor of on-time graduation (see Table C.30, Appendix C).

GRADUATION UNDER FOUNDATION HIGH SCHOOL PROGRAM WITH AN ENDORSEMENT OR DISTINGUISHED LEVEL OF ACHIEVEMENT

Length of time in cohort was not a significant predictor of graduation with the Foundation High School Program plus endorsement or at the distinguished level of achievement (see Table C.31, Appendix C).

SUMMARY: LENGTH OF TIME IN COHORT AND ON-TIME PROMOTION AND GRADUATION

Students who were in the Texas GEAR UP SG primary cohort for a longer period of time were more likely to be promoted from Grade 9 to 10 on time. However, there were no differences in the covariate MLMs for graduating on time or graduating under the Foundation High School Program plus endorsement or at the distinguished level of achievement.

Section Summary

Length of time in cohort was a strong predictor for almost all of the outcomes examined. Students who participated in Texas GEAR UP SG for a longer period of time were more likely to reach the Approaches Grade Level standard and Meets Grade Level standard on all five

STAAR EOCs. Comparisons of means for students who were in the cohort from one to three years vs. those in the cohort for four to six years revealed large and consistent differences between the groups. Students in the cohort for four to six years were much more likely to reach the Approaches Grade Level and Meets Grade Level standards than students who were in the cohort for only one to three years. They were also more likely to be promoted from Grade 9 to 10 on time. However, length of time in cohort was not a predictor on-time graduation or graduation under the Foundation High School Program with an endorsement or at the distinguished level of achievement.

These results indicate that Texas GEAR UP SG participation was of benefit to students, but the benefit was, not surprisingly, affected by amount of participation in the program. Students who were enrolled for a longer period of time at Texas GEAR UP campuses had better outcomes than students who were enrolled for a shorter period of time. These results are reasonably sound because the covariate MLMs control for many of the known differences between students (e.g., Grade 7 STAAR Reading performance, at-risk status).

However, there are other potential pre-existing differences between students who were enrolled at schools in the primary cohort for lower amounts of time (e.g., one year) and those who enrolled for more years. At least some of the students enrolled for longer periods of time likely had more stable family and peer structures than students enrolled for shorter periods of time. These unmeasurable differences may have contributed to the findings.

3. Summary and Conclusion

Key Findings

In this section, findings where the key variable of interest (i.e., cohort group or length of time in cohort) was a significant predictor in the covariate MLM will be discussed. There were several findings of mean differences between groups that disappeared once student characteristics and prior academic performance were taken into account. Because there were also differences found between group composition, including differences in the percentage of students who were economically disadvantaged, models that control for these pre-existing differences between groups are critical for understanding the results.

Advanced Course Completion

The most significant success of Texas GEAR UP SG was in encouraging students to take advanced coursework. The Texas GEAR UP State Grant Program Evaluation Grades 7-8 Comprehensive Report (Hutson et. al, 2018) detailed the success rate of getting students to complete Algebra I by Grade 8 – by the end of that grade, almost twice the percentage of students had completed Algebra I in the primary cohort (30%) as in the retrospective cohort (17%). This report found that this high level of completion was retained for the two follow-on cohorts, both of which had almost one-third of students complete Algebra I by Grade 8.

Students in the primary cohort and two follow-on cohorts were also more likely to complete Algebra I by Grade 9 than students in the retrospective cohort. This finding indicates that there may have been changes in schoolwide policies and practices that encouraged early Algebra I completion. There were no increases, however, in Algebra II completion.

In terms of college coursework completion, students in the primary cohort were more likely than students in the retrospective cohort to complete AP courses and to earn college credit via dual credit course completion than students in the retrospective cohort. Earning of college credit hours via dual credit course completion was still very low, however (only 4% of students earned college credit in this manner by the end of Grade 12).

It is important to note that there were no differences between the primary and comparison cohorts on any of the covariate MLM models that controlled for pre-existing differences between students. Thus, it is possible that these changes in advanced course completion were driven by a shift in student course taking that happened throughout the state and was not caused by GEAR UP programming.

End-of-Course Assessments

The differences favoring the primary cohort vs. the retrospective cohort in terms of Algebra I completion extended to performance on the Algebra I EOC. Students in the primary cohort were more likely to reach the Approaches Grade Level standard on Algebra I EOC than students in the retrospective cohort in the covariate MLM. More students in the primary cohort reached the Meets Grade Level standard.

In contrast. students in the retrospective cohort were more likely to reach the Approaches Grade Level standard on Biology EOC. They were also more likely to meet both the Approaches Grade Level and Meets Grade Level standards for English I EOC and U.S. History EOC than students in the primary cohort. There were no differences between groups on English II EOC. There were no differences between the primary and comparison cohorts on any EOC exam once prior STAAR performance and other student characteristics were taken into account.

Some of the observed differences in STAAR EOC performance between the primary and retrospective cohort might be explained by changes in EOC standards over time. Notably, the criteria for reaching Approaches Grade Level increased from Spring 2015 to Spring 2016, and

thus the primary cohort was subject to more challenging standards than the retrospective cohort for several assessments, particularly for U.S. History and English II. However, standards did not change for Meets Grade Level over time, and students in the retrospective cohort were more likely to reach this standard for two assessments, so changing standards cannot account for all the differences between groups.

Another explanation is that the emphasis on students taking advanced coursework, particularly in mathematics, may lead to strains on students and teachers for other subject areas. Students in the primary cohort clearly excelled in Algebra I completion and STAAR performance when compared to the retrospective cohort. These gains may have come at a cost to excellence in other coursework, or in the ability to adequately prepare for standardized testing.

It is also important to note that there were no differences in performance in the covariate MLMs for the primary and comparison cohorts for any of the STAAR EOCs. Therefore, once again, differences between groups may be explained by differences in the test makeup each year, or by statewide changes in policy or curriculum.

On-Time Promotion and Graduation

Students in the primary cohort were more likely to be promoted on time from Grade 9 to Grade 10 than students in the retrospective cohort both at the group level and in the main MLM, but once prior STAAR performance and other student characteristics were controlled, retrospective cohort students were more likely to be promoted than primary cohort students. There was a similar finding for students in the follow-on cohorts: in the MLM models, the retrospective cohort students were more likely to be promoted on time than students in the primary cohort, once prior STAAR performance and other student characteristics were taken into account.

There were no differences in the MLM models for on-time graduation or for graduating under the Foundation High School Program plus endorsement or at the distinguished level of achievement. About 92% of Texas GEAR UP SG primary cohort students graduated on time, slightly higher than the state average.

Length of Time in Cohort

Length of time in cohort was a strong predictor for almost all of the outcomes examined. Students who participated in Texas GEAR UP SG for a longer period of time were more likely to reach the Approaches Grade Level standard and Meets Grade Level standard on all five STAAR EOCs. They were also more likely to be promoted from Grade 9 to 10 on time. However, length of time in cohort was not a predictor of on-time graduation or graduating under the Foundation High School Program with an endorsement or with a distinguished level of achievement.

These findings were encouraging, but it is important to remember that students who were in the cohort for the longest period of time (six years) may have been fundamentally different from students who were in the cohort for less time, and these differences may not have been controlled for in the data. For instance, students who did not change schools may have had more stable family dynamics, peer groups, and support networks, and those things caused the improvement in outcomes and not participation in Texas GEAR UP SG.

Limitations

In addition to some of the limitations already noted, readers are cautioned that findings with regard to student outcomes were considered to be associated with Texas GEAR UP SG, rather than caused by Texas GEAR UP SG. The retrospective cohort and matched comparison schools provided the best possible comparison groups given the context of the design of the Texas GEAR UP SG program. Models presented in this report control for factors that are measurable (i.e., collected by schools and reported to TEA) but other factors that are not

measurable (e.g., student motivation) may also contribute to change. This is true whether findings were significant or not significant.

Additionally, this report focuses on short-term outcomes that are very specific and measurable. Some of the GEAR UP SG activities that occurred in Grade 9 to 12 may not be associated with outcomes to date but may eventually be associated with the longer-term goals of the program including enrolling in and attending a postsecondary educational institution.

Recommendations

Collectively the findings suggest several possible recommendations both as next steps going forward and for other schools initiating GEAR UP programs (or programs with goals similar to GEAR UP).

Algebra Completion

The findings from the two comprehensive reports regarding Algebra I completion suggest that it is possible to substantially increase the percentage of students who successfully complete the course in Grade 8 and 9. The analyses on overall level of participation and length of time in the cohort associated with Algebra I completion collectively suggest that encouraging participation at a high level and early (Grade 7) may be key to achieving this goal. Students in the primary cohort were also more likely to achieve Meets Grade Level standard on the Algebra I EOC assessment than students in the retrospective cohort.

Additionally, findings from the results of the two follow-on cohorts suggest that many of the changes made at schools that supported early Algebra I completion were sustained by the schools in the primary cohort. Even up to two years after the program, almost one-third of students in the cohort completed Algebra I in Grade 8 (compared to only 17% in the retrospective cohort) and were more likely to complete Algebra I by Grade 9 than students in the retrospective cohort.

However, there were no differences between cohort groups for Algebra II completion, meaning that even though students in the primary cohort had an early advantage for mathematics course completion, there was no lasting advantage through the end of high school for advanced mathematics course completion. It is possible that districts did not change the way they promoted Algebra II completion in response to the grant. If a goal of future programs is to increase advanced mathematics course taking through the end of high school, efforts should start early (as in the Texas GEAR UP SG, where students were encouraged to take Algebra I in Grade 8) and continue as students continue through high school.

AP and Dual Credit Courses

Despite there being no significant differences in Algebra II completion, Texas GEAR UP SG clearly encouraged other advanced course completion. Students in the primary cohort were more likely to complete AP courses than students in the retrospective cohort and to earn college credit via dual credit course completion.

STAAR EOCs and On-Time Promotion

Results for STAAR EOCs and on-time promotion from Grade 9 to 10 generally favored the retrospective cohort. These results may indicate that there may be a cost to schools emphasizing advanced course completion. Resources may become stretched, leaving fewer resources to assist students who need extra help to achieve on STAAR or to reach the criteria needed to be promoted on time. Although schools that participated in the program had high tutoring, mentoring, and counseling rates (see, for example, Briggs et. al, 2016 and Spinney et. al 2019), they may have needed additional supports to ensure that students met the standards required and passed courses so they could be promoted on time.

