



Determining Participation in Secondary Advanced Academics in Texas

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What We Studied

Participation in advanced academic programs, specifically dual credit, Advanced Placement (AP), and OnRamps, has grown significantly throughout Texas over the past decade. This growth mirrors national trends and is in response to demand from students and incentives in the state educational accountability system. While much is known about each of these programs individually, little research has been done into how they interact with each other to provide access and opportunities to students in different schools and districts.

Dual credit programs, which allow high school students to earn both high school and college credits concurrently, are a well-established part of the secondary school environment today. In Texas from Fall 2013 to Fall 2023, dual credit enrollment grew from 108,000 to 219,000 (Texas Higher Education Coordinating Board).

Advanced Placement is a program developed by the College Board through which high school students take classes that are designed to be similar to college classes. Students may choose to take an exam at the end of the year that can lead to college credit when they enroll in post-secondary school. Similar to dual credit, the number of Texas high school students taking AP classes has grown considerably over the past decade. From 2013-14 to 2023-24, the number of Texas students enrolled in AP classes has increased from 238,000 to 381,000 (Texas Education Agency).

The University of Texas at Austin’s OnRamps dual enrollment initiative offers high school students access to UT Austin courses, developed by UT Austin faculty and delivered by high school teachers on high school campuses and UT Austin faculty remotely. Students earn a separate grade for the OnRamps college course and can receive UT Austin credit. OnRamps enrollment has also grown dramatically over the past decade – from a few hundred students in 2013-14 to 105,000 enrollments in 2024-25.

Many studies¹ have shown improved student outcomes in both high school and post-secondary education for participants in advanced academic programs. However, previous studies have also shown that access to these programs is uneven. Much of the previous work has looked at access to advanced academics by studying each program individually. Few studies have investigated how these three programs create an ecosystem of opportunities for students, including taking into account local conditions. This study investigated three questions: (1) what are the characteristics of school districts and campuses that have implemented OnRamps, the newest of the three main advanced academics programs statewide; (2) what are the student characteristics associated with participating in the three main advanced academics programs; and (3) to what extent does the presence of OnRamps at a school impact which students participate in advanced academics.

How We Analyzed the Data

Using Texas Education Agency (TEA) data we examined both student and employee characteristics of districts and campuses in Texas for school years between 2017-18 and 2022-23. Disciplinary and alternative education campuses

¹ See Taylor, et al. (2022) for an extensive review of research on dual enrollment programs.

were excluded from all samples. District and campus level participation is defined as those offering and enrolling students in at least one course from any of the three programs (dual credit, AP, OnRamps). Data supplied by OnRamps allowed identification of OnRamps districts, campuses and students, while TEA data identified districts and campuses offering dual credit and AP and students enrolled in those courses. Although OnRamps has been a functioning program since 2012-2013, the years of this analysis were restricted to ensure sufficient representation. Student and employee characteristics were aggregated at the year-district-level (6,306 districts) and at the year-district-campus-level (9,888 campuses) to create samples for research question one. District and campus employees chosen for the sample were those with the following staff roles: Administrative, Teaching, Support, and Paraprofessional. Student-level data was employed for the second and third research questions with the overall sample limited to any student who attended high school between fall 2017 and spring 2023 (in districts and campuses as described above) at a school that offered one of the three programs. For this initial analysis of advanced academic programs the sample was further restricted to students who had attended only one campus during high school (3,374,309 students). Three main subsamples of this student data were created based on which campuses offered which programs: dual credit (3,305,970), AP (3,252,987), or Onramps (1,615,721). Additional subsamples included dual credit only, AP only, dual credit AND AP, dual credit OR AP, plus campuses offering all three programs.

All models used to explore the first research question regressed on whether a district or a campus offered OnRamps courses or not. The second and third research questions focus on student participation in the three programs.

Models for all research questions employed a wide range of characteristics from students, employees, and institutions. Student characteristics included gender, students of color, students identified as SPED or Vocational ED, students with a discipline flag, school attendance, LEP identified, and those identified as economically disadvantaged (EcoDis). Employee characteristics included gender, race, and those with a master's degree or higher. Other characteristics of districts and campuses that were used included Urbanicity (Urban, Suburban, Rural or Town), employee retention, number of students, number of employees, percent of classroom employees identified as "support staff", whether the campus met Algebra I EOC TEA passing standard, and state accountability ratings. Models to determine distinguishing factors between OnRamps districts and campuses versus non-OnRamps institutions used district and campus aggregated percentages of student and employee variables. Student-level models examining participation in advanced academic programs used a combination of student and campus/district-level aggregated variables.

