

THE RISE OF UNCERTIFIED TEACHERS IN TEXAS

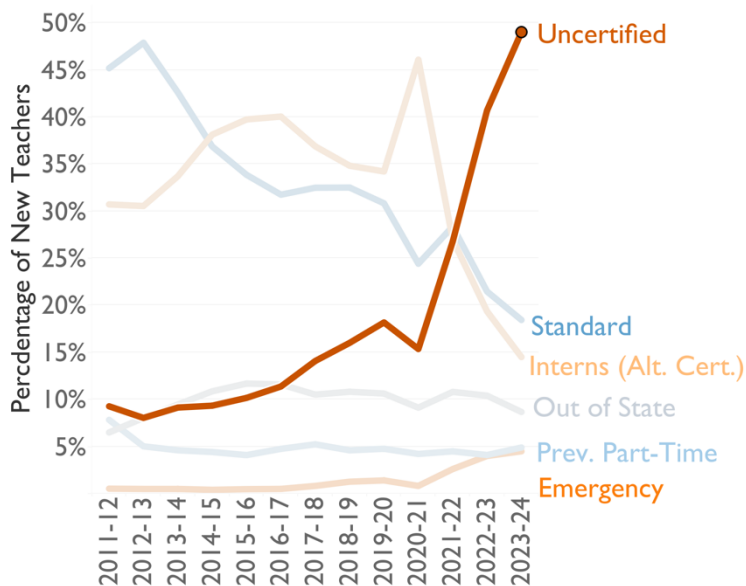
Bad for Kids, Bad for Business

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Introduction

For the last decade, teacher preparation in Texas has differed from the rest of the country. More Texas teachers came from alternative certification programs than from traditional university programs, and most of these came from online for-profit providers.

Over the last three years, teacher preparation in Texas entered a new phase. In 2023–2024, half the new teachers in Texas were not certified at all. They had not completed a teacher certification program, they were not enrolled in a teacher certification program, and they were not required to obtain a teaching certificate. They do not have to: 981 of Texas’s 1,024 traditional school districts are Districts of Innovation, which with a brief request can exempt themselves from state requirements, including the requirement that teachers be certified.



Half of Texas's New Teachers Are Uncertified

Research Findings

The research presented here can help inform policy decisions on how to deal with this dramatic change in how Texas teachers are prepared. Here are answers to common questions based on the findings:

How many new teachers are uncertified? Half of new Texas teachers were uncertified in 2023–2024. Alternative certification programs supplied only 15% of new teachers, and all traditional university programs across the state put together provided only 18%.

In what districts, grade levels, and subject areas are uncertified teachers teaching? Uncertified teachers are most likely to be found in charter schools, but they are also being hired in large numbers in rural, suburban, and urban schools. In high school many uncertified teachers are hired for Career and Technical Education, but comparable numbers are also teaching Liberal Arts and STEM courses. In 2023–2024 there were more uncertified teachers in elementary schools than in high schools. The numbers in middle school are smaller but growing.

What are reasons to be concerned about uncertified teachers?

- 1) Uncertified teachers leave teaching at very high rates. Around 30% are gone after the first year, while only around 5% of traditional university-certified teachers leave this quickly.
- 2) Students of uncertified teachers in non-charter school districts learn less than students of certified teachers. This holds across all subjects and all grade levels and the effect is strongest in high school. The learning differential ranges from around 1 to around 6 months less learning per year for students of uncertified vs traditional university-certified teachers.

How long will it take before schools have more uncertified than certified teachers? Although most new teachers are now uncertified, the non-charter public schools are still mainly staffed with certified teachers. It will take around 10 years at the current rate of hiring uncertified teachers for non-charter public schools to have mainly uncertified teachers.

What factors led to the great increase in hiring of uncertified teachers? Traditional university production of teachers in Texas has been declining for a decade. Retirements and resignations of teachers spiked after the pandemic. This created shortages. Almost all Texas districts declared themselves Districts of Innovation, which are allowed to eliminate the requirement that teachers be certified. As the practice of hiring uncertified teachers spread in response to shortages, prospective teachers lost the incentive to pursue either traditional or alternative certification and thus the hiring of uncertified teachers fed on itself.

