Grades 7–8 Comprehensive Report

Texas GEAR UP State Grant Evaluation

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Executive Summary

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 State Grant (SG) follows 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 Year 2 of the Texas GEAR UP SG (the 2013–14 school year), the cohort's last year in middle school (Grade 8). There were seven middle schools that were involved in the evaluation of the Texas GEAR UP SG. Participating schools and their districts are listed in Table ES.1; throughout this report, schools are identified by letter (e.g., School A, School B) to protect confidentiality.

Table ES.1. Profile of Texas GEAR UP Schools

District	Middle School (2012–13; 2013–14)
Edgewood Independent School District	Brentwood, Garcia, Wrenn
Somerset Independent School District	Somerset
Lubbock Independent School District	Dunbar
Manor Independent School District	Decker, Manor

To meet the federal purpose of the GEAR UP grant, the Texas GEAR UP SG program includes nine project goals and 27 corresponding objectives, provided in Appendix A.2 of the report. Three objectives are related to advanced coursework, student support services, and summer programs. Other goals are intended to increase data-driven instruction (through teacher professional development [PD]), community collaboration, and access to postsecondary information.

Outcome goals include on-time promotion, improved high school completion at a college-ready level, college attendance, and college retention. In addition to meeting goals at campuses selected to participate in the program, there are objectives to provide statewide information and professional learning for educators to promote college readiness across the state.

Evaluation of Texas GEAR UP State Grant

The evaluation of the program examines implementation and outcomes (including the relationship between the two) and identifies potential best practices 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; and,
- Understand cost and sustainability.

The external evaluation is a longitudinal design that spans seven years and follows a cohort model. The primary GEAR UP cohort includes students at seven Texas GEAR UP SG middle schools at which services were provided. The comparison school cohort consists of students attending seven statistically similar schools that did not participate in the Texas GEAR UP SG. Students in the retrospective cohort attended the Texas GEAR UP SG schools in Grade 7 one year prior to the start of the grant. Table ES.2 illustrates the timeline and grade levels associated with the three cohorts.

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
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	--

For this report, each cohort was followed from Grade 7 to Grade 8, with Grade 8 outcomes being the main focus of the report. First, differences between the primary cohort and the other two cohort groups, and the state of Texas when possible, are examined. Second, relationships between participating in the program for various periods of time (i.e., Grade 8, or both Grades 7 and 8) and academic outcomes are examined. Third, the effect of dosage is examined (e.g., Did students who participated in many GEAR UP activities have better outcomes than those who participated in only a few activities?) Fourth, relationships between participating in individual activities (e.g., Algebra I tutoring) and academic outcomes for Texas GEAR UP SG primary cohort students are explored.

While this comprehensive report focuses on outcomes, two annual implementation reports provide detailed information regarding implementation in the first two years of the Texas GEAR UP SG. Annual Implementation Report #1 (O'Donnel et al., 2013) focused on implementation that occurred through March in the 2012–13 school year. Annual Implementation Report #2 (Briggs, et al., 2015) focused on implementation events that occurred from summer 2013 through March of the 2013–14 school year. These annual reports provided a snapshot of how the seven Texas GEAR UP SG participating middle schools (located in four districts), TEA, and TEA's Texas GEAR UP SG collaborators were implementing the program.

Key Findings

Three key outcomes are explored in this report. Findings were considered key if they were aligned to the project goals and objectives set by TEA (see Appendix A). Relevant project goals and objectives emphasized in this report include the following:

- Project Goal 1 is to improve instruction and expand academic opportunities in math and science. Within that goal is Project Objective 1.1, which states that by the end of the project's second year, 30% of cohort students will have completed Algebra I in Grade 8.
- Project Goal 4 is for GEAR UP campuses to provide student services to increase on-time promotion and academic preparation for college. The broader goal of academic preparation for college will be measured more in depth in future reports, but it is measured here by performance on Grade 8 STAAR assessments and on the Algebra I EOC.
- Project Objective 4.3: An objective within project goal 4 is to increase on-time promotion such that by the end of the project's third year, the on-time promotion rate of cohort students will exceed the state average.