To discover which characteristics, if any, distinguish OnRamps districts and campuses from others in Texas, we started with basic district and campus logistic models regressing on whether a district or campus offered OnRamps each year. An additional logistic model was created using a restricted sample of only OnRamps districts. This allows for identification of any differing factors between campuses in those OnRamps districts. To further flush out differences, we employed multilevel-mixed-effects logistic regression models, with district as the grouping variable. These models are able to measure between-district variation while estimating the effects of variables that vary between districts.

The assessment of which student characteristics are significant to predicting participation in the three advanced academic programs were approached similarly in that first basic logistic regressions were run on the three main subsamples, students in dual credit campuses, AP campuses, and OnRamps campuses. Based on significance from the initial round of basic models, several models including interactions were also explored. The final round of models for research question two were fit using multilevel logistic regression models setting campus as the random-effects grouping variable.

Exploring whether OnRamps serves students who typically would not participate in advanced academics involves running best models found while answering research question two on campuses that offered both dual credit and AP, but not OnRamps, then comparing the outputs with a model incorporating campuses that offer all three programs to determine the difference OnRamps has on predictors. This comparison was done using both basic and multilevel-mixed-effects logistic regression with district as the random-effects grouping variable. This allows for district comparisons while employing campus-level predictors.

What We Discovered

District and campus participation in OnRamps

The first logistic model, which regresses on district participation in OnRamps with predictor variables as described above, proved to be a good fit compared to the null model – with the Pseudo R increasing to 23 percent from 0 and the log likelihood increasing to -2054.84 from -2670.98. Thus, 23 percent of the variation in the log likelihood is explained by this model compared to the null model. These indicators tell us the predictors contribute to participation at the district level. Several predictors were stable and significant: district attendance rate, percent of students in vocational education, and the percentage of campuses in the district meeting Algebra 1 EOC TEA passing standard. All of these except percent of students in vocational education increased the odds of a district's participation in OnRamps. Even so, while the model fit the data, many other predictors were unstable and very few of the characteristics in the data dramatically contributed to predicting OnRamps participation.

A second logistic model, predicting which *campuses* offer OnRamps courses, followed a similar pattern to that of district prediction: while indicators pointed to good model fit (Pseudo R = 21%, log likelihood = -3901 increased vs null model = -4951) several predictors were unstable. Of those that were stable and significant, four increased the likelihood of a campus participating in OnRamps: the number of students at a campus, the campus employee retention rate, campuses that were not given a state accountability rating, and the percent of students in vocational education. Predictors which were stable and significant but decreased the likelihood of OnRamps participation were: suburban or rural campuses (decreased as compared to the reference group of urban campuses), campuses with a higher percentage of students meeting Alg1 EOC TEA passing standard, campuses with a higher percentage of EcoDis students, and lastly, a very slight decrease in those campuses with higher attendance.

The last set of models for predicting OnRamps participation were multilevel-mixed-effects logistic regression setting district as the grouping variable and predicting campus participation. This multi-level model containing predictors produced essentially the same Intraclass Correlation Coefficient (ICC) as the baseline model, meaning campus-level variables are not shifting the picture and thus districts are the dominant driver of participation. In summary, there is no clear picture of what type of districts or campuses opt into OnRamps. This finding is not surprising given the nature of the OnRamps program, which incorporates distance learning pedagogies and is designed to be successfully implemented at any high school. The finding that district random effects drives participation is discussed further below in the Policy Recommendations section.

Student participation in advanced academics across all districts and campuses

As discussed above, the second research question was investigated through models that looked at participation in each advanced academics program using three subsamples. The results of these models assessed the likelihood of a student participating in each of the different advanced academics programs separately and considered all students in Texas. The results of these models (odds ratios showing in parentheses) were in line with much of the previous research on dual credit and AP participation.