How does this affect the Texas workforce? At a time when Texas and the United States are investing billions of dollars into semiconductor and microelectronics manufacturing in Texas, the number of students who take key STEM courses in high school from well-prepared teachers is going down. The percentage of students who graduated high school without taking Physics tripled between 2017 and 2022 from 13% to 40%. Only a quarter of the workers earning \$100K+ in Texas semiconductor manufacturing were born in Texas, fewer than those born outside the United States. Texas students must have better education for the best parts of the Texas workforce to be available to them.

Prospect and Proposals

As recently as 2014, Texas teacher supply looked very different from today. Most new teachers came from traditional university programs. A substantial minority came from a variety of alternative certification programs, most online, but some in-person. The remainder came from out of state. Uncertified teachers were rare, and districts hired them only in true emergencies.

A future with few certified teachers is not inevitable, but avoiding it will require action. Fortunately, Texas retains capacity within both traditional and alternative programs to prepare teachers well. Some of the greatest shortages are in secondary science and mathematics. The UTeach program, now in its 25th year, produces teachers of high quality, is currently preparing around half the university-prepared STEM teachers in Texas at 12 Texas universities, and has faculty and staff capacity to prepare many more.

The goal of policy should be to return to a balanced source of teachers, dominated by traditional university programs, with alternative certification as backup and uncertified teachers rare exceptions. To accomplish this goal here are solutions to consider.

Policymakers:

- Increase scholarship and loan forgiveness support for students pursuing STEM teaching.
- Target Teacher Incentive Allotment to certified teachers.
- Reverse recent changes to TAC 19.228 that create new barriers to teacher certification.
- Increase teacher salary and benefits.

State Agencies:

- Incentivize all high-quality educator pathways with evidence of effectiveness: both traditional student teaching and residencies.
- Work with universities as partners to prepare and support teachers. Reduce regulations and restrictions imposed on traditional certification pathways.

Universities:

- Waive tuition and fees for traditional teacher candidates in their student teaching semester.
- Create new pathways into teaching, exploring all available mechanisms permitted by the state.

Detailed Research Findings

Growth of Uncertified Teachers

Figure 1 shows the three recent phases in the supply of new teachers for Texas. The first phase began in 2003, when for-profit alternative certification was allowed but traditional teacher certification dominated, and ended in 2014–2015 when alternative certification overtook traditional certification as the main source of the state’s teachers. The third phase began in 2021–2022 when uncertified teachers surpassed both traditional and alternative sources of teachers.

