



OnRamps and Teacher Retention in Texas

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November 2024

Executive Summary

Focus on teacher retention has grown as retention rates have decreased in recent years, especially in the wake of the COVID pandemic. OnRamps, the signature dual-enrollment program at the University of Texas at Austin, incorporates many professional learning and networking strategies that can potentially impact teacher retention. This study examined the extent to which OnRamps teachers are more likely to remain at their campus and in the teaching profession in Texas. We find that participation in OnRamps, as well as teaching at a campus with more advanced academics, has a positive impact on teacher retention at the campus and state level.

What We Studied

Teacher retention has long been an important topic for district and school administrators as well as policymakers. Focus on this topic has grown as retention rates have decreased in the wake of the COVID pandemic. According to the Texas Education Agency, teacher attrition rates in Texas historically hovered around 10.4%. However, 13.4 percent of teachers left teaching after the 2021-22 school year and 12.2 percent left after the following year (Landa, 2024).

Given the importance of teachers to student achievement and attainment (Rivkin, et al., 2005), a variety of programs and strategies designed to improve teacher retention have been implemented and studied over time. There is evidence that professional learning support (Burns, et al., 2020) and professional networks (Smith and Ingersoll, 2004) can have positive impacts on teacher retention.

OnRamps, the signature dual-enrollment program at the University of Texas at Austin, offers extensive professional learning support and an ability for instructors to develop new professional networks. As part of the program requirements, teachers new to implementing an OnRamps course participate in two weeks of professional learning and teachers implementing OnRamps courses in the second year and beyond participate in two days of professional learning sessions each summer. Additionally, all teachers attend up to six virtual conferences throughout the school year. These professional learning institutes and virtual conferences provide training on curriculum, pedagogy, and technology.

The program design intentionally includes facilitated networks to provide OnRamps instructors an opportunity to expand their own professional networks and create professional learning communities with other teachers in their field or working in similar school settings, allowing them to connect with other instructors teaching the same curriculum even if there are no other such teachers on their campus.

Given the professional learning support and networking that OnRamps provides, this study investigated the extent to which participation in OnRamps promotes teacher retention. We looked at teachers in Texas to see the characteristics that are associated with becoming an OnRamps instructor, the impact of OnRamps on teacher retention rates, and the likelihood of professional advancement for OnRamps teachers.

How We Analyzed the Data

Samples

We examined high school teachers in Texas who taught at a public or charter school between the 2013-14 and 2021-22 school years, as identified by the Texas Education Agency (TEA). The primary subset of this broader sample was any high school teachers who taught at least one dual-enrollment course through OnRamps over this time period. Distinct fiscal year – instructor IDs comprised the entire panel data ($n = 1,102,799$), with 1,098,183 instructors over the 9-year period having no association with OnRamps and 4,616 having OnRamps experience. Table 1 displays the number of OnRamps and Non-OnRamps instructors by year. The yearly panel data was completed with information about the district and campus where these teachers were employed, plus data on all students enrolled in those high schools from fall 2013 through spring 2022. It is worth noting that the number of OnRamps instructors per year grew from 14 in 2013–14 to over 1,100 in 2021–22, highlighting that this study captures a period of tremendous growth in the program. One restriction on the sample was imposed to better flush out answers to the final research question. A small number of instructors who had been employed in advanced roles *prior* to teaching an OnRamps course were excluded so that the relationship between participation in OnRamps and high school teachers’ likelihood of professional advancement could be explored. Supplemental OnRamps data, deidentified by TEA, was merged into TEA employment and used to identify the OnRamps high school instructors. State Board of Education (SBEC) data was used to determine the number and types of certifications earned by instructors in the sample, with specific attention paid to those with non-standard certifications and those teaching a population, subject area, or level for which they were not certified.