Interested readers should view the full report for additional information on all key findings. Select evaluation questions relevant to Year 2 outcomes—addressed in the report—include the following:

- 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?[1]
- How do trajectories of outcomes differ based on exposure to implementation? For example, do students who participate in Texas GEAR UP SG activities in all grades (e.g., Grade 7 and Grade 8) differ compared to students who enter Texas GEAR UP SG schools at a later grade level?
- How are implementation and outcomes related to one another? Are certain dosages of implementation associated with more successful outcomes? Are there certain patterns of participation in implementation strategies?

Comparisons between Groups

Differences between students in the Texas GEAR UP SG primary cohort and the comparison schools and retrospective cohorts in the three outcomes of interest are examined.

[1] The retrospective cohort consists of students who attended GEAR UP schools the year prior to implementation. Future reports will include comparisons from follow-on cohorts attending the Texas GEAR UP SG school post the primary cohort.

ALGEBRA I COMPLETION

Key Takeaway:

Students in the Texas GEAR UP SG primary cohort were much more likely than students in the other two cohorts to complete Algebra I. A full 30% of students in the primary cohort completed Algebra I (compared to only 17% of students in the comparison schools cohort and 14% of students in the retrospective cohort), meeting Project Objective 1.1.

The first major objective for Texas GEAR UP SG Grade 8 students (Project Objective 1.1) was for 30% of primary cohort students to complete Algebra I in Grade 8. The schools in the primary cohort were able to meet this target exactly, achieving an Algebra I completion rate of 30%. However, only two of the schools met or exceeded the target, School G (52%) and School F (30%). The other five schools had between 20% (School B) and 27% (School C) of their students complete Algebra I in Grade 8.

All schools in the primary cohort had higher completion rates than their respective comparison schools and the retrospective cohort. Overall, 17% of students in the comparison schools cohort and 14% of students in the retrospective cohort completed Algebra I in Grade 8. That is, students in the Texas GEAR UP SG primary cohort had close to double the rate of Algebra I completion than their peers.

In addition, the Texas GEAR UP SG schools increased enrollment in Algebra I without substantially reducing completion rates. Overall, 92% of primary cohort students who enrolled in Algebra I completed the course. This was comparable to completion within the retrospective cohort (92%) and was only slightly lower than the comparison schools (96%).

PERFORMANCE ON STAAR ASSESSMENTS

Key Takeaway:

Students in the Texas GEAR UP SG primary cohort were less likely to meet the standards for Algebra I EOC and STAAR Grade 8 Mathematics than students in the other cohorts. There were no clear trends in performance on the other three assessments.

STAAR Algebra I EOC and STAAR Grade 8 Mathematics

Students in the Texas GEAR UP SG primary cohort had poorer performance on both the Algebra I EOC and on Grade 8 STAAR Mathematics than students in both the comparison schools cohort and the retrospective cohort. Once prior STAAR Mathematics scores and other student characteristics (e.g., gender, ELL status) were taken into account, students in the primary cohort were less likely to reach both the Level II Phase-in 1 and Level II final standards for Algebra I and STAAR Grade 8 Mathematics in the retrospective cohort, and for STAAR Grade 8 Mathematics in the comparison schools cohort.

This finding may indicate that there is a downside to allocating resources into one area (i.e., getting students to complete Algebra I) – poorer performance on STAAR. It is important to recognize, however, that 92% of students in the primary cohort still reached the Level II Phase-in 1 standard for Algebra I. That is, although approximately twice as many students took Algebra I EOC in the primary cohort as in the other two cohorts, the vast majority were still able to meet the passing standard.

Other STAAR Assessments

On the other three STAAR tests, the pattern of results was not as clear. On STAAR Science, students in the retrospective cohort were significantly more likely to reach the Level II Phase-in 1 standard than students in the primary and comparison schools cohorts. In contrast, students in the primary and comparison schools cohort were more likely to meet the Level II final standard than students in the retrospective cohort. However, once prior achievement and other student characteristics were taken into account, this difference was no longer significant.