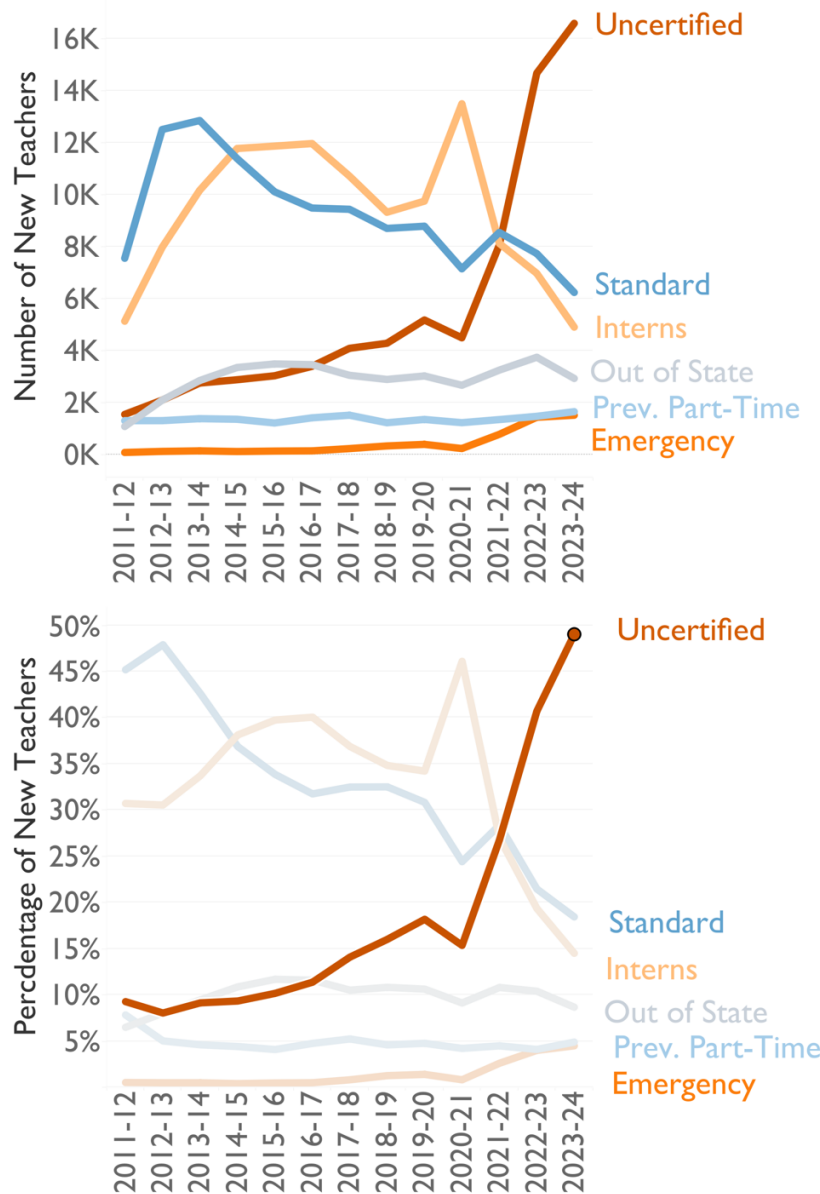


Figure 1: The growth of uncertified teachers. Top, absolute numbers. Bottom, percentages.

The data in Figure 1 come directly from the Texas Education Agency (TEA). The category “Uncertified” captures new teachers with no certification record at all. The “Standard” category is for teachers who enter teaching with a Standard certificate. They overwhelmingly come from traditional university programs with student teaching. The “Intern” category describes teachers coming from alternative certification programs. Most of them come from for-profit web-based programs, but some come from educational service centers, some from school district programs, and some from

university-based alternative programs. Teachers from “Out of State” can be presumed to have traditional certification because Texas is almost the only state with such a large alternative certification sector. “Previously Part Time” is a category the Texas Education Agency uses to describe a small number of teachers regarded as new because they moved from part-time to full-time positions. Finally there is a small number of teachers hired on emergency certificates when no certified teacher could be found for a critical position; they are supposed to be enrolled in a teacher certification program and finishing requirements for their certificate within a year¹. The TEA has an additional category of returning teachers that is omitted here on the grounds that someone who teaches for three years, takes a year off to have a child, and then returns would not normally be viewed as a new teacher.

The number of uncertified teachers grew after 2010 mainly because of charter schools whose teachers were not required to have certificates. In 2015 regular districts acquired the ability to dispense with state rules by declaring themselves Districts of Innovation². This meant that people could be hired as teachers without even the paperwork needed for an emergency certificate. At first this led to modest increases in the numbers of uncertified teachers. Then, in the wake of the pandemic, there was a surge of experienced teachers resigning or retiring. There was no corresponding surge in production from traditional university programs. Some districts were able to fill the vacancies from traditional sources but others were not and hired people with no training or preparation in huge numbers. Shortages are so severe that candidates have the upper hand and if districts ask them to become certified within some period of time they can realistically threaten to move to another district that does not.

Data source: <https://tea.texas.gov/reports-and-data/educator-data/employed-teacher-attrition-and-new-hires-2023-2024.pdf>. Graphics by M. Marder.

Few Uncertified Teachers Ever Get Certified

Figure 2 shows that in recent years, since 2017, only around 20% of teachers who began teaching without certification ever obtain it. Twenty years ago, twice the percentage did so, but back then the laws prohibiting teaching without a certificate were more strict. The data stop in 2020 since it takes around three years before most uncertified teachers obtain certification, and those who entered teaching since then have not had time.