Table 1: Sample By Year

Fiscal Year	Non-OnRamps Instructors	OnRamps Instructors	Total
2014	118,196	14	118,210
2015	120,864	43	120,907
2016	118,811	87	118,898
2017	120,766	164	120,930
2018	124,425	275	124,700
2019	125,454	822	126,276
2020	118,691	956	119,647
2021	126,601	1,124	127,725
2022	124,375	1,131	125,506
Total	1,098,183	4,616	1,102,799

Outcomes

Three key outcome variables of interest were explored: 1) retention in teaching (anywhere in the state); 2) retention at one's school; and 3) professional advancement. State retention in teaching is a dichotomous indicator of whether a teacher identified in year $t-1$ is still teaching in year t , anywhere in the state, regardless of district, campus or classes taught. The second outcome, campus retention was restricted to retention at the same school where the teacher taught the previous year. The "role" and campus codes in the p_employ tables provided by TEA were used to calculate these outcomes. Professional advancement was measured in two different ways. First, using demographic information from both TEA and SBEC data the percentage of instructors having completed a master's degree was compared between OnRamps and non-OnRamps teachers. Second, using TEA data and the "role" code in the p_employ tables, we looked at whether teachers move into more advanced roles within education, such as instructional coaches, counselors, or school administrators.

Independent variables

A variety of teacher variables were used to compare OnRamps to non-OnRamps teachers and to control exogenous factors in our analyses of the relationship between OnRamps participation and teacher outcomes. These variables include: 1) overall years of experience in public education in Texas; 2) years working as a teacher in public education in Texas; 3) years working in the specific school the teacher is employed in a particular year; 4) the total number of educator certifications the teacher has earned; 5) whether the highest level of certification earned was a standard or non-standard certification; 6) whether or not teachers have earned a master's or higher degree; and 7) demographic characteristics (race/ethnicity, gender). We controlled for the characteristics of the schools where teachers were employed in two ways. First, school-level fixed effects were included in statistical models to account for all time-invariant school-level variation in teacher outcomes and to better isolate the relationship between teacher characteristics and their employment outcomes. These school fixed effects will also account for district and regional differences, given that schools are nested in these larger structures. Second, we controlled for the student and educator characteristics of the school that are time-varying. These characteristics include the percent of students at a campus, or in a classroom with the following demographic characteristics: Hispanic or African American race/ethnicity, economically disadvantaged, female, identified as bilingual or English as a second language, and special education identified. Campus academic characteristics included accountability rating, average end of course (EOC) test scores for both Algebra I and English I, percentage of student-courses¹ at a campus that are as defined by TEA in p_course_complete, out of the total student-courses for a campus. Because not all students had EOC scores, campus-level means were used to impute any missing student scores. Additionally, professional characteristics of educators in the school (percent with non-standard certifications, years employed by the state, years employed

¹ A student-course is defined as a unique record for each student and course. That is, a student who takes eight courses in a semester will have eight student-course records for that semester.

by the campus, years of high school teaching experience, percent with master's degree or higher) were included in models together with the number of students enrolled at the campus each year.

Statistical Methods/Models

The first research question exploring the differences between OnRamps and non-OnRamps teachers was addressed in two ways. First, descriptive characteristics of OnRamps vs. non-OnRamps teachers were calculated to assess differences between the groups. Second, using STATA's xtlogit, a fixed-effects logistic regression model was created using the outcome of whether a teacher participated in OnRamps or not while controlling for campus-level fixed effects (xtset with campus ID). The model initially controlled for all the teacher characteristics discussed above; however, after observing high correlations between several variables, these three were removed from the final model: number of years employed by the state, number of years teaching high school, and state retention.

