

Executive Summary

Grades 9–12 Comprehensive
Outcomes Report



Texas GEAR UP State Grant Evaluation

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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

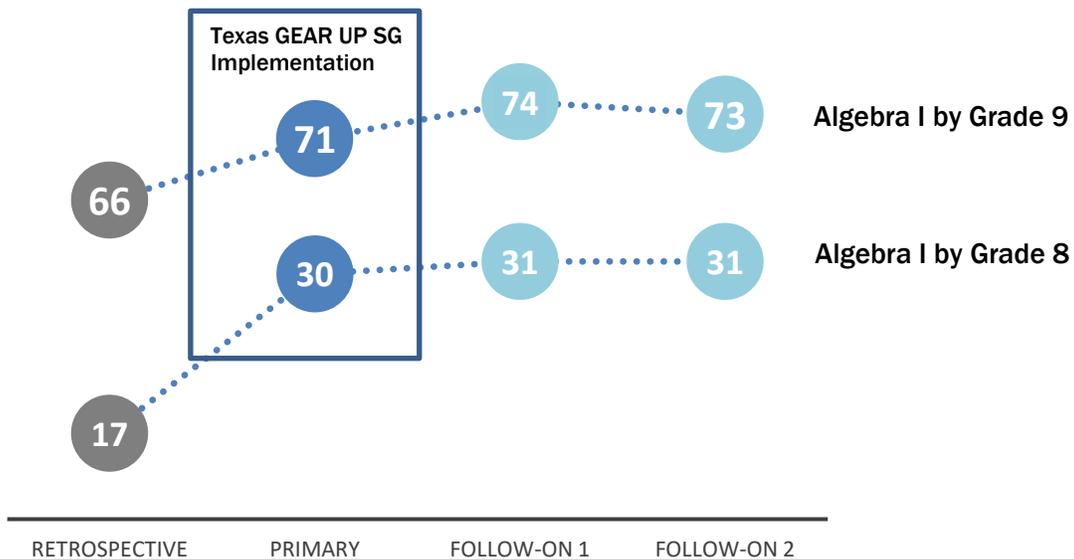


Key Takeaway:

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.**