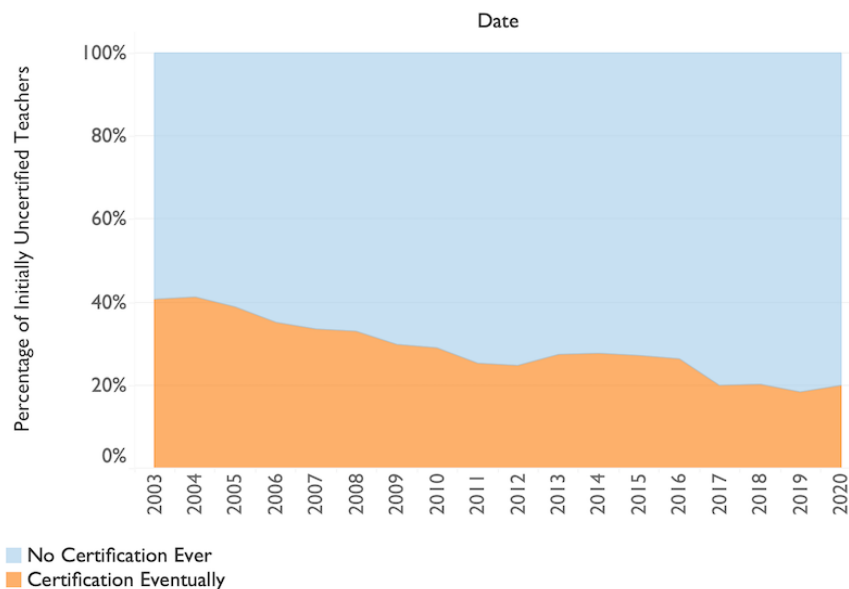


Figure 2: Percentage of uncertified teachers ever obtaining certification. Data source: UT Austin Education Research Center. Analysis by M. Marder under project UTA 123-Outcomes.

School Type and Subject Area of Uncertified Teachers

Figure 3 shows the subjects taught by uncertified teachers in different types of schools. The data are through 2022-2023, when the great recent surge of uncertified teachers began. For an interactive exploration of the subjects and school types of uncertified teachers, see <https://public.tableau.com/app/profile/michael.marder/viz/UncertifiedTexasTeachers-June-2024/UncertifiedTeachersbyDistrictTypeandSubject>