Students in the primary cohort were also less likely to reach the Level II Phase-in 1 standard on Social Studies than students in the retrospective cohort. However, they were more likely than students in the comparison schools cohort to meet the Level II Phase-in 1 standard for Social Studies. Finally, students in the primary cohort were slightly more likely to meet the Level II final standard on STAAR Reading than students in the comparison schools cohort, but in the multilevel models the difference was no longer significant.

Overall, of 12 available non-mathematics comparisons (3 assessments x 2 standards x 2 cohort groups), once prior achievement and other student characteristics were taken into account, the primary cohort had significantly better achievement in one area (reaching the Level II Phase-in 1 standard on STAAR Social Studies, vs. the comparison schools cohort) and worse achievement in two areas (reaching the Level II Phase-in 1 standard on STAAR Social Studies and STAAR Science vs. the retrospective cohort). There were no differences in the majority of areas (nine of twelve, or 75%).

ON-TIME PROMOTION

Key Takeaway:

Students in the Texas GEAR UP SG primary cohort were less likely to be promoted than students in the other two cohorts, or compared to the state average. However, the difference was very small: 98% of students in the primary cohort (as compared to 99% for each of the other groups) were promoted to Grade 8 on time.

Project Objective 4.3 is for the on-time promotion rate for GEAR UP students to exceed the state average by Year 3. The state average for Grade 7–8 promotion was 99%. The Texas GEAR UP SG primary cohort achieved a 98.1% promotion rate while the comparison schools and retrospective cohort each achieved a rate of 99%. That is, the promotion rate in the Texas GEAR UP SG primary cohort was about one percentage point lower than, but practically the same as, the statewide rate and rates of both comparison groups.

Analyses within the Primary Cohort

LENGTH OF TIME IN COHORT

Key Takeaway:

Students in the primary cohort who attended a Texas GEAR UP SG school in both Grade 7 and Grade 8 were significantly more likely than those who attended in Grade 8 only to have completed Algebra I.

Our next set of analyses focused on the effect of participation in one year of GEAR UP versus both years on Algebra I completion and STAAR performance. Students who attended in Grade 8 only were compared to those who attended in both Grade 7 and Grade 8.[2]

Within the primary cohort, students who attended a Texas GEAR UP SG school in both Grade 7 and Grade 8 were significantly more likely than those who attended in Grade 8 only to have completed Algebra I. However, length of time in cohort was not a significant predictor for meeting either standard for Algebra I EOC.

On other STAAR assessments, students who attended a Texas GEAR UP SG school in both Grade 7 and Grade 8 were significantly more likely than those who attended in Grade 8 only to reach the Level II Phase-in 1 standard on Grade 8 STAAR Mathematics. In addition, students who attended a Texas GEAR UP SG school in both Grade 7 and Grade 8 were significantly more likely than those who attended in Grade 8 only to reach both standards for STAAR Reading and STAAR Science and the Level II Phase-in 1 standard for Social Studies.

It is important to note when interpreting these results that prior STAAR scores were unavailable for the majority of students who were enrolled in Grade 8 only. Therefore, previous STAAR score could not be included in the covariate model. There is a possibility that students who attended in both years were stronger students than students who attended only one year. Because there was no way to assess prior achievement, these results should be interpreted with caution.

Overall Level of Participation

Key Takeaway:

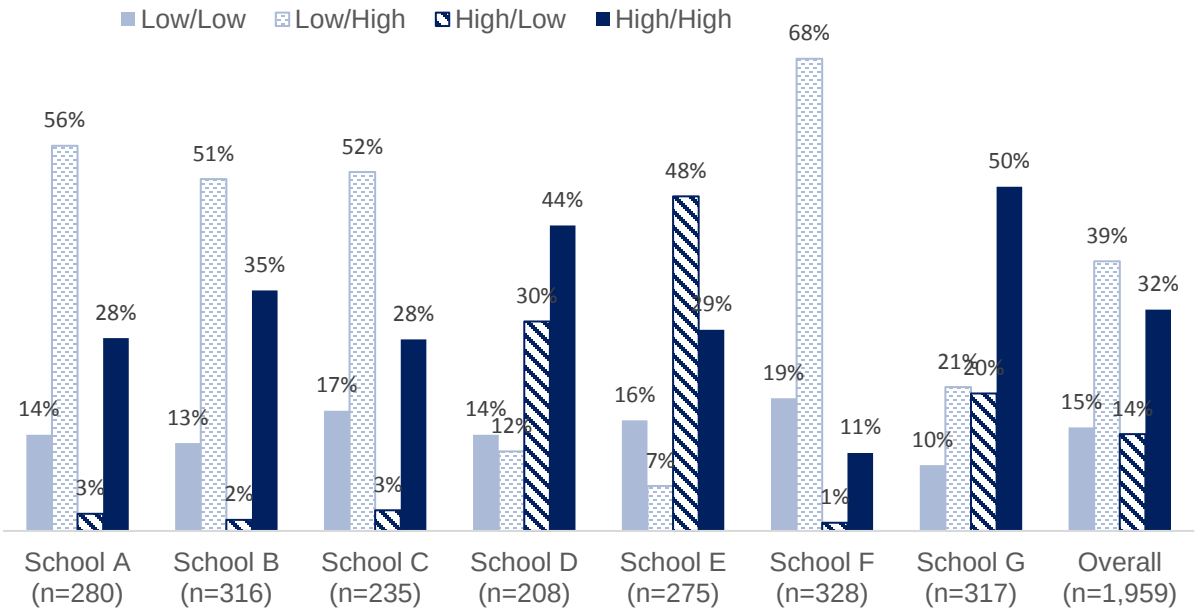
Students in the Texas GEAR UP SG primary cohort who had a high level of participation in Grade 8 were more likely to complete Algebra I and to reach the Level II Phase-in 1 standard on Algebra I EOC.

Students in the Texas GEAR UP SG primary cohort attended schools with a variety of activities and services available through the GEAR UP grant. The next set of analyses examines if students who participated in more activities had better short-term outcomes than those who participated in fewer activities. To measure this, student participation each year was classified as either High or Low.[3] Therefore, students were coded overall as being Low/Low (low participation in both years), Low/High (low participation in Grade 7 and high participation in Grade 8), High/Low (high participation in Grade 7 and low participation in Grade 8) and High/High (high participation in both years).

Overall, 15% of students were in the Low/Low category, 39% of students were in the Low/High category, 14% of students were in the High/Low category and 32% of students were in the High/High category. Participation category varied greatly by campus. For instance, at Schools A, B, C, and F, more than half of students were in the Low/High category. At School G, exactly 50% of students were in the High/High category. At School E, 48% of students were in the High/Low category (See Figure ES.1).

[2] Very few students who attended in Grade 7 only had Grade 8 outcome data available, so they were excluded from the analyses.
[3] In Grade 7, students who participated in 0-2 activities were coded as Low, and 3-8 activities were coded as High. In Grade 8, students who participated in 0-3 activities were coded as Low, and 4-8 were coded as High.

Figure ES.1. Percentage of Students by Overall Level of Participation by Texas GEAR UP SG School



Source. Texas Education Agency, Texas GEAR UP SG Integrated Data Entry System (GUIDES) data through March 31, 2014.
Notes. In the category names, the first word (i.e., high or low) is associated with level of participation in Grade 7 while the second word is associated with level of participation in Grade 8.

The strongest finding was that students with a high level of participation in Grade 7 (i.e., students in the High/Low and High/High groups) were more likely than their Low/Low counterparts to complete Algebra I in Grade 8. They were also more likely to reach the Level II Phase-in 1 standard for Algebra I EOC, even when prior achievement and other student characteristics were taken into account. This finding suggests that engaging students at a high level as early as possible was associated with successfully completing Algebra I.

For the other four STAAR assessments, there were only two significant findings (of eight possible) once prior achievement and other student characteristics were taken into account. First, students in the High/Low group were less likely to reach the Level II final standard for STAAR Science. Second, students in the Low/High group were less likely to meet the Level II Phase-in 1 standard in Social Studies.