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Appendix A: Evaluation Questions and Project Goals

A.1 Evaluation Questions

Table A.1 provides an overview of the evaluation questions. Some questions are addressed in the Annual Implementation Reports. Other evaluation questions will be addressed in future reports. Throughout this comprehensive report, the specific evaluation questions being addressed were identified. The list of evaluation questions will be expanded as appropriate to each report. In addition, several of the research questions described below focus on understanding when and how implementation changes. For this report, the focus is on first period of implementation only.

Table A.1. Texas GEAR UP SG Evaluation Questions

Evaluation Questions
1. Implementation of Texas Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) State Grant (SG) Strategies and Identification of Potential Best Practices
1.1 To evaluate implementation of Texas GEAR UP SG strategies intended for teacher professional development (PD) to improve academic rigor and data-driven instruction
1.1.1 What types of PD implementation strategies were identified by grantees in their action plans?
1.1.2 Each year, when and to what extent did grantees implement PD strategies?
1.1.3 What percentage of core content teachers had the opportunity to participate in PD training regarding each of the following: differentiated instruction, advanced instructional strategies, project-based learning (PBL), other? What percentage of core content teachers actually participated in each PD opportunity? To what extent, if any, did teachers other than core content teachers have an opportunity to participate and actually participate in PD?
1.1.4 When and how did grantees provide PD regarding vertical team preparation and implementation to Middle School and High School teachers? Were appropriate teachers from all schools on the vertical team able to attend the PD?
1.1.5 What are perceptions of teachers who attend given PD regarding: training itself, impact on teacher practice, and impact on vertical alignment, as appropriate to training?
1.1.6 What facilitators and barriers can be identified to implementing PD opportunities? If barriers to implementing were identified, to what extend were grantees able to overcome such barriers and how? Do grantees anticipate and are they able to overcome barriers in following years?
1.1.7 In what ways are trained teachers implementing data driven strategies? Differentiated instruction? PBL?
1.2 To evaluate implementation of student support services Texas GEAR UP SG strategies
1.2.1 What types of student support services implementation strategies were identified by grantees in their action plans?
1.2.2 What types of information were utilized to identify students for participation in student support services implementation activities?
1.2.3 When and to what extent did grantees implement student support services strategies with students?

Evaluation Questions
1.2.4 What are student, parent, and staff perceptions of student support services implementation strategies?
1.2.5 What facilitators and barriers can be identified regarding implementing student support services strategies? If barriers to implementing were identified, to what extent were grantees able to overcome such barriers and how? Do grantees anticipate and are they able to overcome barriers in following years?
1.2.6 During each year of the grant, what types of information are grantees making available to students? How do grantees inform students about opportunities to learn about college attendance and career success? How many activities are held for students to attend? How and to what extent do grantees provide information to students regarding information that is available through the state office?
1.2.7 By the end of the year, how many students (%) participate in each type of college readiness activity conducted by grantees? How many activities does each student attend?
1.2.8 What are students' levels of understanding regarding readiness (e.g., college aspirations/ expectations, college options, being postsecondary education ready at each grade level, financing college)?
1.3 To identify potential best practices
1.3.1 What practices implemented by the grantee might be identified as potential best practices based on data?
1.3.2 What practices implemented by grantees are perceived by grantees (students, parents, staff) to be effective, and therefore a potential best practice?
1.3.3 What individual strategies and/or mix of strategies were provided in each year?
2. Family, School and Community Impact
2.1 To evaluate the impact of GEAR UP on families (parents)
2.1.1 Each year of the grant, what types of information are grantees making available to students' families? How do grantees inform families about opportunities to learn about college attendance and career success? How many activities are held for parents to attend? How and to what extent do grantees provide information to parents regarding what is available through the state office?
2.1.2 By the end of each year, how many parents (%) attend each type of activity conducted by the grantees? How many activities does each parent attend?
2.1.3 Each year it is measured, what are parents' levels of understanding regarding a range of topics linked to understanding college and career readiness (e.g., college expectations and aspirations, college options, being postsecondary education ready at each grade level, financing college)? Do parents report having gained knowledge over the year based on information and activities provided by the grantee?
2.1.4 What information or opportunities do parents perceive to have been most relevant in informing them regarding college and career readiness?
2.1.5 What facilitators and barriers do schools and parents report regarding participation in college readiness activities? If barriers were identified, to what extent were grantees able to overcome such barriers and how? Do grantees anticipate and are they able to overcome barriers in following years?

Evaluation Questions
2.2 To evaluate the impact of GEAR UP on community alliances
2.2.1 At the end of each grant year, how many collaborations have schools formed with business alliances? In what ways and how often have business collaborators offered opportunities for career exploration to students?
2.2.2 At the end of each grant year, how many collaborations have schools formed with government entities? Community groups? In what ways and how often have collaborators offered opportunities for career exploration to students? Opportunities to provide information regarding scholarships, financial aid, and college awareness and readiness?
2.2.3 What are the perceptions of the school and of the community collaborators regarding the collaboration as it relates to meeting GEAR UP goals? What facilitators and barriers to collaboration are reported? If barriers were identified, to what extent were grantees able to overcome such barriers and how? Do grantees anticipate and are they able to overcome barriers in following years?
3. Statewide Impact
3.1 To evaluate the impact of GEAR UP on statewide availability of information and professional learning opportunities
3.1.1 What types of information regarding college readiness have been made available through the state? Are there any topics relevant to college readiness not yet available?
3.1.2 What steps if any has the state office taken to communicate to schools and families about information available?
3.1.3 Each year, how many GEAR UP professional learning opportunities are made available to educators (e.g., Project Share, face-to-face)? How many educators, including those not at current GEAR UP campuses, are participating in such opportunities?
4. Cost and Sustainability Outcomes
4.1 To evaluate use of GEAR UP funding
4.1.1 For what services and activities do grantees use grant funds each year and over the entire time period of the grant?
4.1.2 To what extent were grantees able to secure matching funds?
4.1.3 For what services and activities do grantees use matching funds each year and over the entire time period of the grant?
4.2 To evaluate sustainability of GEAR UP implementation
4.2.1 To what extent are grantees able to sustain activities initiated with the Texas GEAR UP SG cohort with following cohorts of students?

A.2   Texas GEAR UP State Grant Project Goals and Objectives

Project objectives that were addressed in even a preliminary manner were presented within the report. The following is a list of all project objectives outlined by Texas Education Agency (TEA) in the federal grant proposal.

Project Goal 1 - Improve instruction and expand academic opportunities in mathematics and science.

- Project Objective 1.1: By the end of the project's second year, 30% of cohort students will have completed Algebra I in the Grade 8. By the end of the project's third year, 85% of students will have completed Algebra I.
- Project Objective 1.2 - By the end of the project's sixth year, the percentage of cohort students graduating on the Foundation High School Program with an endorsement or at the distinguished level of achievement, including four years of credits in each core subject, will meet or exceed the state average.

Project Goal 2 - Increase access to and success in quality advanced academic programs.

- Project Objective 2.1: By the end of the project's fourth year, all participating high schools will make opportunities available for each student to complete 18 hours of college credit [through Advanced Placement (AP), dual credit, or concurrent enrollment] by the time he or she graduates from high school.
- Project Objective 2.2: By the end of the project's fifth year, 60% of the cohort, including English Language Learner (EL) students, will complete a pre-AP or AP course.
- Project Objective 2.3: By the end of the project's sixth year, at least 50% of cohort students will graduate with college credit earned by AP exam or through dual credit.

Project Goal 3 - Provide PD for strong data-driven instruction.

- Project Objective 3.1: In each grant year, all core content teachers will have the opportunity to participate in training regarding differentiated instruction, advanced instructional strategies, and project-based learning.
- Project Objective 3.2: In each grant year, teams of teachers at the middle and high school will complete at least five days of vertical teams preparation and implementation each year.

Project Goal 4 – Provide a network of strong student support services to promote on-time promotion and academic preparation for college.

- Project Objective 4.1: By the end of the second year, at least 75% of the Grade 8 students will be involved in a comprehensive mentoring, counseling, and/or tutoring program based on results of teacher/counselor input and diagnostic data.
- Project Objective 4.2: Beginning in the second year, at least 30% of the students will be involved in summer programs and institutes designed to help them work at or above grade level, ease transitions, and increase college awareness.
- Project Objective 4.3: By the end of the project's third year (i.e., between Grade 9 and Grade 10), the on-time promotion rate of cohort students will exceed the state average.
- Project Objective 4.4: By the end of the project's fifth year, 70% of GEAR UP students will have knowledge of, and demonstrate, necessary academic preparation for college.

Project Goal 5 - Promote high school completion and college attendance.

- Project Objective 5.1: By the end of the project's fourth year, all cohort students will complete the ACT Aspire or the Preliminary SAT/National Merit Scholarship Qualifying Test (PSAT/NMSQT) or PSAT-10.[33] By the end of the project's fifth year, all cohort students will complete the SAT or ACT.

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[33] Texas GEAR UP SG initially indicated a goal aligned with students taking ACT PLAN by the end of project's fourth year. However, ACT has replaced PLAN with ACT Aspire. Similarly, the PSAT has been replaced by the PSAT/NMSQT and PSAT-10.

- Project Objective 5.2: By the end of the project's sixth year, the percentage of students meeting criterion on the ACT/SAT will meet or exceed the state average.
- Project Objective 5.3: At the end of the project's sixth year, the number of students who graduate postsecondary education ready in mathematics and English will meet or exceed the state average.
- Project Objective 5.4: At the end of the project's sixth year, the cohort completion rate will meet or exceed the state average.
- Project Objective 5.5: At the beginning of the seventh year, more than 50% of cohort of students will enroll in postsecondary education in the fall after high school graduation.

Project Goal 6 - Meet or exceed state average for first-year college retention.
- Project Objective 6.1: The student retention rate for the second semester and the second year of college will meet or exceed the state average.
- Project Objective 6.2: At the end of the project's seventh year, the number of students on track to complete college will exceed the average postsecondary completion rate.