The second research question was answered using panel data to calculate and compare state and campus retention rates for 2015 through 2022. The remaining two research questions were addressed using panel data modeling techniques with roughly the same analytical approach applied to different outcomes. We used STATA's REGHDFE function with campus and instructors set as fixed effects so that we could control for unobserved campus-specific and instructor-specific characteristics and set campus as the cluster so that the model adjusts for potential heteroskedasticity and serial correlation within campuses. We regressed this model on one of three outcomes (overall retention in the state, campus retention, or professional advancement to a new role), while controlling for the influence of instructor and campus-level student demographics plus fiscal year effects. As with the xtlogit model, several variables had to be eliminated from the model due to collinearity and when this was the case, instructor-level variables were given precedent over campus-level variables. Campus-level percentages of a student's race/ethnicity, their economic disadvantage status, bilingual or English as a second language identified, along with EOC Algebra and English I means were all removed in favor of including those percentages at the classroom level. Coefficients of these models will represent the expected change in state retention, campus retention, or professional advancement, for a one-unit increase in the predictor variable, holding the fixed effects constant. For example, the coefficient on the OnRamps indicator will tell us how much the probability of retention changes when the instructor is identified as an OnRamps instructor, controlling for campus and instructor fixed effects. The standard errors account for clustering at the campus level, which adjusts for potential correlation of errors within campuses. This makes the standard errors robust to heteroskedasticity and autocorrelation within clusters.

What We Discovered

We present a visual comparison of OnRamps and non-OnRamps teachers for various demographic characteristics in figure 1. The most striking difference evident in the figure is the percentage of non-standard certifications, which shows OnRamps instructors have a much lower percentage of non-standard certifications compared to the overall population of Texas high school teachers. OnRamps instructors look very much like the general population of high school teachers when it comes to both gender and race. They have earned master's degrees or PhDs at a slightly higher rate. And, while not displayed on the graph, there is almost no difference in the number of certifications carried by the two groups.

Results of the xtlogit model reveal several significant differences between OnRamps and other high school instructors. One major difference is that OnRamps teachers have a much greater probability of working at campuses with higher percentages of economically disadvantaged students (odds ratio = 3, $p < 0.005$), students who are Hispanic or African American (odds ratio = 30, $p < 0.005$), or those receiving bilingual or ESL services (odds ratio = 3, $p < 0.005$). This means that when a campus's percentage of economically disadvantaged or bilingual-ESL students increases by 1, the probability of an OnRamps teacher working there increases by 3, or that when the percentage of Hispanic or African-American students increases by 1, the probability of an OnRamps teacher working there increases by 30. In conclusion, it appears OnRamps instructors as a group hold standard certifications and are more likely to stay at their campus from one year to the next. Furthermore, they teach at schools with higher percentages of economically disadvantaged students, higher percentages of Hispanic or African American students, and higher percentages of bilingual-ESL students.