Activities Associated with Outcomes

Key Takeaway:

Students in the Texas GEAR UP SG primary cohort were much more likely than students in the other two cohorts to complete Algebra I. A full 30% of students in the primary cohort completed Algebra I (compared to only 17% of students in the comparison schools cohort and 14% of students in the retrospective cohort), meeting Project Objective 1.1.

Finally, the degree to which specific activities were associated with Algebra I completion and performance on STAAR assessment was explored. Statistical models examined if there was any impact of participation in a given activity and an outcome, and if there was an impact of the amount of participation in a particular activity (e.g., number of hours of tutoring or number of college visits in Grade 8) on outcome.

There were 12 activities that were positively associated with Algebra I completion. The four activities most strongly associated with Algebra I completion were advanced mathematics course enrollment in Grade 7, high engagement with college visits during summer following Grade 7, and participation by parents in Grade 7 summer workshops. It is important to note that almost all activities classified as student workshops in Grade 7 summer were intended by the schools to improve Algebra I completion. School G was the leader in this area: 42% of students participated in a 20-hour, week-long minicamp focused on Algebra I during the summer between Grade 7 and Grade 8. School G also had the highest Algebra I completion rate by far, with 52% of students completing Algebra I compared to other schools that ranged from 20% to 32%.

There were five activities that were significant positive predictors of reaching the Level II Phase-in 1 standard on STAAR Algebra I EOC. Students who enrolled in an advanced mathematics course in Grade 7, those who attended a family event in Grade 7 or Grade 8, those who attended a student workshop in Grade 7, and those who had a parent attend a workshop in Grade 8 were more likely to reach the standard than students who did not participate in these activities. The only positive predictor of reaching the Level II final standard on STAAR Algebra I EOC was advanced mathematics enrollment in Grade 7. There was one negative predictor of performance on STAAR Algebra I EOC: students who received any counseling in Grade 8 were less likely to meet the Level II Phase-in 1 standard or the Level II final standard on STAAR Algebra I EOC than students who did not receive any counseling.

On STAAR Grade 8 Mathematics, there were also five activities that were positively associated with meeting the Level II Phase-in 1 standard. Students who enrolled in an advanced mathematics course in Grade 7, those who went on a college visit, participated in job shadowing, or went on an educational trip in Grade 8, and students who had a parent who attended a workshop in Grade 7 were all more likely to meet the standard than their peers. The only predictor of meeting the Level II final standard was enrollment in an advanced mathematics course in Grade 7.

Similar to the above, students who were enrolled in an advanced mathematics course in Grade 7 were more likely to meet both standards for STAAR Science. Additionally, students who had a parent who attended a workshop in Grade 8 were more likely to reach the Level II Phase-in 1 standard, and students who went on a college visit in the summer after Grade 7 were more likely to meet the Level II final standard. Finally, students who received science tutoring in Grade 7 were less likely to meet both standards.

Enrollment in an advanced reading course was a significant predictor of meeting both the Level II Phase-in 1 standard and the Level II final standard on STAAR Reading and STAAR Social Studies. Additionally, students who participated in job shadowing in Grade 7 and those who went on educational trips (in Grade 7, the summer between Grade 7 and 8, and in Grade 8) were more likely to meet the Level II Phase-in 1 standard on STAAR Social Studies than their peers.

Overall, enrollment in an advanced math or reading course in Grade 7 was the most consistent positive predictor of outcomes, although there were other areas that correlated in some areas as well. For example, parent participation in a workshop predicted reaching the Level II Phase-in 1 standard on Algebra I EOC, STAAR 8 Mathematics, and STAAR Science. Students who went on a college visit in the summer after Grade 8 were more likely to meet the Level II Phase-in 1 standard on STAAR Mathematics and the Level II final standard on STAAR Science. However, it is possible that students who were more engaged and motivated in school than their peers would participate in a broader variety of GEAR UP activities. Therefore, some of the differences above may be attributable to unmeasurable pre-existing differences between students.