Project Goal 7 - Increase the availability of postsecondary information and knowledge-building opportunities.
- Project Objective 7.1: By the end of the first year, the state office will make information regarding college options, preparation, and financing will be made available to students, parents, and educators throughout the state.
- Project Objective 7.2: By the end of the first year, information and workshops aimed at linking college attendance to career success will be available to 100% of cohort students and their parents.
- Project Objective 7.3: Each year, at least 50% of cohort parents, including parents of current and former EL students, will attend at least three college awareness activities.
- Project Objective 7.4: By the end of the project's fifth year, teachers and counselors will complete training in the college admissions and financial aid process.

Project Goal 8 - Build and expand community alliances.
- Project Objective 8.1: All participating districts will form business alliances that support higher student achievement and offer opportunities for career exploration.
- Project Objective 8.2: Participating campuses will form alliances with governmental entities and community groups to enhance the information available to students regarding scholarships, financial aid, and college awareness.

Project Goal 9 - Promote college readiness statewide.
- Project Objective 9.1: Each year, the project will increase the number of educators participating in GEAR UP professional learning, including through Project Share and face-to-face trainings.
- Project Objective 9.2: By the end of the project's sixth year, at least 40% of Texas school districts will have utilized at least one Texas GEAR UP statewide resource, including materials and PD.

Appendix B: Evaluation Design, Methods, and Analytics

This appendix provides a more detailed description of the Texas Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) State Grant (SG) evaluation design, as well as specific on methods and analyses used in this report.

B.1 Longitudinal Design

One important aspect of the evaluation design is to study Texas GEAR UP SG longitudinally. The Texas GEAR UP SG evaluation is based on a cohort model design. Texas GEAR UP SG services were first provided to Grade 7 students (called the primary cohort in this report) in participating districts during the 2012–13 school year and continues through the first year of enrollment at a postsecondary institution (the 2018–19 school year).

There were three additional cohort groups of interest for the purposes of the evaluation. The retrospective cohort is a group of students who are in the same schools as the primary cohort but are one grade level ahead of the Texas GEAR UP SG primary cohort. The comparison cohort are students at similar schools to the primary cohort who did not have Texas GEAR UP SG available.

Similarly, it was hoped that future cohorts of students would benefit from sustained implementation of the program with new students. The potential cohorts of interest are presented in Table B.1.[34]

Table B.1. Texas GEAR UP SG Cohorts of Data Collected During the Seven-Year Grant

Cohort	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	First Year of College
Retrospective Cohort	Baseline: Prior to GEAR UP	Grant Year 1	Grant Year 2	Grant Year 3	Grant Year 4	Grant Year 5	Grant Year 6
Primary Cohort	Baseline: Grant Year 1	Grant Year 2	Grant Year 3	Grant Year 4	Grant Year 5	Grant Year 6	Grant Year 7
Follow on Cohort 1	Baseline: Grant Year 2	Grant Year 3	Grant Year 4	Grant Year 5	Grant Year 6	Grant Year 7	
Follow on Cohort 2	Baseline: Grant Year 3	Grant Year 4	Grant Year 5	Grant Year 6	Grant Year 7		
Follow on Cohort 3 (not measured)	Baseline: Grant Year 4	Grant Year 5	Grant Year 6	Grant Year 7			
Follow on Cohort 4 (not measured)	Baseline: Grant Year 5	Grant Year 6	Grant Year 7				
Follow on Cohort 5 (not measured)	Baseline: Grant Year 6	Grant Year 7					
Total number of cohorts for data in each grade	7	7	6	5	4	3	2

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[34] Outcome data often lag in availability relative to implementation data. For example, course completion data for any given school year are not available until October of the following year, at the earliest. In order for appropriate time to run analyses, outcome data will typically occur approximately six months post receipt at the earliest.

B.2   Quasi-Experimental Design

In addition to comparisons that will be made based on longitudinal aspects of the design, the ICF team utilized a quasi-experimental design (QED). The Texas GEAR UP SG schools were not selected randomly to participate, ruling out a true experimental design. Still, it is important to understand outcomes within the Texas GEAR UP SG schools in comparison to outcomes elsewhere. Specifically, outcomes at the Texas GEAR UP SG schools were compared to: a) statewide averages (where possible); and b) outcomes in comparison schools selected based on propensity-score matching (PSM) to be as similar as possible to Texas GEAR UP SG participating schools. A school-level PSM was conducted to best argue the comparability of students at the Texas GEAR UP SG schools to comparison schools.

B.2.1 Propensity Score Matching

PSM is the optimal method for establishing an equivalent comparison group in non-experimental studies. PSM refers to a class of covariate methods for constructing comparison groups based on pairing study subjects (in this case schools) based on what is known about those subjects. Propensity scores represent the estimated probability that a program participant is assigned to an intervention based on observable variables. By using PSM to identify a very close non-Texas GEAR UP SG match (or multiple matches) for each Texas GEAR UP SG school, it will be possible to estimate the value-added effect of the Texas GEAR UP program. That is, if two schools are found to be similar on a range of characteristics, but students at only one school receive the GEAR UP "treatment," then any potential differences in outcomes may be attributable to GEAR UP participation.

The PSM was conducted as a school-level matching using Academic Excellence Indicator System (AEIS) and Common Core Data: GEAR UP schools were each matched to one comparison school using the nearest-neighbor method.[35] Given that Texas GEAR UP SG is a school-wide approach, it was determined that the school level match was the most appropriate approach and a student-level match was not necessary. ICF conducted the school-level matching based on the variables in Table B.2. Student demographics were expressed as school-specific percentages per various student subgroups defined by race and ethnicity, economically disadvantaged, students' educational status (e.g., EL, Special education, retention). School characteristics included in the model were student-teacher ratio, dropout rate, and attendance rate. School-average Texas Assessment of Knowledge and Skills (TAKS) pretest scores were particularly important predictors as baseline equivalence based on them were critical for the success of the quasi-experimental study design.

The matching variables were generated as the averages across the three years prior to when Texas GEAR UP SG was first implemented (2010–2012) for all schools in the state of Texas. In some cases, only one to two years of data were available.

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[35] The nearest-neighbor method selects the *n* comparison units whose propensity scores are closets to the treated unit.

Table B.2. School Level Matching Variables

School Level Matching Variable	Data Resource	Variable Name
Campus Type*	TAPR 2013–14	GRDTYPE
Grade Span*	TAPR 2013–14	GRDSPAN
Charter School*	TAPR 2013–14	CFLCHART
Final Accountability Rating*	TAPR 2013–14	C_RATING
All Students Count	TAPR 2013–14	CPETALLC
Student: African American %	TAPR 2013–14	CPETBLAP
Student: Hispanic %	TAPR 2013–14	CPETHISP
Student: Economically Disadvantaged %	TAPR 2013–14	CPETECOP
Student: At Risk %	TAPR 2013–14	CPETRSKP
Algebra I EOC % at Phase-in Satisfactory Standard or Above	TAPR 2013–14	CA00AA11S14R
4-year Graduation Rate	TAPR 2014–15 (from 2013–14 data)	CAGC4X14R

Source. Texas Education Agency, Texas Academic Performance Reports (TAPR), 2013–14.
*Exact matching was used for these variables because these variables are categorical.

THE PROPENSITY SCORE MATCHING (PSM) MODEL

The PSM model is based on the logistic regression model where the outcome is the membership of the schools (GEAR UP schools versus non-GEAR UP schools) and predictors are a set of covariates that describe the schools and help explain the difference between GEAR UP schools and non-GEAR UP schools. The following equation expresses the basic logistic regression modeling framework:

$$Log(p_k / 1 - p_k) = \beta_{00} + \beta_{10} * predictor_k + ...$$

where

- Postscripts k stands for school
- P is a probability that a school k is a GEAR UP school (as opposed to a non-GEAR UP school)
- β's are parameters to be estimated,
- *"…"* indicates that the model will include multiple predictors and corresponding parameters

Based on derived coefficients (βs) and the values of predictors, the logistic regression model produces a statistic called predicted probability or propensity score. The propensity score is a balancing score, meaning that it balances all pretreatment group differences in observed covariates. For each GEAR UP school, comparison school with the closest propensity score was chosen. As a result, a GEAR UP school and the matched comparison school were similar in observed characteristics that are important in predicting the outcome distinction between treatment and non-treatment GEAR UP. In deriving propensity score, the logistic regression algorithm took into account the relative weight of predictors in their covariate correlation with the outcome.

Decisions regarding three aspects of the PSM are described here: a. the ratio of intervention to control cases; b. the algorithm used for matching; c. the distance metric on which the matching is based.

1. School level matching

   a. **Ratio**. A fixed 1-to-4 ratio was used; the main rationale for this choice is to create a large enough pool of potential controls for the second stage.[36]

   b. **Algorithm**. Nearest neighbor is one of the most straightforward and fast algorithms for finding comparable groups. Exact **matching** was required only for a limited subset of variables, particularly, school's grade span.

   c. **Distance metric.** The propensity score is an extremely useful metric distance that summarizes many covariates in a single measure. The propensity score is based on a logistic regression of an indicator of group membership on all the covariates for which balance is desired. For this school level regression being in the Texas GEAR UP SG group is a relatively rare occurrence (i.e., only seven cases [schools]). Alternative distance metrics were also examined in making final decisions: Mahalanobis distance; robust Mahalanobis distance; weighted Mahalanobis distance where the weights are determined to maximize balance (Diamond & Sekhon, 2012). All the alternatives and the final decisions were made based on the covariate balance they achieve.

Comparison of treatment and comparison group means on each of the school-level matching variables are displayed in Table B.3. According to What Works Clearinghouse standards, the most important predictors that need to achieve baseline equivalence are pretest averages of the two groups. Results suggest that the PSM model successfully matched the groups by keeping the TAKS pretest differences to a minimum.