Findings include the following:

- Female students (compared to male students) are more likely to participate in dual credit (1.48), AP (1.37), and OnRamps (1.27).
- Students of color (compared to white students) are less likely to participate in dual credit (0.84), AP (0.72), and OnRamps (0.85).
- EcoDis students (compared to non-EcoDis students) are less likely to participate in dual credit (0.52), AP (0.54), and OnRamps (0.64).
- The odds that a student will participate in an advanced academics program increases if their Algebra I EOC test places them in a higher quartile compared to other students at their school. The odds ratios for the 2nd and top quartiles are
 - dual credit: 2.00 compared to 5.36
 - AP: 2.12 compared to 8.65
 - OnRamps: 2.10 compared to 5.88.

These models also looked at the relationship between the percentage of the employees at a campus who have a Master's degree or higher and the likelihood that students will participate in the advanced academics program. Students are much more likely to take dual credit or AP classes (7.13 and 7.11 respectively) as this percentage increases. For OnRamps, this percentage has a positive but much less pronounced effect (1.84) on the odds that students will take an OnRamps course. This finding makes sense given that OnRamps instructors receive significant professional development that allows them to implement a course without having to earn external credentials.

We also examined the interaction between the EcoDis status of individual students and the percentage of EcoDis students at a campus. EcoDis students are more likely to participate in advanced academics as the percentage of EcoDis students at the campus increases. This effect is less pronounced for OnRamps (1.19) than for dual credit (1.35) and AP (1.46). That is, the effect of campus percentage of EcoDis students is less important in determining whether an EcoDis student will be in OnRamps than in dual credit or AP.

Student participation in advanced academics within the same district

We also created mixed effects models for each of the advanced academics programs. A school's implementation of any of these advanced academics programs is likely to be impacted by the district context. Mixed-effects models allow for the random effects of different districts to be included in the models. The results provide insight into how the likelihood of participation in advanced academics varies for students within the same district.

The results from the mixed-effects models were very similar to the results of the basic logistic models.² In the interest of space, we do not present all odds ratios here but note that nearly all variables had roughly similar odds ratios in the mixed-effects models and the basic logistic model. The exception to this pattern is the percentage of EcoDis students at a campus. Within the same district, students are less likely to participate in dual credit (0.45) or AP (0.31) as the percentage of EcoDis students at a campus increases. However, within the same district, students are much more likely to participate in OnRamps (4.99) as the percentage of EcoDis students at a campus increases.

Dual credit and AP versus all three programs

The most common combination of advanced academic programs among high schools in Texas is dual credit and AP/IB³ classes with 32 percent of all high schools offering that combination in 2022 according to TEA TAPR data. The next most common combination is for a high school to offer all three programs investigated in this study (23 percent of all high schools). Given this pattern and the incredible growth of OnRamps (from a few hundred enrollments to over 100,000 in just a decade), we investigated the differences between schools that implement dual credit and AP and those that implement all three advanced academics programs.

An examination of campuses that implement all three programs and those that implement only dual credit and AP shows that that campuses that implement all three programs in general have higher percentages of EcoDis students and students of color.

² The major difference between the basic logistic models and the mixed-effects models was in the odds ratios for the variable indicating the percentage of employees at a campus with Master's degrees or higher. In the basic logistic models, the odds ratios were greater than zero for all three academic programs. In the mixed-effects models, the odds ratios were all below zero, indicating that the odds of a student participating in one of the programs goes down as the percentage of Master's or higher *increases* (compared to other students within the same district). We believe this effect is likely driven by specialized campuses within districts. As noted above, we removed all campuses that were designated as disciplinary or alternative education campuses. However, we believe that some specialized campuses and/or campuses that serve specialized populations may have been retained even after filtering on the alternative education field/code. Specialized campuses may be more likely to have high percentages of employees with Master's degrees or higher and may also be less likely to offer advanced academics programs.

³ TEA reports Advanced Placement and International Baccalaureate outcomes together. Our study included only AP classes.