Figure 1: OnRamps and Non-OnRamps Instructors Compared

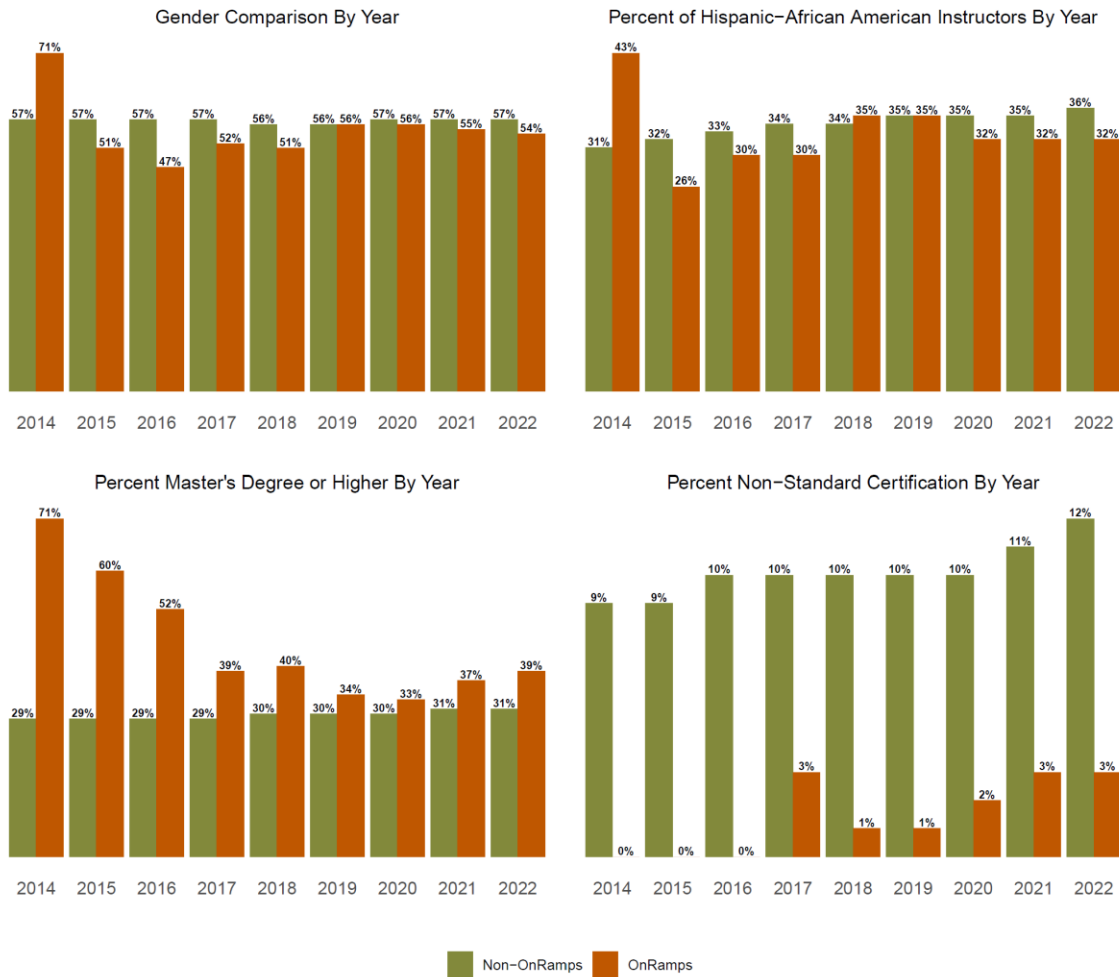
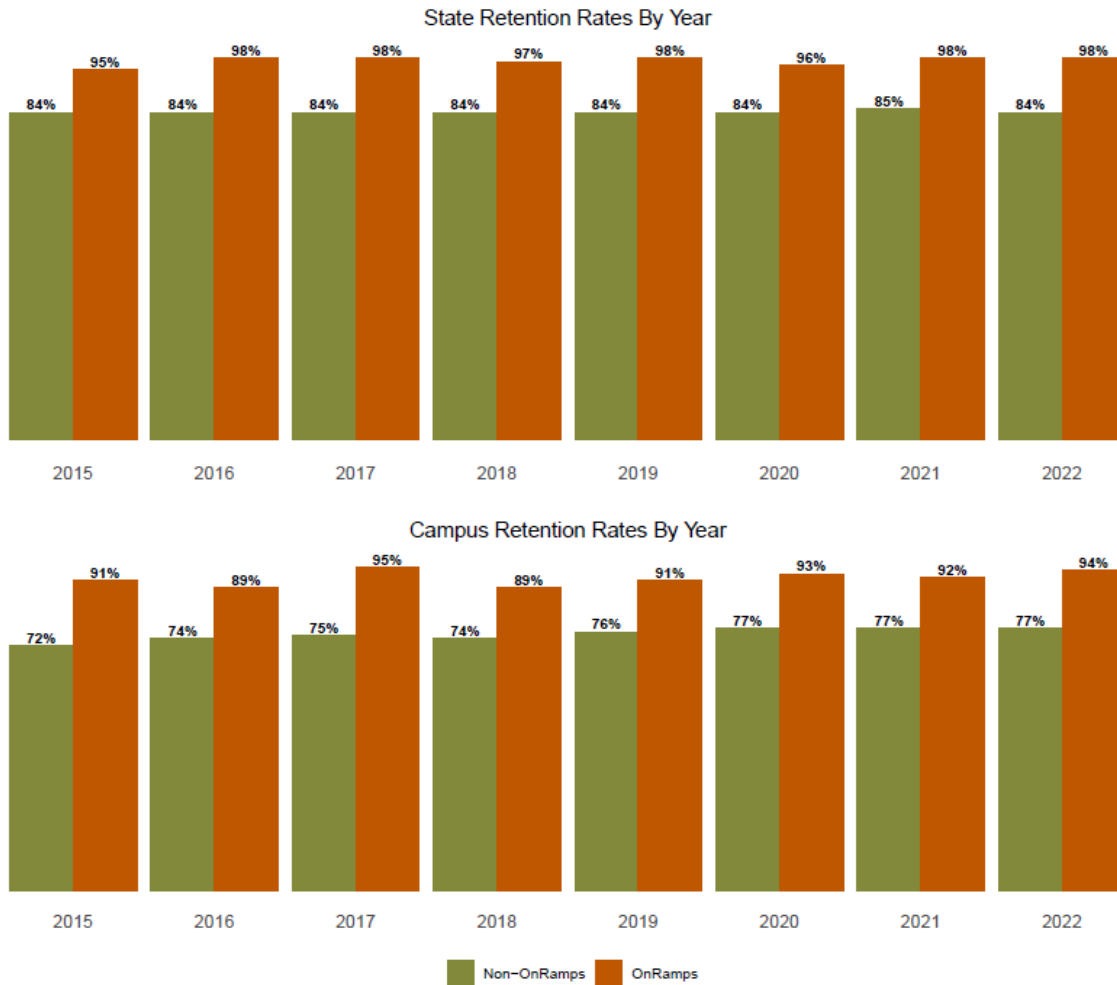


