

Early Progress and Outcomes of a Grow Your Own Grant Program for High School Students and Paraprofessionals in Texas

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Early Progress and Outcomes of a Grow Your Own Grant Program for High School Students and Paraprofessionals in Texas

Yinmei Wan, Megha Joshi, Elizabeth Barkowski, Jenna Zacamy, Chelsey Nardi, Li Lin, and Valeriy Lazarev

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The Texas Education Agency launched the Grow Your Own (GYO) grant program in 2018 to encourage districts to develop or expand existing high-quality education and training courses for high school students and to support district-employed paraprofessionals (including instructional aides and long-term substitute teachers) to pursue certifications that would allow them to enter full-time teaching roles. This study aimed to help state education leaders in Texas understand the progress of districts in implementing the GYO program and the early outcomes of participants. This study analyzed data from 2015/16 through 2020/21 for districts that received GYO funding in the first two grant cycles and districts in the same geographic locales within the same regions that did not receive GYO funding (comparison districts). The study found that the majority of districts awarded a GYO grant were in rural areas and small towns. GYO districts were more likely to have a smaller enrollment and had a higher average percentage of Hispanic students than comparison districts. The findings suggest that the program appeared to meet the Texas Education Agency’s goal of providing opportunities to students and paraprofessionals in rural and small school settings and students of color to participate in GYO activities. The study also found that the percentage of students completing education and training courses in GYO districts was low (about 10 percent) during the grant years, and the percentage was similar in comparison districts before and after the grant awards. A disproportionate share of students who completed education and training courses in GYO districts were female. Although it is too soon to tell whether the GYO program will, over time, increase the size and diversity of the state’s teacher pool, leaders at the Texas Education Agency can use these early findings to both understand the progress of districts in achieving the GYO grant program aims and help identify aspects of the program that might need further investigation.

Why this study?

Teacher shortages have been described as the “biggest threat” to public schools in Texas (Daniel, 2015). Rural schools are more likely than suburban and urban schools to experience challenges with teacher recruitment and retention because of lower salaries, limited local teacher supply, and geographic and social isolation (Burton et al., 2013; Latterman & Steffes, 2017; Monk, 2007). In 2017, the Texas Rural School Task Force, established by the Texas Commissioner of Education, made five recommendations to address challenges with teacher recruitment in rural areas (Texas Education Agency, 2017). The first was to increase the number of candidates entering the pipeline to become teachers by providing funding for districts to develop

For additional information, including background on the study, technical methods, and supporting analyses, access the report appendices at <https://ies.ed.gov/ncee/rel/Products/Publication/100848>

Grow Your Own (GYO) programs. Teachers prepared through GYO programs—particularly former paraprofessionals—have higher retention rates compared with teachers from traditional educator preparation programs (Abramovitz & D’Amico, 2011; Fortner et al., 2015). In addition, GYO programs recruit high school students and adults to teach in the communities in which they live, thereby creating a teacher workforce that is more likely to represent the demographic composition of the community (Skinner et al., 2011; Valenzuela, 2016). Students tend to have more positive academic and behavioral outcomes when taught by teachers who share their race (Dee, 2004; Egalite et al., 2015; Lindsay & Hart, 2017). Recruiting high-quality and diverse teachers and mentors whose ethnicities reflect those of their students can help students see teaching as a desirable and attainable career option (Greenberg Motamedi et al., 2018).

In 2018, the Texas Education Agency launched a two-year competitive grant program funded by the state legislature in response to the Texas Rural School Task Force recommendations and has since funded four cycles of the program. The grant program, open to all Texas districts, provides funding for districts to implement GYO programs through two pathways.¹ The purpose of both pathways is to increase the entry of qualified, diverse candidates into the teaching profession, particularly in rural and small school settings. (More detailed descriptions of the pathways are in appendix A.)

- Pathway 1 aims to address teacher shortages by providing high-quality opportunities for high school students—particularly those in rural communities and students of color—to be exposed to the teaching profession early in their career trajectory. With funding from the GYO grant program, districts can establish or expand existing education and training courses offered by high schools. These courses comprise a recommended sequence of courses for the state-approved Education and Training Career Cluster in Texas, which focuses on planning, managing, and providing education and training services and related learning supports. In addition, students can earn college credit through dual enrollment courses with community colleges. When offered as dual credit, the intent of education and training courses is to incentivize students to persist in pursuing education as a career, with the goal of increasing the number of students who complete postsecondary programs in education, earn teaching certificates, and enter teaching.
- Pathway 2 aims to address teacher shortages by increasing the number of currently employed paraprofessionals (including instructional aides and long-term substitute teachers) who pursue teaching credentials and subsequently become full-time certified teachers. With funding from the GYO grant program, districts can provide paraprofessionals stipends to cover tuition, fees, and living costs as they pursue teacher certification.

Leaders at the Texas Education Agency partnered with Regional Educational Laboratory Southwest to conduct a study about the characteristics of GYO districts and the progress and early outcomes of students and paraprofessionals in districts awarded GYO grants. They were interested in using the

¹ A third pathway (pathway 3) is open to educator preparation programs. This pathway focuses on developing well-qualified teacher candidates through a one-year clinical teaching assignment or an intensive preservice experience with a clinical component. This study did not address pathway 3.

findings to better understand the characteristics of program participants and the progress of districts in achieving the GYO grant program aims and to help identify aspects of the program that might need further investigation.

Research questions

This study addressed two primary sets of research questions. The first set (research questions 1 and 2) was about the characteristics of districts receiving GYO grants in each cycle. The second set (research questions 3-5) was about early outcomes related to pathway 1 (completion of education and training courses among high school students in GYO and comparison districts).