Table B.3. Comparison of Means for Each Covariate Before and After Matching for the Texas GEAR UP SG and Matched Comparison Schools

	Before Matching			After Matching		
	Mean GEAR UP	**Mean Comparison**	**std diff***	**Mean GEAR UP**	**Mean Comparison**	**std diff***
Propensity (logit)	0.020	0.006	0.13	0.020	0.020	0.00
All Student Count	1055.83	1159.17	-3.86	1055.83	1206.67	-6.67
African American %	17.17	11.21	1.43	17.17	9.05	2.14
Hispanic %	72.77	44.36	5.52	72.77	78.13	-1.15
Economically Disadvantaged %	80.98	52.32	6.47	80.98	82.40	-0.35
At-risk %	62.55	48.34	3.29	62.55	64.20	-0.42
Algebra I % at Phase-in Satisfactory Standard or Above	65.67	77.00	-3.11	65.67	68.33	-0.82
4-year Graduation Rate	88.55	90.61	-0.58	88.55	88.52	0.01

Sources: Texas Education Agency, Texas Academic Performance Reports (TAPR), 2013–14.

B.3   Methodology

The Texas GEAR UP SG evaluation utilized a mixed-methods approach to best address the evaluation questions. The use of multiple methods to collect, analyze, and synthesize information related to Texas GEAR UP SG allowed for checks and balances across methods. Multiple methods allow for the triangulation of results, producing an in-depth assessment of Texas GEAR UP SG's effectiveness and providing greater confidence in evaluation findings.

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[36] There is no one-size-fits-all rule regarding how much larger than the intervention the pool of controls should be to be able to obtain a good matched sample. It depends on how far apart the two samples are to start with. How much variability there is in the control pool compared to the intervention sample also plays a role. However, as a rough indication, Rubin (1973) showed through simulations that a control pool 2 to 4 times the size of the intervention sample was adequate for quite a few situations.

Much of the data that were collected, as described in the data sources section that follows, are quantitative in nature. Evaluators collected additional qualitative data through open-ended survey items and site visit interviews and focus groups, allowing the story of Texas GEAR UP SG implementation and impact at each school/district to be told. Findings based on data collected through the range of perspectives are compared against one another throughout reporting of findings.

B.4   Data Sources and Data Collection

Evaluators used several data sources for this report, including GEAR UP Integrated Data Entry System (GUIDES) data,[37] extant data provided by TEA, student and parent survey data, and site visit data. The following sections provide an overview of each data source, including process of collecting data that were included in this report.

B.4.1   Annual Performance Reporting Data

During the 2012–13 school year (Year 1), the ICF team worked with TEA to develop an appropriate tool for collecting GUIDES data. This strategy was a one-time solution for collecting GUIDES data. Beginning in 2013–14 (Year 2), TEA's collaborator for technical assistance, The University of Texas at Austin's Institute for Public School Initiatives (UT-IPSI), contracted with a provider of a system to collect Texas GEAR UP SG GUIDES data. In 2014-15 (Year 3), TEA added another organization, Community TechKnowledge (CTK) to support data collection using GEAR UP Integrated Data Entry System (GUIDES), a customized tool for collecting Texas GEAR UP SG data. With all of these data collection efforts, Texas GEAR UP SG grantees were able to enter performance and implementation data in an ongoing manner through the final year of the grant (i.e., the 2018–19 school year).

To broadly understand what is collected for the APR, we have retained the Year 1 description here. GUIDES data collection is aligned with requirements for the U.S. Department of Education APR, submitted by TEA each year in April. Districts are asked to report on implementation and participation at the student level in Texas GEAR UP SG activities from the time of the prior APR through the end of March of the current implementation year. For example, districts indicated student enrollment in advanced courses; student participation in tutoring, mentoring, and counseling; and student participation in any Texas GEAR UP SG events held at the campus. Districts also indicated if the student's parent(s)/guardian(s) participated in any events targeted for parents. Districts provided a description of each Texas GEAR UP SG student and parent event held at their school. In addition, districts provided information on teacher participation in professional development (PD) opportunities related to the Texas GEAR UP SG and on community alliances formed to date.

B.4.2   Extant Data

Extant data refers to data that TEA already collects. TEA provides these data to the evaluation team as appropriate. The following extant data were used in writing this report:

- **TEA's Texas GEAR UP SG Grant Application and District Applications.** TEA provided its application to the federal government, district applications provided by each Texas GEAR UP SG school, and all in-place TEA agreements. These documents were reviewed to better understand the Texas GEAR UP SG grant in general and for specific information regarding planned implementation priorities. This review occurred prior to survey and site visit protocol development to inform the process.

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[37] GUIDES is used to collect a range of student level data. This data is also used to meet USDOE reporting requirements for the Texas GEAR UP SG.

- **Action Plans.** Each Texas GEAR UP SG school provides updated action plans annually. These updated plans clarified, eliminated, and added planned implementation strategies. In this report, these action plans were used to provide general insights regarding connections between what grantees planned and what was implemented. Each action plan is coded for specific implementation strategies and a comparison of planned versus actual implementation analyses is conducted.
- **Public Education Information Management System (PEIMS).** PEIMS contains student-level information collected by TEA on public education. It provides data on student demographics, attendance, high school course completion and high school completion, school personnel, and district organizational information. PEIMS variables of interest include gender, race/ethnicity, Economically Disadvantaged, At Risk status, and EL status.
- **Texas Academic Performance Report (TAPR).** TAPR is an updated version of TEA's AEIS. TAPR contains campus-level performance information about every public school and district in Texas. TAPR also provides extensive profile information about staff, finances, and programs. The evaluation also includes AEIS data from the 2009–10 school year, as data from this year informed the selection of schools for participation in Texas GEAR UP SG.
- **State of Texas Assessments of Academic Readiness (STAAR) and STAAR End-of-Course (EOC)**. STAAR contains data on Grade 8 assessments; in this report STAAR Reading was used as a covariate in the MLM models. Each of the five courses with an associated STAAR EOC were requested from TEA.

B.5　Data Security and Cleaning

The ICF team received all data provided by TEA via a secure, password protected environment.

Upon receipt of the GUIDES and PEIMS data, ICF reviewed the data and asked TEA to follow up with schools for clarification when needed. As for the first comprehensive report (Hutson et. al, 2018), prior to examining outcome data, decisions were made about cohort eligibility. Students who attended a school for only a brief period of time and did not participate in any Texas GEAR UP SG activities were generally not part of the cohort.

if students participated in any Texas GEAR UP SG activities between Grade 9 and Grade 12, they were placed in the primary cohort. Therefore, students in the retrospective cohort who were not promoted with their classmates were added to the primary cohort for all analyses except for the analysis of promotion from Grade 9 to Grade 10.

Data were also examined to ensure that no students transferred between TEXAS GEAR UP SG schools and comparison schools during the high school grant years (Grade 9, Grade 10, Grade 11 or Grade 12). It was determined that no students had moved between Texas GEAR UP SG schools and comparison schools.

B.6　Data Analytics

The goal of the first comprehensive report was to describe outcomes in the Texas GEAR UP SG schools and to identify any potential relationships between implementation and outcomes and to address progress toward specific Project Goals. Analyses compared how students at Texas GEAR UP SG schools performed relative to students in the selected comparison schools (see PSM) to students in the retrospective cohort (within Texas GEAR UP SG schools), and where appropriate to statewide averages on the academic outcomes described in the next section.

B.6.1 Outcomes used in the Analyses

- **Algebra I by Grade 9:** How many students (percentage) completed Algebra I by Grade 9?
- **Algebra II by Grade 12:** How many students (percentage) completed Algebra II by Grade 12?
- **At Least One AP Course:** How many students (percentage) completed at least one AP course?
- **Number of AP Courses Completed:** How many AP courses, on average, did students complete? This is the only non-binary outcome in the data set.
- **At Least One Dual Credit Course:** How many students (percentage) earned college credit through dual credit courses?
- **EOC Performance:** How many students (percentage) performed at the Level II Phase-in 1 standard and how many met the Level II final standard (Meets Grade Level, or Postsecondary Readiness Standard) on STAAR EOC assessments (i.e., Algebra I, English I, English II, Biology, U.S. History? These outcomes are represented as follows:
  - Algebra I Approaches Grade Level
  - Algebra I Meets Grade Level
  - English I Approaches Grade Level
  - English I Meets Grade Level
  - English II Approaches Grade Level
  - English II Meets Grade Level
  - Biology Approaches Grade Level
  - Biology Meets Grade Level
  - U.S. History Approaches Grade Level
  - U.S. History Meets Grade Level
- **On Time Promotion Grade 9 to 10:** At the end of Grade 9, how many students (percentage) were promoted on time to Grade 10?
- **On Time Graduation:** How many students (percentage) graduated with their cohort on time or early (i.e., finished high school within four years)?
- **Graduation under the Foundation High School Program with an endorsement or the distinguished level of achievement:** How many students (percentage) graduated with the Foundation High School Program with an endorsement or at the distinguished level of achievement?

The Texas GEAR UP SG primary cohort and comparison cohort consists of students who were in Grade 7 in 2012–13. The retrospective cohort students were in Grade 7 in 2011–12. The first follow-on cohort students were in Grade 7 in 2013–14, and the second follow-on cohort students were in Grade 7 in 2014–15.

B.6.2 Implementation Level with Texas GEAR UP SG cohort

The following how implementation was operationalized in two ways.

Length in Cohort: Each year, the evaluation team and TEA made decisions about whether a student would/would not be included in the cohorts. In general, these decisions were based on time in grade and participation in activities. Students are therefore coded as in the cohort in Grade 7, 8, 9, 10, 11, and 12 (up to six years). Students who attended a school for only a brief period of time and did not participate in any Texas GEAR UP SG activities were generally not part of the cohort.

The length of time in cohort variable does not differentiate between students enrolled for the entire year and students enrolled for only part of a given year. A student who was enrolled the entire school year was coded the same as a student who arrived in January of the school year and never left.

It is important to note that, while we were able to obtain student outcome data for students who remained in Texas public schools, even if they left a Texas GEAR UP campus, some students (i.e., those who no longer attended a Texas public school) who stopped attending a Texas GEAR UP SG school did not have available student outcome data. Therefore, students who did not have data for all years for an outcome were excluded from the analysis for that outcome. For example, a student who was not in the cohort in Grade 10 but was in the cohort in Grade 9, 11, and 12 would be excluded from the analysis regarding Algebra II completion by Grade 12, as it is possible that not having a record of Algebra II completion was due to missing data.