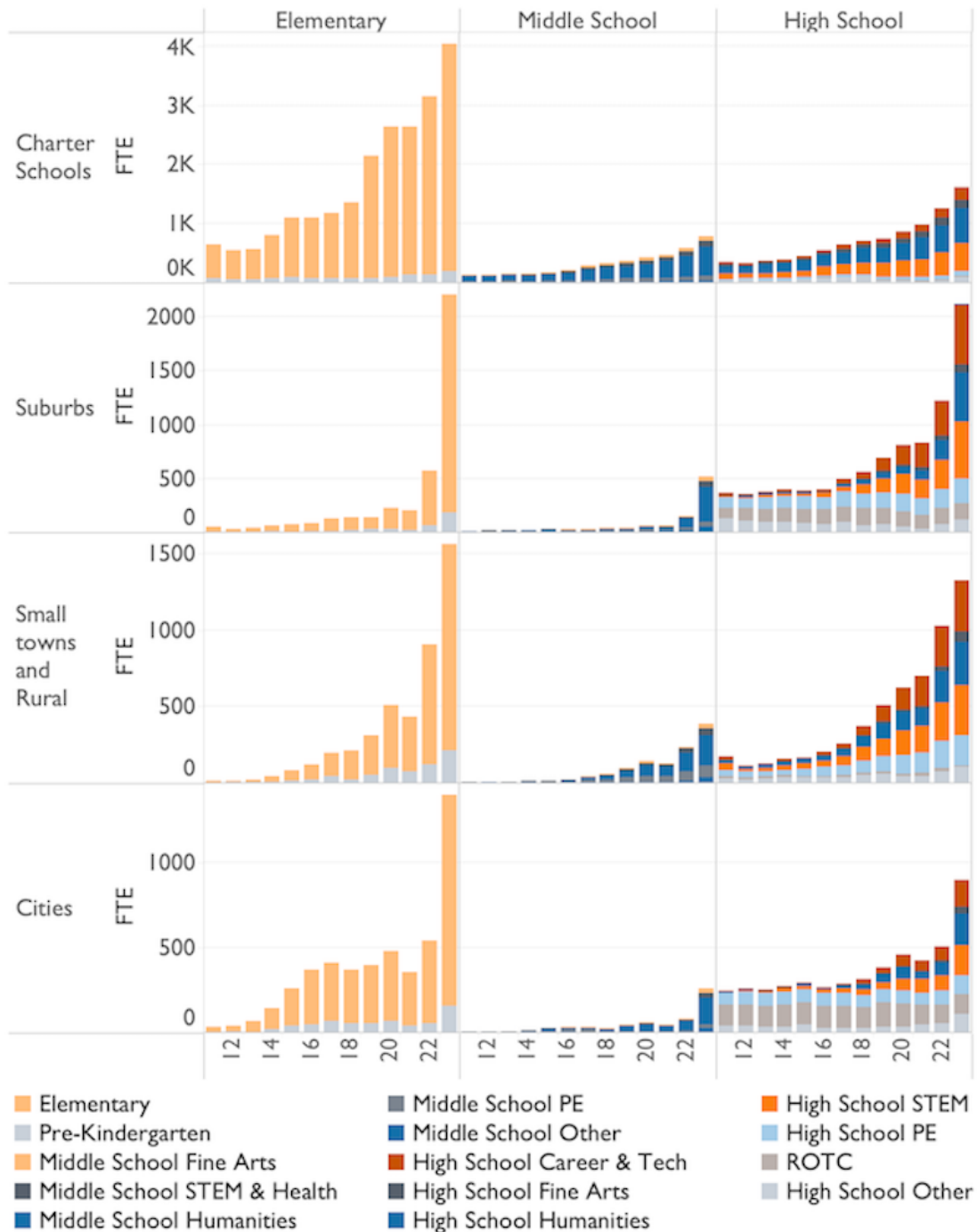


Figure 3: Locations and subjects of uncertified teachers through 2022–2023. FTE means “Full Time Equivalent”.

The figure records Full-Time Equivalents (FTE). This means that for every class it takes into account what fraction of the school day is spent on the class, and if the teacher of that class is uncertified, adds that fraction to the appropriate total. For example, if an uncertified teacher is teaching high school math half the day in a suburban school, this will add 0.5 to the total of uncertified teachers for High School STEM & Health in the Suburbs.

Districts are divided into four types: Charters, Cities, Small Towns and Rural, and Suburbs. Some of the highlights:

- Charter schools have long hired uncertified teachers and are continuing their reliance on them. Until 2022-2023 they hired more uncertified teachers than the traditional districts, but this is no longer the case.
- More uncertified teachers are now being employed in rural & small town and in suburban districts than in cities.
- Uncertified teachers in elementary grades are more numerous than uncertified teachers in high school. Middle schools are hiring relatively few uncertified teachers.
- The growth in uncertified teachers in suburban elementary schools is particularly rapid.
- In high schools, the uncertified teachers for STEM & Health, Career & Tech, or Humanities are more or less equally common. Almost no Fine Arts teachers are uncertified. This may be because Fine Arts is the only certification area where the number of university-prepared teachers has not strongly declined over the last decade.

Data source: UT Austin Education Research Center. Analysis by M. Marder under project UTA 123-Outcomes.

Projection for Numbers of Teachers by Pathway Unless Production from Universities and Alternative Certification Recovers

It is possible to estimate what the Texas teaching workforce will look like over the next decade and a half if the current reliance on uncertified teachers persists and they continue to leave at high rates.