Figure 2 displays a comparison of state and campus retention rates by year. It is visually evident that OnRamps instructors have higher state and campus retention rates compared to the overall population of Texas high school teachers for each year of the study. OnRamps instructors' state retention rates range from a low of 95% (2015) to a high of 98% (5 of the 9 years, including 2022). Comparatively, non-OnRamps instructors had retention rates of 84% for all years in the study except 2021 which was 85%. The differences in state retention rates range from a low of 11 percentage points (2015), OnRamps rate = 95% compared to 84% for non-OnRamps, to a high of 14 percentage points in several years. The difference in campus retention rates is even larger ranging from 15% to 20%. OnRamps teachers' campus retention rates go from 89% to 95% with no obvious pattern of growth or decline through the years. Campus retention rates for all other high school teachers peak at 77% with a low of 72% and likewise show no pattern over the years.

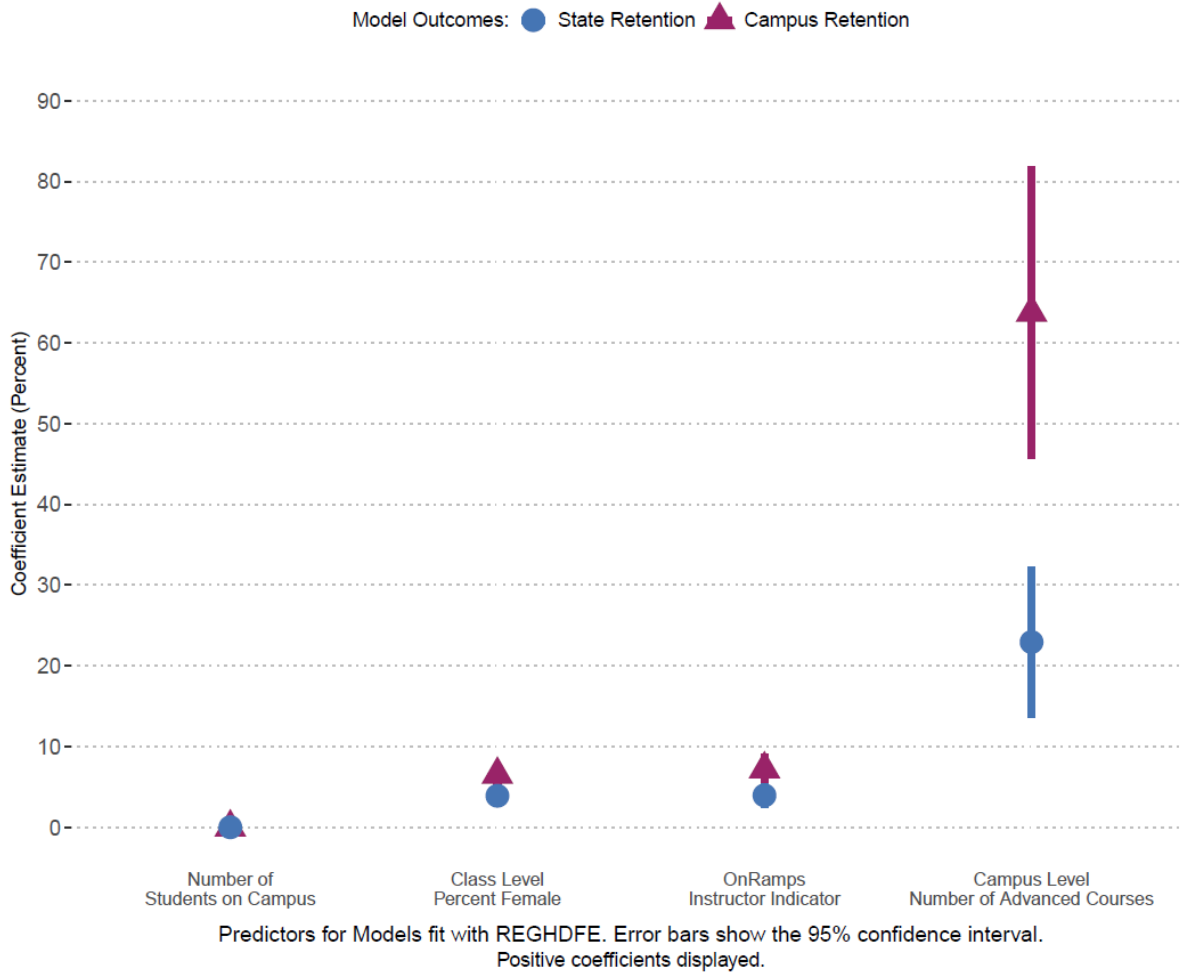
Figure 2: OnRamps and Non-OnRamps Instructors' Retention Rates



Modeling state and campus retention using instructor fixed effects nested within campus while controlling for various classroom and campus level characteristics and the year produced models with parallel results. The state retention model produced a significant and positive coefficient for the OnRamps indicator, revealing the effect of being an OnRamps teacher is associated with a 4% ($p < 0.001$) increase in the probability of state retention versus non-OnRamps teachers. Other significant and highly positive contributors to state retention are classroom level percentage of females (4% increase, $p < 0.001$) and the percentage of advanced student-courses offered at the campus (23% increase, $p < 0.001$). Negative contributors at the classroom level were percents of Hispanic and African American students (5% decrease, $p < 0.001$), economically disadvantaged (3% decrease, $p < 0.001$) and special education students (3% decrease, $p < 0.001$). Being an OnRamps instructor had an even greater effect on the probability of campus retention with a 7% increase ($p < 0.001$) in campus retention versus non-OnRamps instructors. Similarly, campus retention is also more strongly associated with the percentage of advanced student-courses offered at the campus (64% increase, $p < 0.001$). Parallel to the state retention model, significant model variables were classroom level percentage of females (7% increase, $p < 0.001$), percents

of Hispanic and African American students (4% decrease, $p < 0.001$), economically disadvantaged (4% decrease, $p < 0.001$). As expected, all years were significant at the 0.001 level for both state and campus retention models.