B.6.3 Evaluation questions and Associated Analyses

Table B.4 summarizes the proposed student impact questions to be examined in the report. Implementation variables were described in the prior section. Additional variables used in these analyses include:

- **Cohort Group**: primary cohort versus comparison cohort primary cohort versus retrospective cohort, primary cohort versus follow-on cohort 1, retrospective cohort versus follow-on cohort 1, primary cohort versus follow-on cohort 2, retrospective cohort versus follow-on cohort 2.
- **Student Characteristics**: gender, race/ethnicity, economic disadvantage, EL status, at-risk status

For analyzing student academic outcomes, the analysis team relied on the multilevel modeling (MLM) framework that adjusts for the correlated error structure inherent in education data. As detailed later, the MLM model is suitable for data where students are nested within schools and thus observations do not meet the independent assumption. For questions comparing to state or national averages, descriptive statistics are used. The next section describes how the MLM modeling framework accommodates the proposed analytical approaches: the main impact analysis, the statistical interaction analysis, and the implementation as predictor analysis.

Table B.4. GEAR UP Evaluation Questions and Analytic Approach

#	Objective	Evaluation Question	Variables
College Readiness			
1	1.1	1a How many students (%) successfully completed Algebra I in Grade 8?	1.1a Algebra I Completion (COURSE_RESULT) in Grade 8 for F1, F2
		1b How many students (%) successfully completed Algebra I in Grade 9?	1.1b Algebra I Completion (COURSE_RESULT) in Grade 9 for P, C, R, F1, F2
		1c How many students (%) successfully completed Algebra II by Grade 12?	1.1c Algebra II Completion (COURSE_RESULT) in Grade 9, 10, 11, 12 for P, C, R
			completed equals Pass (variable coded as pass/fail/incomplete)
2	5.3	How many students (%) performed at the college readiness level ("Meets") on STAAR EOC? (NOTE Examines both the % at "Approaches" (passing standard) and "Meets" (Postsecondary Readiness standard)	Level on English I Level on English II Level on Algebra I Level on Biology Level on U.S. History For P, C, R, F1, F2
3	2.2	3. How many AP courses (mean) are completed?	COURSE_COMPLETION_INDICATOR COURSE_DESCRIPTION to identify AP courses for P
4	2.3	4. How many students (%) graduate with college credit via dual credit enrollment?	4a. PEIMS COLLEGE_CREDIT_HOURS for P, C, R 4b. From GUIDES for P
On-time Promotion & Graduation			
5	4.3	5. How many students (%) are promoted on time from Grade 9 to Grade 10?	On time promotion for Grade 9 to 10 for P, C, R, F1, F2 (to extent possible) NOTE: Defined as in one grade level in PEIMS in one year and in the next grade in fall of following year; for example in Grade 9 in PEIMS 2013–14 and in Grade 10 PEIMS fall snapshot 2014–2015.
6	5.4	6. How many students (%) graduated on time or early?	LEAVER_REASON_CODE = 1 (for P, C, R)
7	1.2	7. How many students (%) graduate with the Foundation HS or Distinguished graduation endorsement?	PEIMS GRADUATION_TYPE_CODE = 34 (Foundation) or 32 (Distinguished) for PCR

Note: P = Primary cohort. C= comparison cohort, R = retrospective cohort, F1 = follow-on cohort 1, F2 = follow-on cohort 2

B.6.4 Analytic Models

The majority of the outcomes described in Section 2.1 are categorical rather than continuous. This means that rather than examining mean group differences based on average scores, the analyses will assess the ability to predict the category outcome (e.g., Met Standard on STAAR).

For each outcome a series of models were run, with school group and cohort group as the primary comparison variables of interest.

- **Descriptive Analyses**: First, basic analysis (chi-square or t-test) examined descriptive differences in outcomes by student characteristic variables. These analyses first assessed whether each outcome was associated with each of the student characteristic variables (e.g., gender). Then, differences in outcomes at the cohort group level were examined for each cohort (e.g., primary cohort vs. comparison cohort).
- **Main Impact Model:** The main impact model examined differences in outcomes associated with the school-level grouping variables (i.e., school group, cohort group). This model examined the relationship between the given grouping variable and each outcome. When the grouping variable was significant, the ability to predict the given outcome was increased based on knowing the level of the grouping variable. The main impact model determined if the association between grouping and outcome occurred after accounting for any differences in outcomes occurring across schools.
- **Covariate Model:** The covariate model retained the grouping variable and included additional variables that might also predict the outcomes to determine if the grouping variable was associated with the outcome after accounting for other potential contributors associated to the outcome. Additional variables included Grade 8 STAAR Reading as a marker for prior achievement given that students who are relatively more/less successful in one year may also be successful at that same level in future years. STAAR Reading was used because there was more data available for this variable than STAAR Mathematics, and scores on STAAR assessments are generally highly correlated. In addition, this model included the four student characteristic variables. Each of the variables in the model might be associated (significantly) with the outcomes. If the grouping variable was significant, then again knowing group membership added to the ability to predict the outcome after accounting for any ability to predict from the other variables in the model.

The primary analytical model used was multilevel modeling (MLM). More specifically, because all outcomes were binary (categorical), a type of hierarchical linear modeling called multilevel logistic regression modeling was used. Many statistical approaches (e.g., ANCOVA, classic linear regression) rely on the independence assumption, which is violated in data where student outcomes are clustered/correlated within schools. The reason for this is that when students share the same schools, they share other key characteristics (e.g., teachers, principal, location of school) with their schoolmates—and thus, they are not truly independent from one another.

The classical statistical tests most likely underestimate the amount of imprecision in the data which leads to overly optimistic and misleading statistical test results. By explicitly incorporating the imprecision of between-school variance into the estimation process, the MLM model adjusts for the clustering problem and derives more realistic estimates of standard errors, providing conservative statistical test results.

As summarized in Table B.5, the MLM model examined the impact of the Texas GEAR UP intervention on student outcomes, To elaborate how these analytical questions are examined with data, the next sections provide additional detailed specifications of MLM models.

THE MAIN IMPACT MLM ANALYSIS

Evaluation questions: 2.1.9 (b)

The following MLM equations summarize the Main Impact MLM analysis and addresses evaluation question 2.1.9(b). The model addresses the main question, *"*Did attending a school with Texas GEAR UP SG result in different outcomes than attendance at similar comparison schools?" As mentioned, outcome variables were binary (e.g., yes/no completed Algebra I), so the following

examines the probability that students achieve a higher level in outcome variables than a lower level.

Table B.5. The Main Impact MLM Equations for Binary Outcomes

For binary outcomes:
Level 1: $\log(P/(1-P)) = \beta_{0j} + \beta_{1j} * \mathrm{Pr}\,etest_{ij} + ...$
Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01} * Treatment + u_{0j}$
Level 2: $\beta_{1j} = \gamma_{10}$
Where • P stands for the probability that a student successfully completes a course. • postscripts *i* and *j* index, respectively, student and school • β's and γ's are parameters to be estimated • *Treatment* is a binary indicator (1 if GEAR UP school, else 0) *"…"* indicates that the model will include multiple predictors and corresponding parameters *u*'s are school-specific residuals (estimated as random effects) and they are independently and identically distributed with a mean of 0.

The model uses a logistic function suitable for analyzing the binary outcome (i.e., logistic regression). The outcome examined was the probability of students, for example, of successfully completing an Algebra I course (represented as P in the model). The model explicitly drives school differences as level-2 intercepts or random effects (expressed as β_{0j} in the equation) and uses the level-2 intervention variable to analyze the outcome variation between Texas GEAR UP SG and comparison schools. Because the model includes both level-1 and level-2 covariates, the impact coefficient (γ_{01}) will measure the net magnitude of the Texas GEAR UP SG program effectiveness on student outcome and helps evaluate the hypothesis that GEAR UP school students performed better than comparison schools on outcomes. Analyses were conducted for outcomes with Grade 8 STAAR Reading as a pretest covariate as appropriate.[38]

As mentioned, some student-level grouping variables were entered into the model, so their correlation on the outcome variables will be adjusted. To assess the program impact, a binary variable "Treatment" in the equation represents "school group" which differentiates six Texas GEAR UP SG schools (Treatment=1) and six non-GEAR UP schools (Treatment=0). The same set of covariates was used for all models discussed later:

- Gender
- Race and Ethnicity (White, African American, Hispanic)
- Economically Disadvantaged
- EL
- At-risk Status
- Prior scale score on state assessment (STAAR 8 Reading) was included as a pretest covariate. STAAR Scale Scores were first transformed into z-scores before being used in the model.

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[38] Prior year STAAR was used as a covariate.

B.6.5 Cohort Data Cleaning Details

Comparison schools were selected by propensity score matching based on the similarity of schools participating in the Texas GEAR UP SG (see Appendix B, Section B.2.1). While the schools are similar and remain stable, students may enter or leave a given school at any point during the school year. In order to understand the impact of the Texas GEAR UP SG, it is crucial to understand to what extent students have been exposed to the program. In addition, it is important to ensure that students in the comparison group do not move to the TEXAS GEAR UP SG schools and do not participate in the program. Therefore, as for the first comprehensive report (Hutson et. al, 2018), prior to examining outcome data, decisions were made regarding students' placement as having been in the Texas GEAR UP SG or not. Generally, if students participated in any Texas GEAR UP SG activities between Grade 9 and Grade 12, they were retained in the GEAR UP cohort. After data examination, there were no students moving between TEXAS GEAR UP SG schools and comparison schools during the high school grant years (Grade 9 to Grade 12). Therefore, the primary cohort contains a total of 2,933 GEAR UP SG students and 3,223 comparison students. While these decisions provide a potential overall number, please note that the number will vary based on availability of the given outcome data presented in the remainder of this report.