1. What were the geographic locales of GYO districts in 2018/19? Did they differ from the geographic locales of non-GYO districts?
2. How did the characteristics of GYO districts compare with districts in the same region with the same geographic locale type in 2018/19?
3. What percentage of high school students completed education and training courses in GYO districts in 2018/19 and 2019/20 (that is, in cycle 1 and the first year of cycle 2)?
4. Were there differences in the grade-level and demographic characteristics of students in GYO districts who completed at least one education and training course each year in 2018/19 and 2019/20 compared with students in GYO districts who did not complete any education and training courses?
5. How did the completion of education and training courses in GYO districts compare with districts in the same region with the same geographic locale type that did not participate in the GYO grant program before and after the grant awards (between 2015/16 and 2019/20)?

The study also addressed two sets of supplemental questions related to the characteristics and early outcomes of paraprofessionals in districts that implemented pathway 2 (research questions 6 and 7) and the career plans of students enrolled in education and training courses (research question 8). The study team considered these questions supplemental because of major limitations in the data used to address them. These questions and the methods used to address the questions are in appendix B.

Definitions of key terms are in box 1. The data sources, sample, and methods used to answer the primary research questions are in box 2.

Box 1. Key terms

Comparison districts. Texas districts that did not participate in cycle 1 or cycle 2 of the Grow Your Own (GYO) grant program but were in the same Education Service Center region with the same geographic locale type as GYO districts.

Education and training courses. A recommended sequence of courses for the state-approved Education and Training Career Cluster in Texas, which focuses on planning, managing, and providing education and training

services and related learning supports. In addition, students have the opportunity to earn college credit through dual enrollment courses with community colleges.

Education Service Center region. A region served by one of the 20 regional Education Service Centers in Texas (see figure B1 in appendix B). These centers provide districts with an array of services customized to the regional context.

Geographic locale. The locale designation for a district based on categories in the locale classification system developed by the National Center for Education Statistics (Geverdt, 2019). Districts could be in cities, suburbs, towns, or rural areas.

GYO program. A program designed to recruit, develop, and retain teachers who are members of the local community. The Texas Education Agency GYO grant program competitively awards state funds to districts to develop and expand existing high-quality education and training courses for high school students and to create opportunities for paraprofessionals to obtain full-time certified teaching positions.

GYO districts. Texas districts that participated in cycle 1 (2018/19 and 2019/20) or cycle 2 (2019/20 and 2020/21) of the GYO grant program. Districts could participate in pathway 1 only, pathway 2 only, or both pathways in the same two-year cycle.

Non-GYO districts. Texas districts that did not participate in either cycle 1 or cycle 2 of the GYO grant program.

Paraprofessionals. For this study, those listed as working as educational aides, certified interpreters, and substitute teachers in the Public Education Information Management System data provided to the study team.

Pathway 1. The pathway of the GYO grant program that focuses on recruiting future educators by offering education and training courses to current high school students. In some cases, students may earn both high school and college credit (that is, dual credit) while taking a course. Districts can use the grant funding to establish or expand existing education and training courses and an associated career and technical student organization at each high school in the district.

Pathway 2. The pathway of the GYO grant program that focuses on recruiting and supporting paraprofessionals (including instructional aides and long-term substitute teachers) currently employed by the district to transition to full-time certified teaching positions. Districts can recruit staff to obtain teaching credentials through partnerships with educator preparation programs. Staff remain employed in the district while they work toward certification.

Sequence completers. Students who earned credit for completing three or more education and training courses, one of which must have been completed during the GYO grant period and one being an upper level course (see table B2 in appendix B).

Standard teaching certificate. Issued to an individual who has met all the requirements for state certification in Texas.

Students who are economically disadvantaged. Students who are eligible for the National School Lunch Program and students who experience other economic disadvantages as defined by the Texas Education Agency (n.d.). This category includes students who are from a family with an annual income at or below the official federal poverty line, are eligible for Temporary Assistance for Needy Families or other public assistance, received a Pell Grant or comparable state program of need-based financial assistance, are eligible for programs under Title II of the Job Training Partnership Act, or are eligible for benefits under the Food Stamp Act of 1977.

Box 2. Data sources, sample, methods, and limitations

Data sources. The study used a combination of administrative data collected by the Texas Education Agency and publicly available data. The Texas Education Agency data came from the data repository at the Texas Education Research Center at the University of Texas at Austin. The following data were used to address the primary research questions:

- Program records of districts that participated in the Grow Your Own (GYO) grant program in cycle 1 (2018/19 and 2019/20) and the first year of cycle 2 (2019/20).
- Deidentified student demographic, course enrollment, and course completion records for 2015/16 through 2019/20.

Publicly available data included district locale codes downloaded from the Common Core of Data (National Center for Education Statistics, n.d.) and data on district characteristics downloaded from the Texas Education Agency website (Texas Education Agency, 2019).

Sample. The sample for research question 1 included 72 districts that participated in the GYO grant program in cycles 1 or 2 (GYO districts) and 1,121 districts that did not participate in these two cycles (non-GYO districts). The sample for research question 2 included the 72 GYO districts and 688 districts in the same region with the same locale type that did not participate in the GYO grant program (comparison districts). The district sample for research questions 3-5 included 59 GYO districts that implemented pathway 1, and the district sample for research question 5 also included 646 comparison districts. The student sample for research questions 3-5 included all high school students (ranging from 450,000 to 800,000 students) enrolled in sampled districts each year.