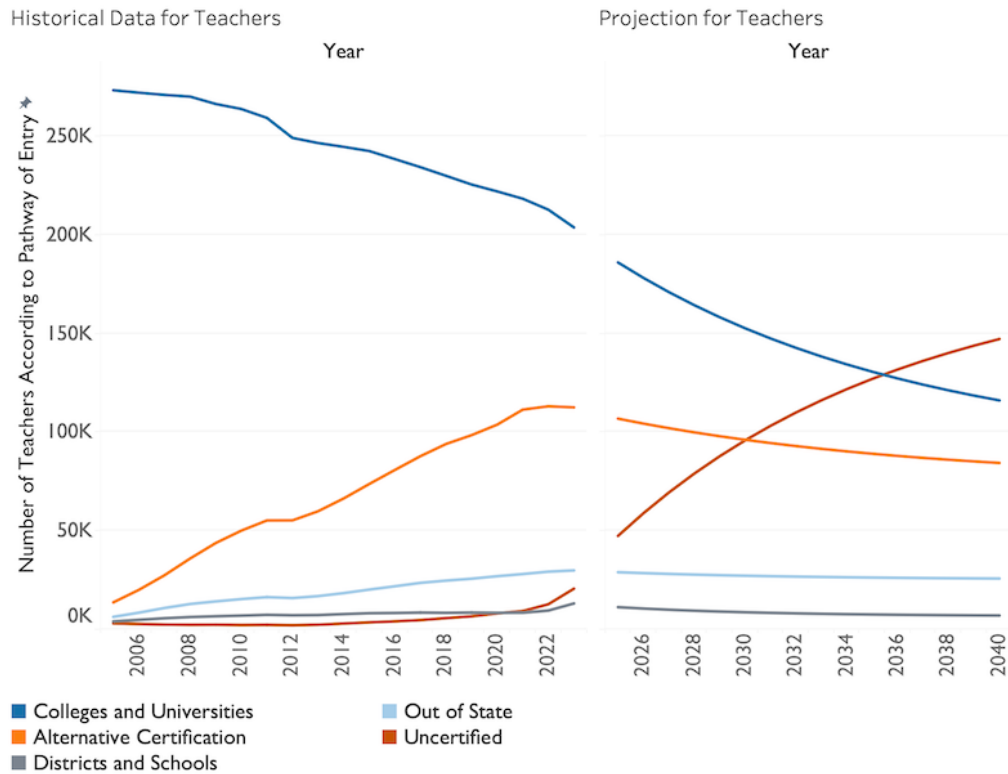


Figure 4: Composition of Texas teaching workforce and projections.

Figure 4 contains a possible scenario. It uses the current number of teachers who have come from each pathway as the starting point, assumes

- The current number of new teachers being produced by each certification pathway remains constant at the level shown in Figure 1 for 2023–2024.
- Using data displayed in Figure 5, 8% of traditional and alternative teachers leave per year (new traditionally certified teachers leave at a lower rate than this, but there are large numbers of traditionally certified teachers near retirement leaving at higher rates), 12% of Out of State teachers leave per year, 16% of School and District certified teachers leave per year, and 18% of uncertified teachers leave per year.
- The total number of Texas teachers remains at 370,000.

From these assumptions I generate projections 15 years into the future. By 2040, there will be more teachers who enter uncertified than from any other pathway, and the state will be hiring around 28,000 of them per year to keep up with the fact that so many of them leave the profession quickly. In this projection it takes about a decade for uncertified teachers to become the majority of working teachers in the state. This point deserves emphasis. Even if most new teachers enter without certification from now on, it will take around a decade to transform the state’s teaching workforce, because most teachers were prepared in an earlier era when certification was mandatory.

Parents and policy-makers may not become fully aware of the problem of uncertified teachers until it is ten years too late to stop. The time to fix a leaking dike is when the first water comes through, not when the dike has collapsed and the lowlands have flooded.

This scenario is very unfavorable. Yet things can easily be worse, for as young people hear that certificates are not really needed for teaching, and forgo preparation when it is available and affordable, traditional and alternative teacher preparation pathways will atrophy further and production will continue to decline below today's already low levels. Indeed, inspection of Figure 1 makes further decline of Standard and Intern certificates seem more likely than the constant production at the level of 2023-2024 assumed in this scenario.

Data source: UT Austin Education Research Center. Analysis by M. Marder under project UTA 123-Outcomes.

Retention of Teachers from Different Pathways

Figure 5 shows the percentage of teachers from various pathways who remain in teaching up to five years. The graphs make use of the following method to determine teacher retention. For each academic year after 2013-2014, find every new person working as teacher of record in the fall. Check for each subsequent year until 2021-2022 whether they are still teaching in the fall. If they are still teaching in the fall of 2021, label them as Still Teaching. Otherwise label them as Left Teaching. If they have left teaching, find the total number of years they taught; this may include missing years (for example to have a child). Group the teachers according to the type of institution that issued their first intern or standard certificate, or label them as Unprepared if they never obtain one. Find the percentage for each preparation pathway who completed 1, 2, 3, 4, and 5 years of teaching.