B.7   References

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Appendix C: Additional Tables

Table C.1. Algebra I Completion by Grade 9: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Algebra I Completion by Grade 9

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	71%	70%		1575	1937	0.15	ns

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	0.97	0.2	***	NA	1.44	0.24	***	NA
Group (primary cohort versus comparison cohort)	-0.06	0.29	ns	NA	0.20	0.15	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.75	0.06	***	NA
Female					0.50	0.08	***	1.65
Hispanic (versus White/Other)					0.01	0.20	ns	NA
African American (versus White/Other)					-0.45	0.24	ns	NA
English Learner					0.23	0.13	ns	NA
Economically Disadvantaged					-0.14	0.14	ns	NA
At-Risk					-0.75	0.11	***	0.47 (2.12)

Number of students/schools	3512 / 12			3376 / 12	
School level variance	Intercept only	Main model	Covariate model		
	0.22	0.22	0.04		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grades 8 and 9 to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.2. Algebra II Completion by Grade 12: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Algebra II Completion by Grade 12

| | Cohort Percentages | | | Number in Cohort | | Test Results | |
	Primary	Comparison		Primary	Comparison	χ^2	sig
	81%	83%		1164	1317	1.48	ns

MLM Regression Models

| | Main Model | | | | Covariate Model | | | |
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.59	0.15	***	NA	1.72	0.34	***	NA
Group (primary cohort versus comparison cohort)	-0.10	0.21	ns	NA	-0.14	0.19	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.38	0.08	***	NA
Female					0.53	0.12	***	1.69
Hispanic (versus White/Other)					-0.11	0.30	ns	NA
African American (versus White/Other)					-0.16	0.35	ns	NA
English Learner					0.04	0.19	ns	NA
Economically Disadvantaged					0.11	0.19	ns	NA
At-Risk					-0.38	0.16	*	0.68 (1.47)

Number of students/schools		2481 / 12		2173 / 12	
School level variance	Intercept only	Main model		Covariate model	
	0.10	0.10		0.06	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grades 9, 10, 11, and 12 to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.3. Algebra II Completion by Grade 12: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Algebra II Completion by Grade 12

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	81%	80%		1164	1042	0.72	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.38	0.18	***	NA	1.77	0.36	***	NA
Group (primary cohort versus retrospective cohort)	0.12	0.11	ns	NA	0.06	0.12	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.40	0.08	***	NA
Female					0.45	0.12	***	1.57
Hispanic (versus White/Other)					-0.19	0.30	ns	NA
African American (versus White/Other)					-0.19	0.34	ns	NA
English Learner					0.38	0.23	ns	NA
Economically Disadvantaged					0.07	0.19	ns	NA
At-Risk					-0.63	0.16	***	0.53 (1.88)

Number of students/schools	2206 / 6		1970 / 6	
School level variance	Intercept only	Main model	Covariate model	
	0.14	0.15	0.1	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grades 9, 10, 11, and 12 to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.4. AP Course Completion by Grade 12: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in At Least One AP Course Completion by Grade 12

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	51%	44%		1164	1317	13.42	***

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-0.37	0.24	ns	NA	-0.22	0.54	ns	NA
Group (primary cohort versus comparison cohort)	0.50	0.34	ns	NA	0.68	0.68	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.04	0.07	***	NA
Female					0.67	0.10	***	1.96
Hispanic (versus White/Other)					-0.13	0.25	ns	NA
African American (versus White/Other)					-0.29	0.30	ns	NA
English Learner					0.28	0.18	ns	NA
Economically Disadvantaged					-0.24	0.16	ns	NA
At-Risk					-0.7	0.13	***	0.5 (2.02)

Number of students/schools		2481 / 12		2173 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.38	0.32	1.35	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grades 9, 10, 11, and 12 to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.5. Number of AP Courses Completed by Grade 12: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Number of AP Courses Completed by Grade 12

| | Cohort Means | | | Number in Cohort | | Test Results | |
	Primary	Comparison		Primary	Comparison	t	sig
	1.7	1.5		1164	1317	1.65	ns

MLM Regression Models

| Variable | Main Model | | | Covariate Model | | |
	B	SE	sig	B	SE	sig
Intercept	1.34	0.27	***	1.69	0.50	**
Group (Primary cohort versus comparison cohort)	0.32	0.39	ns	0.35	0.64	ns
Grade 8 STAAR Reading Scale Score (z-score)				0.96	0.05	***
Female				0.45	0.08	***
Hispanic (versus White/Other)				-0.20	0.20	ns
African American (versus White/Other)				-0.27	0.24	ns
English Learner				0.32	0.15	*
Economically Disadvantaged				-0.16	0.13	ns
At-Risk				-0.78	0.11	***

Number of students/schools	2481 / 12		2174 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.03	<0.01	1.22	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency
Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grades 9, 10, 11, and 12 to be included in these analyses.
[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.6. AP Course Completion by Grade 12: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in At Least One AP Course Completion by Grade 12								
	Cohort Percentages				Number in Cohort		Test Results	
	Primary	Retrospective			Primary	Retrospective	χ^2	sig
	51%	48%			1164	1036	1.26	ns

MLM Regression Models								
	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-0.37	0.24	ns	NA	-0.22	0.54	ns	NA
Group (primary cohort vs. retrospective cohort)	0.5	0.34	ns	NA	0.68	0.68	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.04	0.07	***	NA
Female					0.67	0.10	***	1.96
Hispanic (vs. White/Other)					-0.13	0.25	ns	NA
African American (vs. White/Other)					-0.29	0.30	ns	NA
EL					0.28	0.18	ns	NA
Economically Disadvantaged					-0.24	0.16	ns	NA
At-Risk					-0.70	0.13	***	0.5 (2.02)

Number of students/schools	2481 / 12			2173 / 12		
School level variance	Intercept only		Main model		Covariate model	
	0.38		0.32		1.35	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, non-EL, not Economically Disadvantaged, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.7. Dual Credit Course Completion by Grade 12: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in At Least One Dual Credit Course Completion by Grade 12

| | Cohort Percentages | | | Number in Cohort | | Test Results | |
	Primary	Comparison		Primary	Comparison	χ^2	sig
	4%	4%		1164	1317	0	ns

MLM Regression Models

| | Main Model | | | | Covariate Model | | | |
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-12.77	3.67	**	NA	-12.1	3.63	**	NA
Group (primary cohort versus comparison cohort)	0.91	3.89	ns	NA	0.96	3.80	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.50	0.17	**	NA
Female					0.44	0.26	ns	NA
Hispanic (versus White/Other)					-0.83	0.42	ns	NA
African American (versus White/Other)					-1.06	0.57	ns	NA
English Learner					0.32	0.55	ns	NA
At-Risk					-0.33	0.34	ns	NA

Number of students/schools	2481 / 12		2173 / 12	
School level variance	Intercept only	Main model	Covariate model	
	98.8	95.26	88.55	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grades 9, 10, 11, and 12 to be included in these analyses. Due to convergence issues, economic disadvantage was removed from the covariate model.

Table C.8. Algebra I EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Approaching the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	68%	66%		1934	1934	1.97	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	0.76	0.23	**	NA	1.78	0.32	***	NA
Group (Primary cohort versus comparison cohort)	0.20	0.32	ns	NA	0.23	0.26	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.12	0.07	***	NA
Female					0.12	0.09	ns	NA
Hispanic (versus White/Other)					0.26	0.25	ns	NA
African American (versus White/Other)					-0.24	0.28	ns	NA
English Learner					0.08	0.14	ns	NA
Economically Disadvantaged					-0.15	0.16	ns	NA
At-Risk					-0.90	0.14	***	0.41 (2.45)

Number of students/schools	3868 / 12			3035 / 12	
School level variance	Intercept only	Main model	Covariate model		
	0.29	0.29	0.16		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. A small number of primary cohort students (73) took Algebra I EOC in a primary cohort middle school but did not attend a primary cohort high school; they are included in the Initial Group Differences analysis but not in the MLM Regression Models.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.9. Algebra I EOC Meets Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Meeting the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	20%	19%		1934	1934	0.13	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-1.4	0.27	***	NA	-0.67	0.26	**	NA
Group (Primary cohort versus comparison cohort)	0.08	0.39	ns	NA	-0.05	0.20	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.12	0.07	***	NA
Female					-0.17	0.10	ns	NA
Hispanic (versus White/Other)					-0.11	0.20	ns	NA
African American (versus White/Other)					-0.59	0.27	*	0.56 (1.8)
English Learner					0.12	0.21	ns	NA
Economically Disadvantaged					-0.06	0.15	ns	NA
At-Risk					-1.02	0.12	***	0.36 (2.76)

Number of students/schools	3868 / 12		3035 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.42	0.42	0.09	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. A small number of primary cohort students (73) took Algebra I EOC in a primary cohort middle school but did not attend a primary cohort high school; they are included in the Initial Group Differences analysis but not in the MLM Regression Models.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.10. Algebra I EOC Meets Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Meeting the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	20%	16%		1934	1276	6.75	**

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-1.55	0.24	***	NA	-0.96	0.30	**	NA
Group (Primary cohort versus retrospective cohort)	0.23	0.10	*	1.26	0.10	0.12	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.08	0.08	***	NA
Female					-0.25	0.12	*	0.78 (1.29)
Hispanic (versus White/Other)					-0.02	0.24	ns	NA
African American (versus White/Other)					-0.73	0.30	*	0.48 (2.07)
English Learner					0.77	0.24	**	2.16
Economically Disadvantaged					-0.06	0.17	ns	NA
At-Risk					-0.92	0.13	***	0.4 (2.5)

Number of students/schools	3210 / 6		2397 / 6	
School level variance	Intercept only	Main model	Covariate model	
	0.31	0.31	0.14	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses. 73 primary cohort students took the Algebra I EOC in middle school but were not assigned to a campus in high school; they were not included in the MLM models.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.11. English I EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Approaching the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	45%	46%		2028	2225	0.01	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-0.08	0.23	ns	NA	0.58	0.27	*	NA
Group (Primary cohort versus comparison cohort)	0.06	0.32	ns	NA	-0.08	0.17	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					2.00	0.08	***	NA
Female					0.52	0.10	***	1.69
Hispanic (versus White/Other)					0.13	0.23	ns	NA
African American (versus White/Other)					-0.07	0.27	ns	NA
English Learner					-0.53	0.18	**	0.59 (1.69)
Economically Disadvantaged					-0.27	0.15	ns	NA
At-Risk					-0.77	0.12	***	0.46 (2.16)