Methodology. For research question 1, the study team calculated the percentages of GYO districts and non-GYO districts in each geographic locale category (city, suburb, town, or rural area). For research question 2, the study team examined student characteristics (enrollment and the percentage of students by gender, race/ethnicity, economically disadvantaged status, English learner status, and special education status) and teacher characteristics (average years of experience and turnover rate) for GYO districts and comparison districts in 2018/19. The study team took the average of each characteristic for each cycle of GYO districts and comparison districts. For all research questions, differences or changes of 5 percentage points or greater are considered meaningful and discussed in the text.

For research question 3, the study team calculated the percentage of high school students who completed at least one education and training course in GYO districts in both 2018/19 and 2019/20. Among high school students who completed at least one such course in GYO districts, the study team calculated the number and percentage of students who completed one, two, three, and four courses within the grant period, as well as the number and percentage of students who completed a sequence of education and training courses (sequence completers) by 2019/20. If a student began taking these courses before their district received the GYO grant, the study team included that student's course completion data in the analyses. For research question 4, the study team calculated the distribution by grade and the demographic characteristics for students who completed at least one education and training course each year in 2018/19 and 2019/20 and for students who did not complete any such courses in GYO districts. For research question 5, the study team compared the percentage of students who completed at least one education and training course each year between 2015/16 and 2019/20 for both GYO districts and comparison districts.

Limitations. First, the study used available data through 2019/20 for high school course completion. However, the data were insufficient for examining sequence completers. It is unlikely that significant sequence completion would be observable within the two grant years (2018/19 and 2019/20), particularly for students in lower grades. Second, the study time frame did not capture long-term outcomes for high school students, such as entering an educator preparation program. Finally, the study did not account for the disruption that the COVID-19 pandemic may have had on students' course completion.

This study does not establish that participation in the GYO grant program caused early outcomes among students and paraprofessionals. Comparison districts may differ from GYO districts in ways not accounted for in the analysis, such as proximity to an educator preparation program or the availability of additional funding or initiatives to recruit and retain teachers. The findings provide information to the Texas Education Agency only about the characteristics of participants in the GYO grant program and relative changes in outcomes for GYO districts and other districts in the same region with the same locale type.

Data sources, samples, and methods for addressing the supplemental questions and a more detailed discussion of the study limitations are in appendix B.

Findings

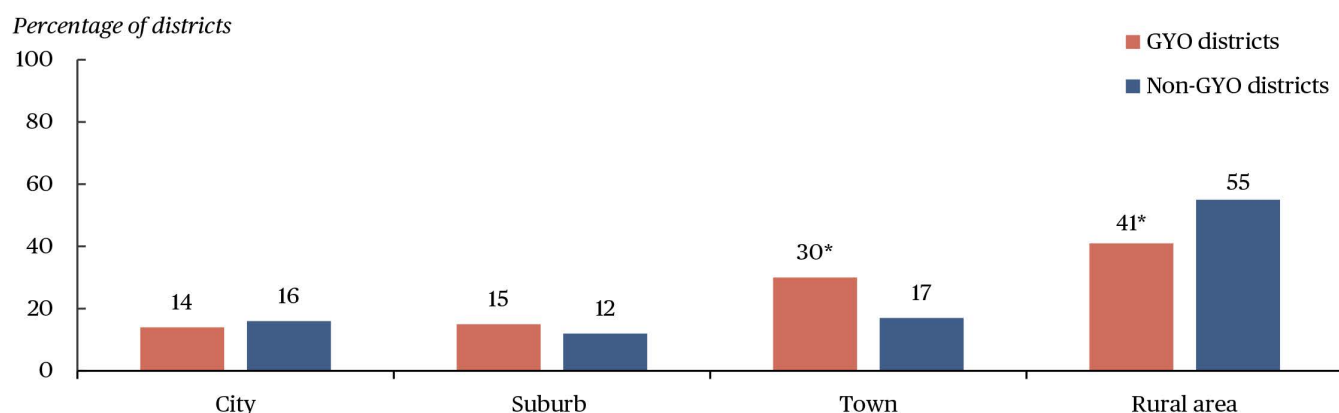
This section presents the findings from the primary research questions. Additional findings and supporting analyses are in appendix C. Findings from the supplemental analyses that examined outcomes for paraprofessionals and students' career plans are in appendix D.

Consistent with the focus of the Texas Education Agency, the majority of Grow Your Own districts were in rural areas or small towns; however, rural areas were still less represented among Grow Your Own districts than among non-Grow Your Own districts

Seventy-two districts participated in the first two cycles of the GYO grant program: 33 districts in cycle 1 and 39 districts in cycle 2. The majority of GYO districts (71 percent) were in towns or rural areas (figure 1). However, GYO districts were more likely to be in towns than non-GYO districts and were less likely to be in rural areas. Thirty percent of the GYO districts were in towns and 41 percent were in rural areas, whereas 17 percent of the non-GYO districts were in towns and 55 percent were in rural areas.

This difference in locale was driven by differences between the two cycles of GYO districts (see figure C1 in appendix C). Cycle 1 GYO districts were more likely to be in rural areas and less likely to be in towns compared with cycle 2 GYO districts. Fifty-two percent of cycle 1 districts were in rural areas and 21 percent were in towns, whereas 32 percent of cycle 2 districts were in rural areas and 38 percent were in towns. Cycle 1 GYO districts also were less likely to be in suburbs (12 percent) compared with cycle 2 GYO districts (18 percent).

Figure 1. Texas Grow Your Own districts in cycles 1 and 2 were primarily in rural areas and towns, 2018/19



* Denotes differences of 5 percentage points or greater between GYO districts and non-GYO districts.

GYO is Grow Your Own.