Table 1: Percentage of EcoDis Students at Campus

	Campuses that offer AP and dual credit	Campuses that offer AP, dual credit and OnRamps
1%	0.04	0.08
25%	0.39	0.42
50%	0.55	0.62
75%	0.72	0.80
99%	0.98	0.97

Table 2: Percentage of Students of Color at Campus

	Campuses that offer AP and dual credit	Campuses that offer AP, dual credit and OnRamps
1%	0.09	0.20
25%	0.34	0.50
50%	0.58	0.79
75%	0.86	0.98
99%	1.00	1.00

We also compared these two groups of campuses using mixed-effects models looking at the likelihood that students will take at least one advanced academics class. The results are presented below. Slight differences can be seen across the independent variables. One of the largest differences is the effect of the percentage of EcoDis students at a campus. Among campuses that offer only dual credit and AP classes, the odds that a student will participate in any advanced academics decreases dramatically for campuses with higher percentages of EcoDis students. However, at campuses that implement all three programs, while the odds ratio remains less than one, the percentage of EcoDis students has a dramatically lower impact.⁴

Table 3: Mixed-Effects Models

	Dual and AP Classes Offered at Campus	All Three Programs Offered at Campus
Female Student	1.56	1.57
Student of Color	0.68	0.73
EcoDis Student	0.57	0.57
Algebra I EOC Quartile (Campus)		
Missing	4.30	3.59
Q2	2.67	2.34
Q3	5.70	4.66
Q4	14.44	11.59
Campus Type		
Missing	1.34	
Rural or Town	0.84	1.04
Suburb	0.89	0.83
EcoDis Percentage of Campus	0.18	0.56
Percentage of Employees on Campus with Master's Degree or Higher	0.56	0.52

⁴ As shown in Table 3, the odds ratio changes from 0.18 to 0.56. Because odds ratios are not linear, this change suggests that the impact of the percentage of EcoDis students on whether a student will participate in advanced academics is approximately one-third as strong at campuses that implement all three programs.

Percentage of Classroom Employees on Campus Who Are Support Staff	0.97	0.77
Campus Retention Rate	0.69	0.71
Campus Rating		
Improvement Required/Unacceptable	0.96	0.92
Not Rated	1.33	1.28
_cons	0.72	0.46

Policy Recommendations

This study investigated the three main advanced academics programs offered by districts and schools throughout Texas. The results show that OnRamps, the fastest growing advanced academics program that is offered statewide, has been implemented in a variety of districts and campuses and is not clearly associated with any particular set of district or campus characteristics. The study also revealed that students at campuses with higher percentages of EcoDis students are more likely to participate in advanced academics when they attend a campus where OnRamps is offered.

More generally, the results are in line with previous research which shows that access to advanced academics can be uneven. Previous studies have shown that EcoDis students, students of color, and male students are less likely to participate in dual credit and AP. The results of this study show the importance of also conducting deeper analyses to understand patterns of advanced academics offerings and enrollment within districts and campuses. Studying the participation in advanced academics of all Texas students – grouped together at the student level without district or campus variables – does not measure the influence of effects from districts and campuses. However, policies and decisions made at district and campus levels can influence who has access to advanced academics – both in the "short-term" (e.g., advising students on which course to take the following year) and in the "long-term" (e.g., by putting some students on a track that leads to advanced academics from early grades). As policies are crafted to improve access to advanced academics and make access more even, district and campus effects should be studied further.

A first step would be to increase the availability of detailed data about who participates in advanced academics at the campus level. At this time the best source of readily available data is state accountability reporting, which gives the number and percentage of students in each of the three program studied here. Because of the way the data are reported, students can be double or triple counted. For example, take a school that has 10 students in AP and 10 in dual credit in accountability report. It is not possible to know whether those are the same 10 students, twenty different students or some other distribution. Advanced academics has now become a significant part of secondary education in Texas and increased availability of data would allow a fuller picture of access and participation by students.

Works Cited

Taylor, J.L., Allen, T.O., An, B.P., Denecker, C., Edmunds, J.A., Fink, J., Giani, M.S., Hodara, M., Hu, X., Tobolowsky, B.F., & Chen, W. (2022). *Research priorities for advancing equitable dual enrollment policy and practice*. Salt Lake City, UT: University of Utah

Texas Education Agency. (2025). *Advanced Placement Examination Results in Texas and the United States, 2023-24*. <https://tea.texas.gov/reports-and-data/school-performance/accountability-research/ap-tx-and-us-2023-24.pdf>

Texas Higher Education Coordinating Board. *dual credit and Total Enrollments, Fall Semesters*. <http://www.txhighereddata.org/index.cfm?objectId=AEE9A640-D971-11E8-BB650050560100A9>

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