Number of students/schools	4253 / 12		3262 / 12
School level variance	Intercept only	Main model	Covariate model
	0.29	0.29	0.05

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.12. English I EOC Meets Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Meeting the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	26%	26%		2028	2225	0	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-1.01	0.25	***	NA	-1.39	0.29	***	NA
Group (Primary cohort versus comparison cohort)	0.12	0.35	ns	NA	0.09	0.24	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					2.07	0.09	***	NA
Female					0.56	0.11	***	1.76
Hispanic (versus White/Other)					0.09	0.22	ns	NA
African American (versus White/Other)					-0.30	0.27	ns	NA
English Learner					-0.84	0.31	**	0.43 (2.32)
Economically Disadvantaged					0.12	0.15	ns	NA
At-Risk					-0.97	0.12	***	0.38 (2.64)

Number of students/schools	4253 / 12		3262 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.36	0.35	0.14	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.13. English II EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Approaching the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	50%	45%		1922	1944	9.45	**

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-0.22	0.26	ns	NA	0.29	0.34	ns	NA
Group (Primary cohort versus comparison cohort)	0.41	0.36	ns	NA	0.56	0.30	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.70	0.08	***	NA
Female					0.58	0.10	***	1.79
Hispanic (versus White/Other)					-0.11	0.25	ns	NA
African American (versus White/Other)					-0.94	0.30	**	0.39 (2.57)
English Learner					-0.76	0.19	***	0.47 (2.14)
Economically Disadvantaged					0.20	0.16	ns	NA
At-Risk					-0.69	0.14	***	0.5 (2)

Number of students/schools		3866 / 12		2602 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.42	0.37	0.22	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.
Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.
[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.14 English II EOC Meets Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Meeting the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	27%	25%		1922	1944	1.19	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-1.18	0.27	***	NA	-1.03	0.32	**	NA
Group (Primary cohort versus comparison cohort)	0.31	0.39	ns	NA	0.28	0.29	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.79	0.09	***	NA
Female					0.71	0.12	***	2.04
Hispanic (versus White/Other)					-0.22	0.24	ns	NA
African American (versus White/Other)					-0.98	0.30	**	0.38 (2.66)
English Learner					-1.57	0.42	***	0.21 (4.8)
Economically Disadvantaged					-0.03	0.16	ns	NA
At-Risk					-0.96	0.13	***	0.38 (2.6)

Number of students/schools	3866 / 12		2602 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.45	0.42	0.2	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.15. English II EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Approaching the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	50%	51%		1922	1477	0.20	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	0.20	0.26	ns	NA	1.06	0.27	***	NA
Group (Primary cohort versus retrospective cohort)	-0.02	0.07	ns	NA	0.18	0.11	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.64	0.08	***	NA
Female					0.59	0.11	***	1.80
Hispanic (versus White/Other)					-0.14	0.24	ns	NA
African American (versus White/Other)					-0.81	0.27	**	0.44 (2.26)
English Learner					-0.51	0.21	*	0.60 (1.66)
Economically Disadvantaged					-0.24	0.17	ns	NA
At-Risk					-0.87	0.13	***	0.42 (2.38)

Number of students/schools	3399 / 6		2392 / 6	
School level variance	Intercept only	Main model	Covariate model	
	0.38	0.38	0	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.16 English II EOC Meets Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Meeting the Achievement Standard

| | Cohort Percentages | | | Number in Cohort | | Test Results | |
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	27%	29%		1922	1477	1.02	ns

MLM Regression Models

| | Main Model | | | | Covariate Model | | | |
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-0.78	0.26	**	NA	-0.56	0.31	ns	NA
Group (Primary cohort versus retrospective cohort)	-0.08	0.08	ns	NA	0	0.12	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.76	0.09	***	NA
Female					0.62	0.12	***	1.86
Hispanic (versus White/Other)					-0.17	0.25	ns	NA
African American (versus White/Other)					-0.71	0.29	*	0.49 (2.04)
English Learner					-0.82	0.40	*	0.44 (2.28)
Economically Disadvantaged					-0.25	0.17	ns	NA
At-Risk					-1.04	0.12	***	0.35 (2.82)

Number of students/schools	3399 / 6		2392 / 6	
School level variance	Intercept only	Main model	Covariate model	
	0.4	0.4	0.09	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.17. Biology EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Approaching the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	82%	80%		1803	2106	2.18	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	1.60	0.29	***	NA	3.23	0.48	***	NA
Group (Primary cohort versus comparison cohort)	0.17	0.41	ns	NA	0.19	0.32	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.37	0.09	***	NA
Female					0.26	0.12	*	1.3
Hispanic (versus White/Other)					-0.43	0.40	ns	NA
African American (versus White/Other)					-0.83	0.43	ns	NA
English Learner					-0.34	0.16	*	0.71 (1.41)
Economically Disadvantaged					0.12	0.21	ns	NA
At-Risk					-0.75	0.20	***	0.47 (2.12)

Number of students/schools	3909 / 12			3135 / 12		
School level variance	Intercept only		Main model	Covariate model		
	0.46		0.46	0.24		

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.18. Biology EOC Meets Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Meeting the Achievement Standard

| | Cohort Percentages | | | Number in Cohort | | Test Results | |
	Primary	Comparison		Primary	Comparison	χ^2	sig
	35%	34%		1803	2106	0.56	ns

MLM Regression Models

| | Main Model | | | | Covariate Model | | | |
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-0.64	0.35	ns	NA	0.47	0.38	ns	NA
Group (Primary cohort versus comparison cohort)	0.19	0.50	ns	NA	0.27	0.44	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.43	0.07	***	NA
Female					-0.46	0.10	***	0.63 (1.59)
Hispanic (versus White/Other)					-0.30	0.21	ns	NA
African American (versus White/Other)					-0.79	0.26	**	0.46 (2.2)
English Learner					-0.32	0.2	ns	NA
Economically Disadvantaged					-0.02	0.14	ns	NA
At-Risk					-1.02	0.11	***	0.36 (2.77)

Number of students/schools	3909 / 12		3135 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.74	0.72	0.53	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.19. Biology EOC Meets Standard: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students Meeting the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	35%	33%		1803	1568	2.05	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-0.57	0.42	ns	NA	0.24	0.4	ns	NA
Group (Primary cohort versus retrospective cohort)	0.12	0.08	ns	NA	0.15	0.1	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.30	0.07	***	NA
Female					-0.40	0.10	***	0.67 (1.49)
Hispanic (versus White/Other)					-0.13	0.22	ns	NA
African American (versus White/Other)					-0.68	0.26	*	0.51 (1.97)
English Learner					-0.33	0.24	ns	NA
Economically Disadvantaged					-0.07	0.15	ns	NA
At-Risk					-0.91	0.11	***	0.4 (2.48)

Number of students/schools	3371 / 6		2545 / 6	
School level variance	Intercept only	Main model	Covariate model	
	1.04	1.04	0.59	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.20. U.S. History EOC Approaches Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Approaching the Achievement Standard

| | Cohort Percentages | | | Number in Cohort | | Test Results | |
	Primary	Comparison		Primary	Comparison	χ^2	sig
	85%	82%		1686	1698	4.89	*

MLM Regression Models

| | Main Model | | | | Covariate Model | | | |
Variable	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	1.56	0.25	***	NA	3.17	0.5	***	NA
Group (Primary cohort versus comparison cohort)	0.38	0.36	ns	NA	0.30	0.23	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.40	0.11	***	NA
Female					-0.67	0.15	***	0.51 (1.95)
Hispanic (versus White/Other)					-0.29	0.44	ns	NA
African American (versus White/Other)					-0.80	0.47	ns	NA
English Learner					-0.36	0.20	ns	NA
Economically Disadvantaged					0.19	0.24	ns	NA
At-Risk					-0.38	0.23	ns	NA

Number of students/schools	3384 / 12		2297 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.38	0.35	0.08	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.21. U.S. History EOC Meets Standard: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Meeting the Achievement Standard

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	45%	47%		1686	1698	1.67	ns

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-0.16	0.23	ns	NA	1.11	0.34	**	NA
Group (Primary cohort versus comparison cohort)	0.10	0.33	ns	NA	0.02	0.30	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					1.40	0.08	***	NA
Female					-1.26	0.11	***	0.28 (3.54)
Hispanic (versus White/Other)					-0.23	0.25	ns	NA
African American (versus White/Other)					-0.41	0.30	ns	NA
English Learner					-0.32	0.20	ns	NA
Economically Disadvantaged					0.08	0.15	ns	NA
At-Risk					-0.77	0.13	***	0.46 (2.15)

Number of students/schools	3384 / 12		2297 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.3	0.3	0.22	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been taking the STAAR EOC for the first time and have a score code of "S" and a test version of "S" or "L" to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.22. On-time Promotion from Grade 9 to Grade 10: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students' On-time Promotion from Grade 9 to Grade 10

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	80%	83%		2233	2471	6.48	*

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.54	0.32	***	NA	2.43	0.37	***	NA
Group (Primary cohort versus comparison cohort)	0.20	0.07	**	1.22	-0.06	0.27	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.75	0.07	***	NA
Female					0.26	0.12	*	1.30
Hispanic (versus White/Other)					0.33	0.30	ns	NA
African American (versus White/Other)					-0.05	0.33	ns	NA
English Learner					0.29	0.17	ns	NA
Economically Disadvantaged					0	0.20	ns	NA
At-Risk					-0.54	0.17	**	0.58 (1.71)

Number of students/schools	4394 / 12		3376 / 12	

School level variance	Intercept only	Main model	Covariate model
	0.55	0.58	0.17

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grade 9 to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C23. On-time Graduation: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students' On-time Graduation

| | Cohort Percentages | | | Number in Cohort | | Test Results | |
	Primary	Comparison		Primary	Comparison	χ^2	sig
	92%	92%		1623	1851	0.49	ns