Note: Non-GYO districts are Texas districts that did not participate in cycle 1 or cycle 2 of the GYO grant program. The sample included 72 GYO districts and 1,121 non-GYO districts.

Source: Authors' analysis of data provided by the Texas Education Agency and publicly available data from the Common Core of Data.

The program appeared to meet the Texas Education Agency's goal of providing opportunities to students and paraprofessionals in small school settings and students of color to participate in Grow Your Own activities

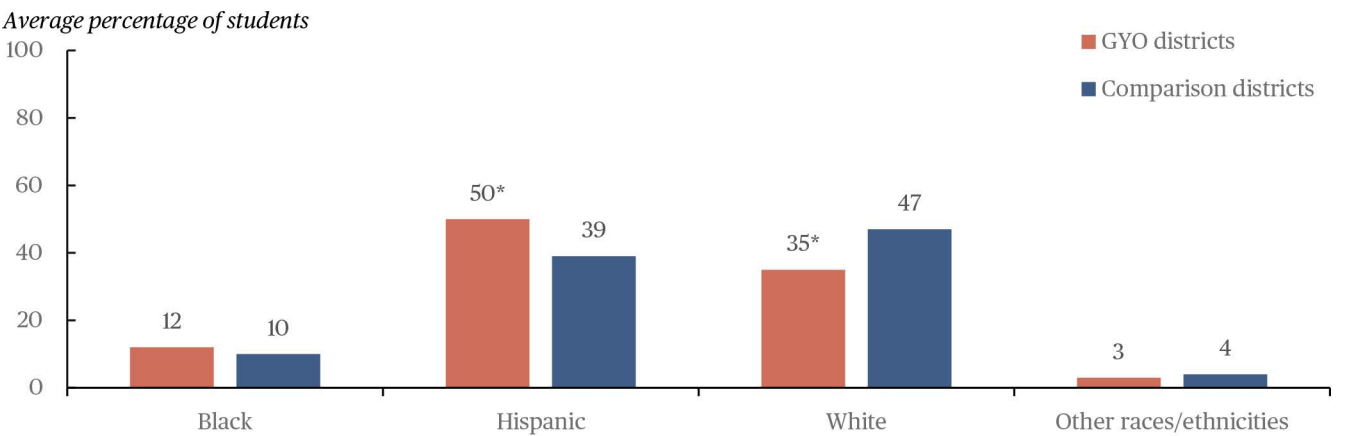
GYO districts were more likely to have a small enrollment than comparison districts in the same region with the same locale type. Twenty-two percent of the GYO districts enrolled fewer than 500 students, and another 50 percent enrolled between 500 and 999 students, whereas 17 percent of the comparison districts enrolled fewer than 500 students and 31 percent enrolled between 500 and 999 students (see table C1 in appendix C).

On average, 50 percent of the students by GYO districts were Hispanic versus 39 percent for comparison districts (figure 2). GYO districts also served a lower average percentage of White students (35 percent) than comparison districts (47 percent). There were no meaningful differences between GYO districts and comparison districts in the average percentage of Black students and students of other races and ethnicities (see table C1 in appendix C).

GYO districts had a higher average percentage of students who were economically disadvantaged than comparison districts (67 percent for GYO districts versus 59 percent for comparison districts; figure 3). There was no meaningful difference between GYO districts and comparison districts in the average percentage of English learner students and the average percentage of students in special education. However, an analysis that examined cycle 1 and cycle 2 GYO districts separately found that cycle 2 GYO districts had a higher average percentage of English learner students than comparison districts (18 percent for cycle 2 GYO districts versus 10 percent for comparison districts; see table C1 in appendix C).

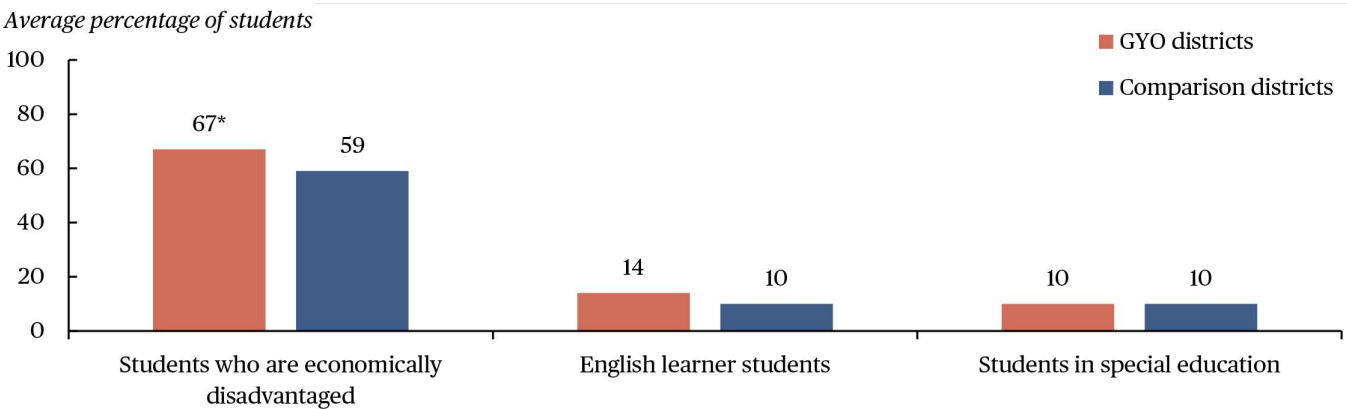
Finally, there were no meaningful differences between GYO districts and comparison districts in terms of the average teacher years of experience and the teacher turnover rate (see table C1 in appendix C).