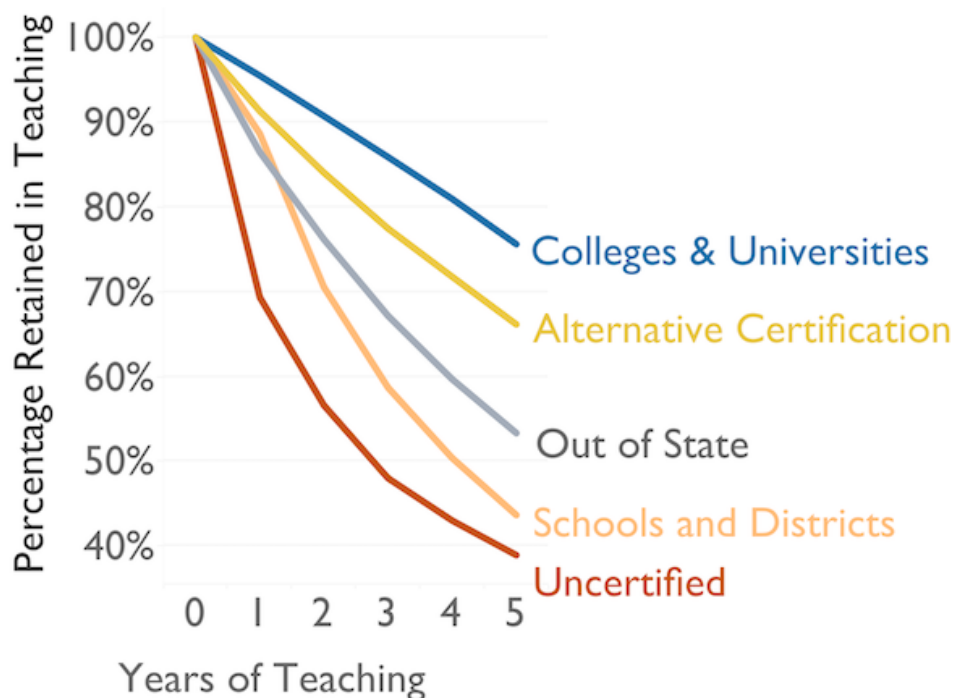


Figure 5: Percentage teachers from different pathways retained in teaching.

This method differs from the one used by the Texas Education Agency to calculate retention. In the State's method, which is motivated by legislative requirements, if a teacher leaves after two years to have a family, they are recorded as a two-year teacher. If they return to teaching a year later, the state puts them in a separate category as a Returning Teacher. The method used here continues to

give them credit for the total years they taught, and attributes their ultimate retention in teaching to their preparation pathway. Someone who teaches for two years, leaves for one year to have a child, and then returns and teaches 8 more years is a two-year teacher by the Texas Education Agency method, and a 10-year teacher by the method used here. This means that the retention rate for all pathways here is a few percentage points higher than recorded by the Texas Education Agency.

Data source: UT Austin Education Research Center. Analysis by M. Marder under project UTA 123-Outcomes.

Teacher Effectiveness: Compare Traditional and Alternative Teachers

It became possible to compare the learning of students who had traditional and alternatively certified teachers starting in 2012. Students overall and in every subgroup, in every subject, and in every grade level, learn more if their teachers came from traditional university programs, or if they came from not-for-profit as opposed to for-profit programs, with confirmation from several researchers for STEM^{3,4,5,6}. These results are summarized in Figure 6, using data from 2012 through 2019. Because of the pandemic, data after 2019 were not reliable for several years and are not included here. The colors in the figure refer to p values of $p < .001$ (Most Confident) $p < .01$ (Very Confident) $p < .05$ (Confident) and $p < .1$ (Not Confident).

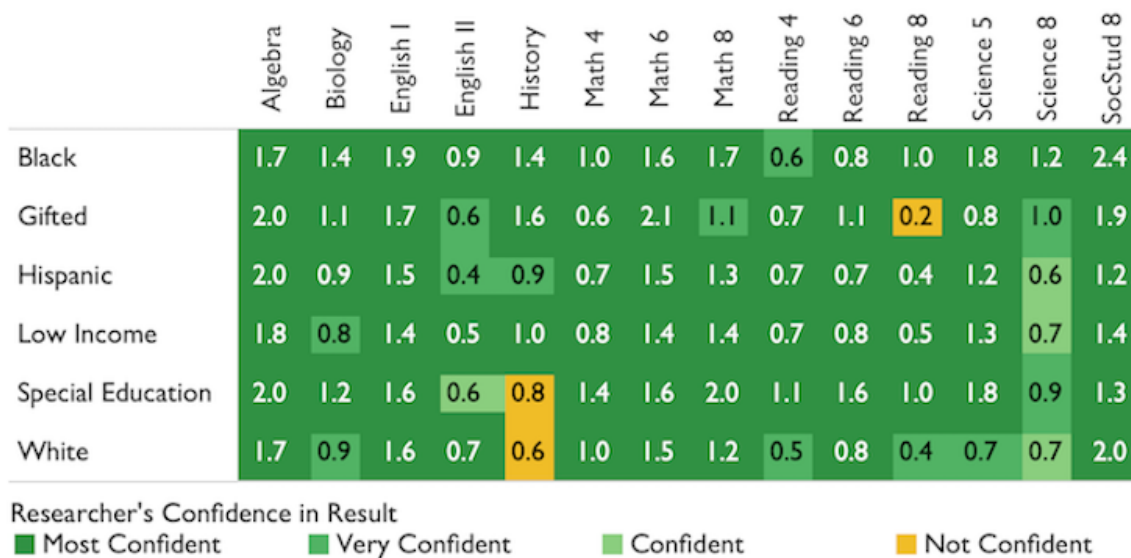


Figure 6: How many more Months of Learning a student gains in a year when their teacher is Traditionally rather than Alternatively certified.