MLM Regression Models

| Variable | Main Model | | | | Covariate Model | | | |
	B	SE	sig	OR	B	SE	sig	OR
Intercept	2.63	0.24	***	NA	4.10	0.66	***	NA
Group (Primary cohort versus comparison cohort)	-0.13	0.34	ns	NA	-0.34	0.38	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.49	0.14	**	NA
Female					0.19	0.22	ns	NA
Hispanic (versus White/Other)					0.48	0.50	ns	NA
African American (versus White/Other)					0.28	0.57	ns	NA
English Learner					-0.27	0.30	ns	NA
Economically Disadvantaged					-0.83	0.44	ns	NA
At-Risk					-0.52	0.31	ns	NA

Number of students/schools	3474 / 12		2306 / 12	
School level variance	Intercept only	Main model	Covariate model	
	0.28	0.28	0.24	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grade 12 or have graduated early to be included in these analyses.
Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

Table C.24. On-time Graduation: Texas GEAR UP Primary Cohort versus Retrospective Cohort

Initial Group Differences in Students' On-time Graduation

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Retrospective		Primary	Retrospective	χ^2	sig
	92%	95%		1623	1261	10.52	**

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR[a]	B	SE	sig	OR
Intercept	2.97	0.17	***	NA	3.29	0.53	***	NA
Group (Primary cohort versus retrospective cohort)	-0.51	0.16	**	0.6 (1.66)	-0.13	0.21	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.41	0.12	***	NA
Female					0.47	0.22	*	1.61
Hispanic (versus White/Other)					0.34	0.46	ns	NA
African American (versus White/Other)					0.08	0.51	ns	NA
English Learner					-0.20	0.34	ns	NA
Economically Disadvantaged					-0.67	0.39	ns	NA
Number of students/schools	2884 / 6				2163 / 6			

School level variance	Intercept only	Main model	Covariate model
	0.06	0.06	0.04

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2014–2018.

Notes. The reference categories in the model are: retrospective cohort, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grade 12 or have graduated early to be included in these analyses. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grade 12 or have graduated early to be included in these analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.25. Graduated under Foundation High Schools Program with Endorsement or with Distinguished Level of Achievement: Texas GEAR UP Primary Cohort versus Matched Comparison Schools Cohort

Initial Group Differences in Students Graduating with Foundation or Distinguished

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Comparison		Primary	Comparison	χ^2	sig
	83%	81%		1481	1656	2.14	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR
Intercept	1.60	0.27	***	NA	2.16	0.60	***	NA
Group (Primary cohort versus comparison cohort)	0.17	0.39	ns	NA	-0.08	0.72	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.61	0.10	***	NA
Female					0.31	0.15	*	1.36
Hispanic (versus White/Other)					0.20	0.31	ns	NA
African American (versus White/Other)					-0.18	0.39	ns	NA
Economically Disadvantaged					0.31	0.20	ns	NA
At-Risk					-0.24	0.19	ns	NA
Number of students/schools				3137 / 12		2209 / 12		
School level variance	Intercept only		Main model		Covariate model			
	0.41		0.41		1.39			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018. Students must have been enrolled in a Texas GEAR UP SG school in Grade 12 or have graduated early to be included in these analyses.

Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

Table C.26. Algebra I Completion by Grade 8: Texas GEAR UP Primary Cohort versus Follow-On Cohort 1

Initial Group Differences in Algebra I Completion by Grade 8

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Follow On 1		Primary	Follow On 1	χ^2	sig
	30%	31%		1959	2093	0.64	ns

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR[a]
Intercept	-0.87	0.28	**	NA	-0.58	0.31	ns	NA
Group (primary cohort versus follow-on cohort 1)	-0.11	0.07	ns	NA	-0.02	0.08	ns	NA
Female					0.15	0.07	*	1.16
Hispanic (versus White/Other)					-0.06	0.15	ns	NA
African American (versus White/Other)					-0.30	0.17	ns	NA
English Learner					-0.91	0.17	***	0.40 (2.48)
Economically Disadvantaged					-0.30	0.10	**	0.74 (1.35)
Number of students/schools	4052 / 7				4052 / 7			
School level variance	Intercept only		Main model		Covariate model			
	0.53		0.53		0.52			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency.
Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grade 8 to be included in the analyses.
[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.27. Algebra I Completion by Grade 8: Texas GEAR UP Primary Cohort versus Follow-On Cohort 2

Initial Group Differences in Algebra I Completion by Grade 8

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Follow On 2		Primary	Follow On 2	χ^2	sig
	30%	31%		1959	2032	0.52	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	-0.93	0.26	***	NA	-0.52	0.29	ns	NA
Group (primary cohort versus follow-on cohort 2)	-0.05	0.07	ns	NA	-0.05	0.07	ns	NA
Female					0.18	0.07	**	1.2
Hispanic (versus White/Other)					-0.11	0.15	ns	NA
African American (versus White/Other)					-0.49	0.17	***	0.61 (1.64)
English Learner					-1.12	0.14	***	0.33 (3.06)
Economically Disadvantaged					-0.24	0.10	*	0.78 (1.28)

Number of students/schools	3991 / 7		3991 / 7	
School level variance	Intercept only	Main model	Covariate model	
	0.45	0.45	0.42	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency,
Notes. The reference categories in the model are: comparison group, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG or comparison school in Grade 8 to be included in the analyses.
[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.28. Algebra I Completion by Grade 9: Texas GEAR UP Primary Cohort versus Follow-On Cohort 2

Initial Group Differences in Algebra I Completion by Grade 9

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Follow On 2		Primary	Follow On 2	χ^2	sig
	71%	73%		1575	1638	1.97	ns

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.11	0.19	***	NA	1.54	0.26	***	NA
Group (primary cohort versus comparison cohort)	-0.13	0.08	ns	NA	-0.13	0.09	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.73	0.06	***	NA
Female					0.58	0.09	***	1.79
Hispanic (versus White/Other)					-0.20	0.23	ns	NA
African American (versus White/Other)					-0.17	0.26	ns	NA
English Learner					0.14	0.14	ns	NA
Economically Disadvantaged					-0.04	0.13	ns	NA
AAt-Risk					-0.34	0.12	**	0.71 (1.41)

Number of students/schools	3213 / 6			2966 / 6				
School level variance	Intercept only		Main model		Covariate model			
	0.19		0.19		0.03			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: follow-on cohort 2, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Students must have been enrolled in a Texas GEAR UP SG school in Grades 8 and 9 to be included in the analyses.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.29. On-time Promotion from Grade 9 to Grade 10: Texas GEAR UP Primary Cohort versus Follow-On Cohort 1

Initial Group Differences in Students' On-time Promotion from Grade 9 to Grade 10

	Cohort Percentages			Number in Cohort		Test Results	
	Primary	Follow On 1		Primary	Follow On 1	χ^2	sig
	80%	81%		2233	2239	0.38	ns

MLM Regression Models

	Main Model				Covariate Model			
Variable	B	SE	sig	OR	B	SE	sig	OR [a]
Intercept	1.75	0.3	***	NA	1.91	0.32	***	NA
Group (Primary cohort versus follow-on 1 cohort)	-0.07	0.08	ns	NA	-0.13	0.11	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.83	0.07	***	NA
Female					0.21	0.11	ns	NA
Hispanic (versus White/Other)					0.41	0.25	ns	NA
African American (versus White/Other)					0.25	0.28	ns	NA
English Learner					0.50	0.22	*	1.65
Economically Disadvantaged					-0.01	0.16	ns	NA
At-Risk					-0.06	0.16	ns	NA

Number of students/schools		4472 / 6		3245 / 6	
School level variance	Intercept only	Main model		Covariate model	
	0.5	0.52		0.15	

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: follow-on cohort 1, male, White/Other, not Economically Disadvantaged, non-EL, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.

[a] For ease of interpretation, odds ratios of less than one have been transformed to reflect the odds of the non-reference group, calculated as 1/odds ratio of the reference group. This reversed odds ratio is presented in parentheses.

Table C.30 On-time Graduation: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR
Intercept	0.97	0.20	***	NA	2.42	1.54	ns	NA
Length	0.34	0.04	***	1.4	0.17	0.25	ns	NA
Grade 8 STAAR Reading Scale Score (z-score)					0.34	0.17	*	NA
Hispanic (versus White/Other)					0.53	0.65	ns	NA
African American (versus White/Other)					0.22	0.74	ns	NA
English Learner					-0.49	0.46	ns	NA
Economically Disadvantaged					-0.88	0.55	ns	NA
Number of students/schools			1623 / 6		1075 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.03		0.02		0.05			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: White/Other, not Economically Disadvantaged, non-EL. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable. Due to convergence issues, gender and at-risk status were removed from the covariate model; neither were significant predictors of on-time graduation.

Table C.31 On-time Graduation: Texas GEAR UP Primary Cohort based on Length of Time in Cohort

MLM Regression Models

Variable	Main Model				Covariate Model			
	B	SE	sig	OR	B	SE	sig	OR
Intercept	-0.11	0.26	ns	NA	-5.06	1.4	***	NA
Length	0.4	0.04	***	1.49	1.25	0.22	***	3.48
Grade 8 STAAR Reading Scale Score (z-score)					0.98	0.17	***	2.66
Female					0.49	0.25	*	1.64
Hispanic (versus White/Other)					0.1	0.53	ns	NA
African American (versus White/Other)					-0.27	0.6	ns	NA
English Learner					0.63	0.44	ns	NA
Economically Disadvantaged					0.21	0.33	ns	NA
At-Risk					-0.25	0.34	ns	NA
Number of students/schools			1481 / 6		995 / 6			
School level variance	Intercept only		Main model		Covariate model			
	0.27		0.17		0.13			

Sources. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2018; Texas Education Agency, Public Education Information Management System (PEIMS), 2014–2018; Texas Education Agency, State of Texas Assessments of Academic Readiness (STAAR), 2015–2018.

Notes. The reference categories in the model are: male, White/Other, non-EL, not Economically Disadvantaged, not at-risk. Asterisks indicate the level of statistical significance ("sig"): * < 5%, ** < 1%, *** < 0.1%; ns indicates non-significant finding. NA indicates not applicable.