Figure 2. On average, Texas Grow Your Own districts served higher percentages of Hispanic students and lower percentages of White students than comparison districts, 2018/19



* Denotes differences of 5 percentage points or greater between GYO districts and comparison districts.
GYO is Grow Your Own.
Note: Comparison districts are those in the same region with the same locale type as GYO districts and did not participate in either cycle of the GYO grant program. The “other races/ethnicities” category includes Asian, American Indian, Alaska Native, Pacific Islander, and two or more races. The study team combined these categories because of small percentages in each category. The sample included 72 GYO districts and 668 comparison districts.
Source: Authors’ analysis of data provided by the Texas Education Agency and publicly available data from the Texas Education Agency website.

Figure 3. On average, Texas Grow Your Own districts served higher percentages of students who were economically disadvantaged than comparison districts, 2018/19



* Denotes differences of 5 percentage points or greater between GYO districts and comparison districts.
GYO is Grow Your Own.
Note: Comparison districts are those in the same region with the same locale type as GYO districts and did not participate in either cycle of the GYO grant program. The sample included 72 GYO districts and 668 comparison districts.
Source: Authors’ analysis of data provided by the Texas Education Agency and publicly available data on the Texas Education Agency website.

Less than 10 percent of the students in Grow Your Own districts completed at least one education and training course each year during the grant period

Twenty-four GYO districts implemented pathway 1 in cycle 1, providing or expanding the opportunity for their students to take education and training courses in 2018/19 and 2019/20. About 8 percent of the grades 9-12 students in cycle 1 GYO districts completed at least one education and training course in 2018/19, and about 9 percent completed at least one such course in 2019/20 (see table C2 in appendix C). Taking both years of the two-year grant period together, 85 percent of the students who completed these courses completed one course and 14 percent completed two courses (see table C4 in appendix C).

Another 35 GYO districts implemented pathway 1 in cycle 2, which began in 2019/20. Because the most recent year for which data are available is 2019/20, only one year of course taking in cycle 2 districts was observable. As was the case in cycle 1, about 8 percent of the grades 9-12 students in cycle 2 GYO districts completed at least one education and training course in 2019/20 (see table C3 in appendix C). In cycle 2 districts, 92 percent of the students who completed these courses completed one course and 7 percent completed two courses in 2019/20 (see table C4 in appendix C).

Only about 1 percent of the students in grades 9-12 in GYO districts (both cycle 1 and cycle 2) completed a full sequence of education and training courses across 2018/19 and 2019/20 (see table C5 in appendix C).² Students who completed a full course sequence earned credit for three education and training courses; at least one of those courses was completed during the GYO grant period, and at least one course was an upper level course.

It is too soon to tell whether the Grow Your Own program will, over time, increase the number of male students who may be interested in becoming educators; however, early signs show that most students completing education and training courses in Grow Your Own districts were female

In GYO districts that implemented pathway 1, students who completed at least one education and training course each year differed in the following ways from their peers who did not complete any such courses (see table C6 in appendix C for additional information):

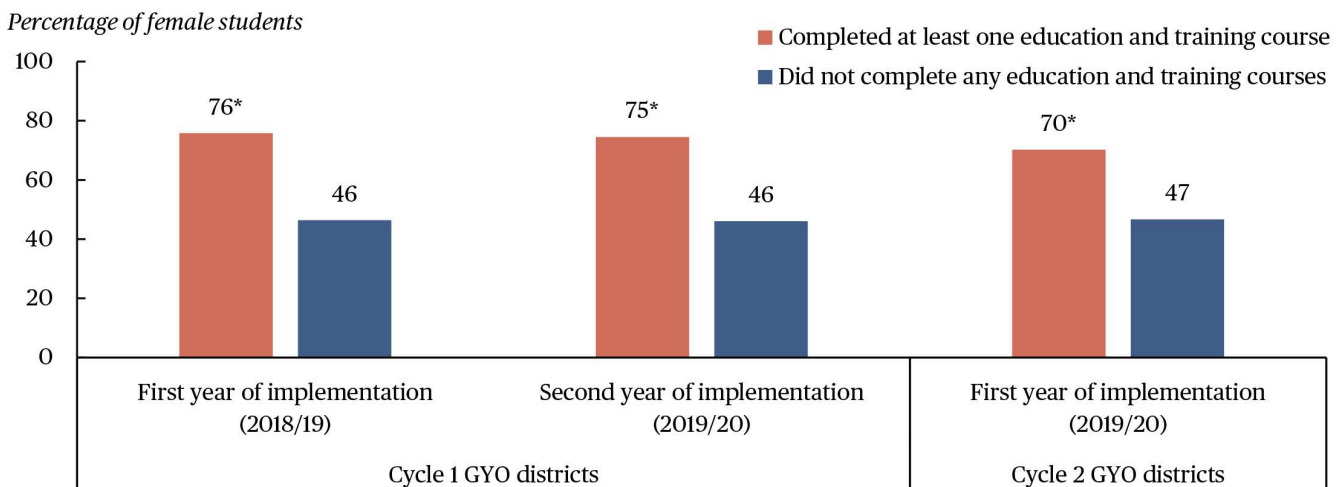
- In the first year of both grant cycles, there was a lower representation of grade 9 students and a higher representation of grade 12 students among students who completed at least one education and training course compared with those who did not complete any education and training courses (see table C6 in appendix C). In the first year of the cycle 1 grant award, 20 percent of the students were in grade 9 and 27 percent were in grade 12 among course completers, whereas the percentages almost reversed (28 percent in grade 9 and 21 percent in grade 12) for students who did not complete these courses. In year 2 of the cycle 1 grant award, there was an increase in the representation of grade 9 students (and a corresponding decrease in the representation of grade 12 students) among