Figure 3: Figure 3: REGHDFE Model Estimates for State and Campus Retention



The final research question exploring the relationship between participation in OnRamps and high school teachers' likelihood of professional advancement was unable to be answered by the instructor fixed effects nested in campuses model which did not converge due to insufficient number of campuses with an OnRamps instructor who went on to an advanced role. A possible explanation for this is that OnRamps instructors are content to teach these courses and do not feel the need to move into advanced roles. Additional possible explanations include those factors that are associated with teacher retention in challenging teaching fields and in the professional overall. Teachers who have access to sufficient resources and appropriate levels of professional learning and development experience more reasons to remain in the teaching career field.

In conclusion, it can be stated that high school teacher retention is closely tied to the percentage of advanced student-courses taught at a campus, regardless of the demographic or academic characteristics of a campus. OnRamps high school instructors are more likely to stay in teaching both at the state level and at their campus versus the general pool of high school teachers.

Policy Recommendations/Conclusion

This study investigated the extent to which OnRamps, the dual-enrollment program at the University of Texas at Austin, increased teacher retention. The results of this study show that OnRamps instructors remain in teaching roles at their campuses and in the state of Texas at higher rates than non-OnRamps teachers. This study also revealed a relationship between advanced academic offerings in general at a campus and teacher retention: Teachers at campuses with more advanced academics are more likely to remain teaching in Texas and at their campus.

Although investigating the reasons that OnRamps instructors continue teaching at a higher rate is beyond the scope of this study, previous research suggests some explanation. A previous study (Giani, et al., *in preparation*) shows that the professional networks of new OnRamps instructors evolve over the course of their first year. Teachers form stronger connections with OnRamps staff increasingly connect with each other for support throughout the year. Teachers highly engaged with the OnRamps network were found to be more likely to continue teaching OnRamps courses. The researchers theorize professional learning networks such as OnRamps may lead to teachers developing increased sense of instructional self-efficacy, feeling less isolated in their work, and being more satisfied with their careers and jobs. This may be particularly beneficial for teachers in smaller schools where there are often fewer instructors teaching similar courses to connect with.

The additional finding that the probability of retention is increased when a campus has more advanced academic offerings suggests that there are likely other causes as well. Again, investigating the reasons for this increased retention is beyond the scope of this project. This is a good area for future research.

Policymakers and school administrators who are looking to increase teacher retention should bolster support for advanced academics. Texas has recently made a significant commitment to supporting dual credit or dual enrollment access for students with the creation of the Financial Aid for Swift Transfer program, which ensures that educationally disadvantaged students can take dual credit or dual enrollment classes at no cost to them. Other steps that district administrators and state policymakers can take include identifying students who need advanced learning opportunities and removing barriers to students accessing these opportunities, creating more opportunities for both students and teachers.

The OnRamps program offers a unique way to increase advanced academics on campuses throughout the state. Because of the structured facilitated networks and professional learning provided to support instructors alongside intensive curricular support, OnRamps can be successfully implemented by both experienced and more novice teachers. Additionally, due to its distance learning model, OnRamps can be implemented at even the most remote campuses or in

dense urban centers where sufficient personnel may not be available or who might not otherwise meet the criteria to teach dual credit courses. OnRamps has demonstrated capacity to scale in supports to teachers and students, further meeting the call to address multiple needs for teacher retention and advanced academics in Texas.

In March 2022 Texas Governor Greg Abbott established the Teacher Vacancy Task Force. Nearly one year later, the Task Force released a report with recommendations on how to increase retention and lower vacancy rates among the teacher workforce in Texas. The results of this study show that policymakers and administrators should add supporting advanced academics and OnRamps in particular as a strategy to retain teachers throughout the state.

The University of Texas at Austin ERC is a research center and P-20/Workforce Repository site which provides access to longitudinal, student- level data for scientific inquiry and policymaking purposes. Since its inception in 2008, the Texas ERC's goal is to bridge the gap between theory and policy by providing a cooperative research environment for study by both scholars and policy makers. As part of its mission, the ERC works with researchers, practitioners, state and federal agencies, and other policymakers to help inform upon critical issues relating to education today.

The views expressed are those of the authors and should not be attributed to The University of Texas at Austin or any of the funders or supporting organizations mentioned herein including the State of Texas. Any errors are attributable to the authors.

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