² This number included the education and training courses that students took before the grant awards.

course completers, whereas the representation of students by grade remained unchanged among students who did not complete these courses.³

- In both cycle 1 and cycle 2 GYO districts, roughly three fourths of the students (70 percent to 76 percent) who completed at least one education and training course each year were female compared with 46 percent to 47 percent of students who did not complete any of these courses (figure 4).
- In cycle 1 GYO districts, 56 percent of the students completing at least one education and training course in 2019/20 (year 2 of the grant award) were economically disadvantaged compared with 49 percent of the students who did not complete any of these courses (see table C6 in appendix C). There were no meaningful differences in the percentages of students who were economically disadvantaged who completed at least one education and training course and students who did not complete a course in year 1 of the grant award in cycle 2 GYO districts.⁴

Figure 4. A higher percentage of students who completed at least one education and training course each year in Texas Grow Your Own districts were female compared with students in the same districts who did not complete these courses, 2018/19 and 2019/20



* Denotes differences of 5 percentage points or greater between students who completed at least one education and training course in GYO districts and students who did not complete these courses.

GYO is Grow Your Own.

Note: The samples of students who completed at least one education and training course and students who did not complete those courses were 3,313 students and 36,104 students in 2018/19 for cycle 1 GYO districts; 3,581 students and 36,583 students in 2019/20 for cycle 1 GYO districts; and 5,282 students and 36,583 students in 2019/20 for cycle 2 districts.

Source: Authors' analysis of datas provided by the Texas Education Agency and the Texas Education Research Center.

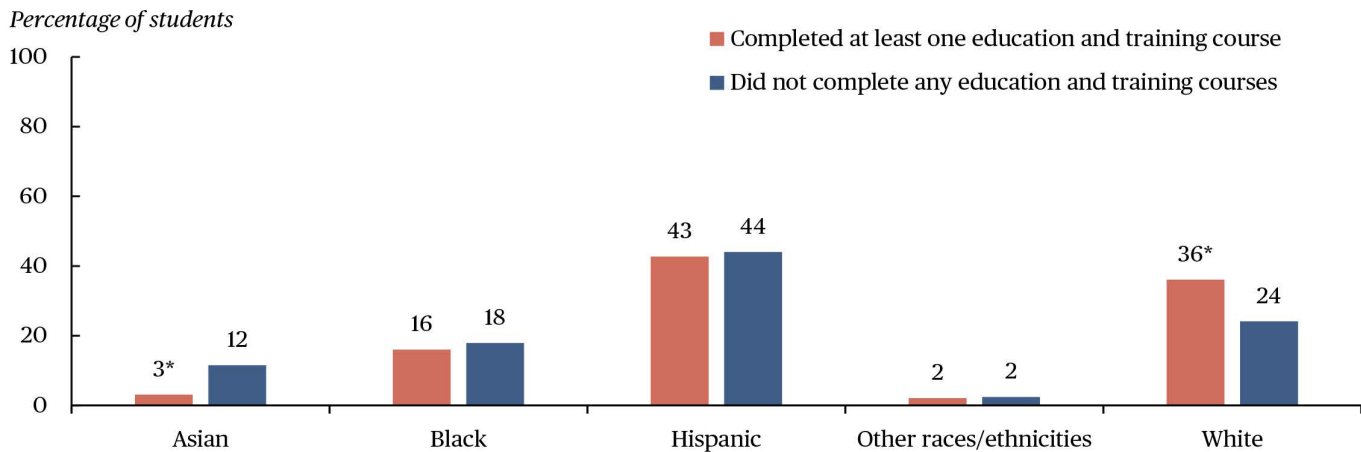
- In cycle 2 GYO districts, a higher percentage of students who completed at least one education and training course in 2019/20 (the first year of the grant award) were White (36 percent) and a lower percentage were Asian (3 percent) compared with students who did not complete any such courses

³ Because year 2 (2020/21) data for the cycle 2 grant award were not available, it is not known if this trend would occur in cycle 2.

⁴ Data on economic disadvantage were not available for 2018/19 and prior years (see appendix B). Therefore, the percentage of students who were economically disadvantaged in cycle 1 GYO districts in the first year of grant award is not known.

(24 percent were White and 12 percent were Asian; figure 5). However, there were no meaningful differences in the percentage of Hispanic students or the percentage of Black students who completed at least one education and training course in cycle 2 (see figure 5). There also were no meaningful differences in the racial/ethnic composition of students who completed at least one course and students who did not complete a course in cycle 1.

Figure 5. A higher percentage of students who completed at least one education and training course in cycle 2 Texas Grow Your Own districts were White and a lower percentage were Asian compared with students who did not complete any such courses, 2019/20



* Denotes differences of 5 percentage points or greater between students who completed at least one education and training course in GYO districts and students who did not complete these courses.

GYO is Grow Your Own.

Note: The “other races/ethnicities” category includes American Indian, Alaska Native, Pacific Islander, and two or more races. The study team combined these categories because of small percentages in each category. The sample included 5,282 students who completed at least one education and training course and 60,525 students who did not complete these courses.

Source: Authors’ analysis of data provided by the Texas Education Agency and the Texas Education Research Center.

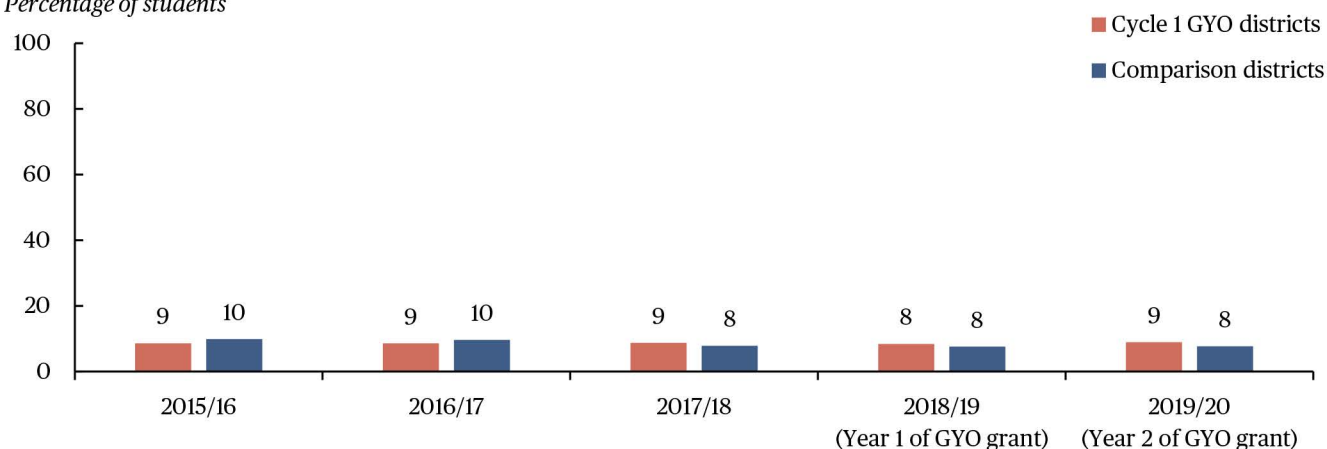
It is too soon to tell whether the Grow Your Own program will, over time, help the state increase the size of its teaching pool; however, early signs suggest that the share of students completing education and training courses in Grow Your Own districts is unchanged since 2015/16 and similar to that in comparison districts

The percentage of students completing at least one education and training course each year was similar in GYO districts and comparison districts, with differences of 1 percentage point or less (figures 6 and 7). The percentage of students completing at least one education and training course in cycle 1 GYO districts remained consistent before and after implementing the GYO grant program, at about 8 percent or 9 percent of students, whereas the percentage in the comparison districts decreased slightly, from 10 percent in 2015/16 to 8 percent in 2019/20 (see figure 6).

The characteristics of students who completed at least one education and training course in GYO districts and those in comparison districts also were similar, and the characteristics did not change before and after the grants in GYO districts or comparison districts (see table C7 in appendix C).

Figure 6. The percentage of high school students completing at least one education and training course were similar in cycle 1 Texas Grow Your Own districts and comparison districts, 2015/16–2019/20

Percentage of students



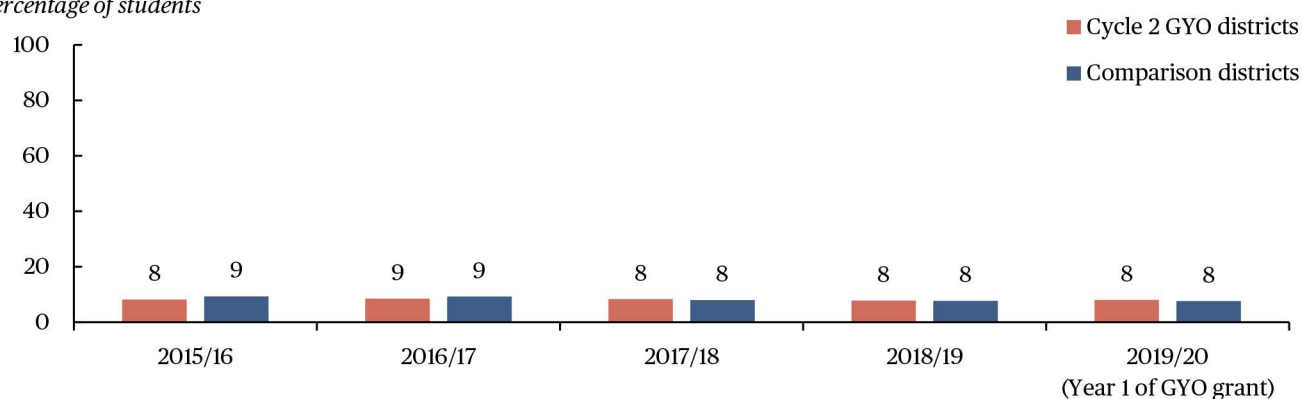
GYO is Grow Your Own.

Note: Comparison districts are those in the same region with the same locale type as GYO districts and did not participate in either cycle of the GYO grant program. For cycle 1 GYO districts, the sample included 36,519 students for 2015/16, 37,765 students for 2016/17, 38,903 students for 2017/18, 39,417 students for 2018/19, and 40,164 students for 2019/20. For comparison districts, the sample included 434,245 students for 2015/16, 444,922 students for 2016/17, 453,387 students for 2017/18, 459,475 students for 2018/19, and 468,078 students for 2019/20. The study team rounded the data labels on the bars to zero decimal places, and the height of each bar reflects the underlying data value without rounding.

Source: Authors' analysis of data provided by the Texas Education Agency and the Texas Education Research Center.

Figure 7. The percentage of high school students completing at least one education and training course were similar in cycle 2 Texas Grow Your Own districts and comparison districts, 2015/16–2019/20

Percentage of students



GYO is Grow Your Own.

Note: Comparison districts are those in the same region with the same locale type as GYO districts and did not participate in either cycle of the GYO grant program. For cycle 2 GYO districts, the sample included 61,078 students for 2015/16, 62,776 students for 2016/17, 63,917 students for 2017/18, 64,470 students for 2018/19, and 65,807 students for 2019/20. For comparison districts, the sample included 728,410 students for 2015/16, 746,480 students for 2016/17, 759,780 students for 2017/18, 770,599 students for 2018/19, and 784,746 students for 2019/20. The study team rounded the data labels on the bars to zero decimal places, and the height of each bar reflects the underlying data value without rounding.

Source: Authors' analysis of data provided by the Texas Education Agency and the Texas Education Research Center.

Implications

The study findings have three main implications for leaders at the Texas Education Agency as they seek to continuously improve the GYO grant program.

Implement strategies for increasing participation in education and training courses

Although it is too soon to tell whether the GYO grant program will, over time, help increase the size and diversity of the state's teaching pool, early findings show that the percentage of students completing any education and training courses each year in GYO districts was just below 10 percent and remained unchanged since 2015/16, and there were no meaningful differences in course completion between GYO and comparison districts. The Texas Education Agency and GYO districts may want to consider implementing strategies to encourage and support more students to enroll in education and training courses and pursue a career in education. Studies of existing GYO programs in the United States have reported descriptive evidence of promising strategies for increasing students' participation in GYO programs and their interest in a teaching career (Hanover Research, 2019).⁵ One such strategy is to build awareness of education careers early on (for example, in elementary and middle grades). Another is to ensure that students have consistent, high-quality learning experiences in education and training courses. This could include adopting and providing supports for teachers to implement a standards-aligned curriculum that integrates rigorous academic and technical content and providing meaningful and coursework-aligned work-based learning experiences, such as job shadowing opportunities focused on education careers. A third strategy is to provide supports financially (for example, scholarships), academically (for example, tutoring), and socially (for example, peer mentoring; Hanover Research, 2019; Muñiz, 2020).

Further investigate barriers to participating in education and training courses and implement strategies for diversifying participation

The early findings show that the majority of students completing education and training courses in GYO districts were female. A higher percentage of students who completed at least one education and training course in cycle 2 districts were White compared with students in the same districts who did not complete these courses. It is still too soon to tell whether the GYO grant program will increase the number of male students and students of color who may be interested in becoming educators. To support diversification in course enrollment and completion, the Texas Education Agency and GYO districts may want to consider further investigating barriers and other factors that may affect participation in education and training courses for male students and students of color and providing additional and targeted support for addressing these barriers. The supports could include bringing cultural knowledge into the curriculum and incorporating a specific focus on equity and diversity into instruction (Hanover Research, 2019; Putman et al., 2016).

⁵ For example, these outcomes were reported for the Pathways2Teaching program in Colorado, the Recruiting Washington Teachers program in Washington state, and South Carolina's statewide Teacher Cadet Program.

The Texas Education Agency and districts also could consider promising strategies for promoting student participation in GYO programs identified in the field and the literature. These strategies might be coordinating with educator preparation programs and community organizations to design and implement active recruitment approaches; intentionally targeting recruitment efforts on students from underrepresented groups; employing multiple strategies to recruit students (from social media to community events to special outreach events); and offering incentives such as stipends, dual credit, and college scholarships (Greenberg Motamedi et al., 2018).

In addition, GYO programs are just one strategy to deal with the larger systemic issue of teacher shortages. The Texas Education Agency should continue to explore additional transformational strategies that will improve the teaching profession and support recruitment of a diverse and high-quality teacher workforce.

Collect data to support program improvement

The data sources used in this study capture information only at some points for high school students and paraprofessionals who are pursuing a teaching career, with large gaps in between. In particular, the data on paraprofessionals were very limited. The data did not allow the study team to reliably identify paraprofessionals who participated in pathway 2 activities and examine their progression toward certification. The data on pathway 1 also were limited for two reasons:

- The time to complete a course sequence varies, and two years of data analysis may not capture an increase in course sequence completion, particularly for students who started high school in 2018/19 and 2019/20 and who choose to complete education and training courses later in their high school years.
- The Texas Education Agency did not provide a student-level variable for course sequence completion. The study team developed one based on the definition provided by the Texas Education Agency.

The survey data used to address the supplemental research questions about the career plans of students enrolled in education and training courses also were limited because the study team could not link data to student administrative data, and the response rates were unknown (see more discussion in appendix B). Although the study findings are useful for helping leaders at the Texas Education Agency understand the early progress and outcomes of the GYO grant program, any decisions the early findings can inform are limited by the constraints of the data available to the study team.

The Texas Education Agency could work with districts and educator preparation providers to design strategies to collect and validate data on GYO grant program participants in different stages: selection, progression, completion of an educator preparation program, certification, and employment. The Texas Education Agency and districts could use these data to better track program progress and outcomes for future grant cycles and to better understand the short-, medium-, and long-term

outcomes of GYO pathways and the ability of the programs to address shortage areas and recruit ethnically, racially, and linguistically diverse candidates.

State leaders may consider conducting surveys or interviews with GYO program directors to gather information on how districts used the grant funds, what activities the district implemented, and the perceptions of barriers to increasing participation in these programs. State and district leaders also may want to conduct interviews or focus groups to better understand the barriers to participating in education and training courses for high school students, barriers to pursuing certification and entering the teaching profession for paraprofessionals, existing recruitment efforts, and other key contextual information on implementing GYO programs. Focus groups and interviews can provide in-depth information about participants' experiences and can support the design of potential solutions grounded in stakeholder input and evidence from research.

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