Data Source: UT Austin Education Research Center. Analysis by A. Rhodes and M. Marder⁶

Teacher Effectiveness: Compare Traditional and Uncertified Teachers

Uncertified teachers in non-charter Districts have been comparatively rare until the last few years, but there have long been some and this makes it possible to estimate their effect on students. Figure 7 shows results for student learning in classes of uncertified teachers using data from 2012 through 2019. A recent analysis by Kirksey finds a substantial negative effect on students due to the recent surge in uncertified teachers in non-Charter schools⁷.

Extra Months of Learning in a Year: University Certified Teachers versus Uncertified

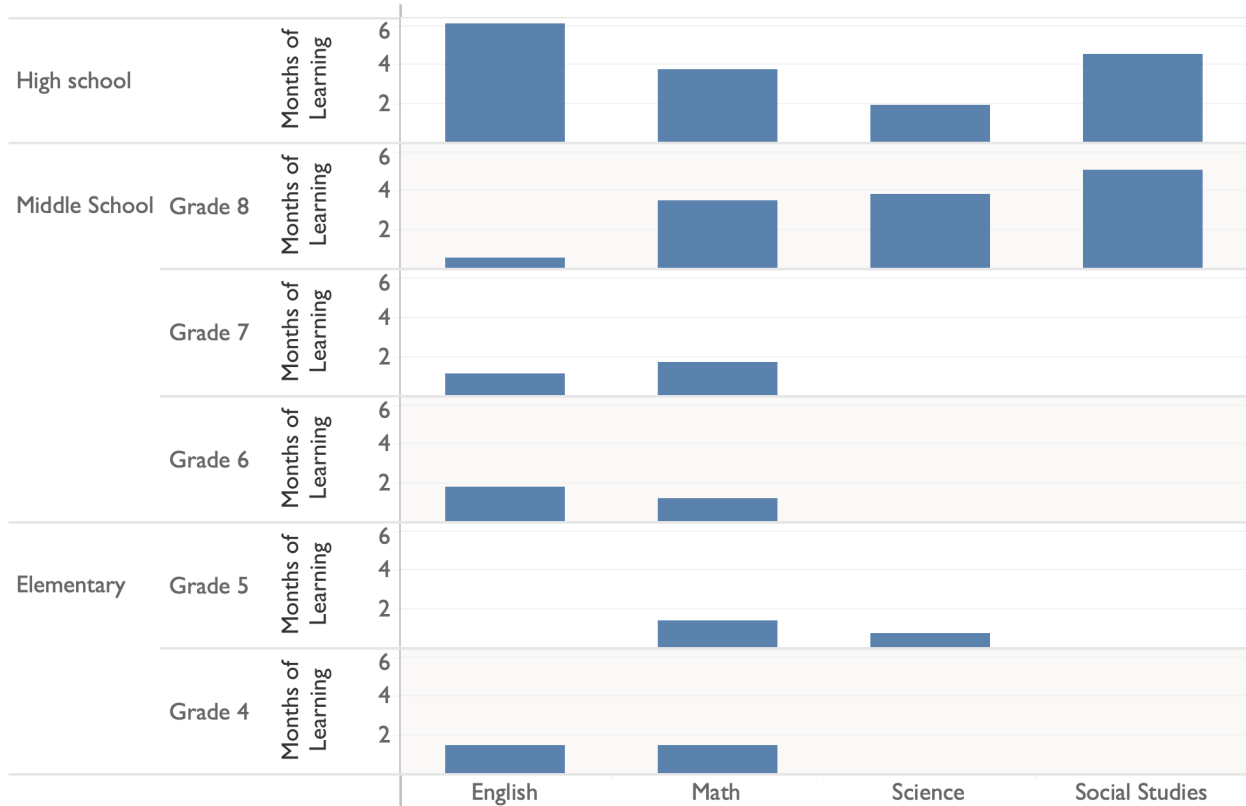


Figure 7: Student learning in classes of uncertified teachers. Data from UT Austin Education Research Center, using methods referenced in previous Figure.

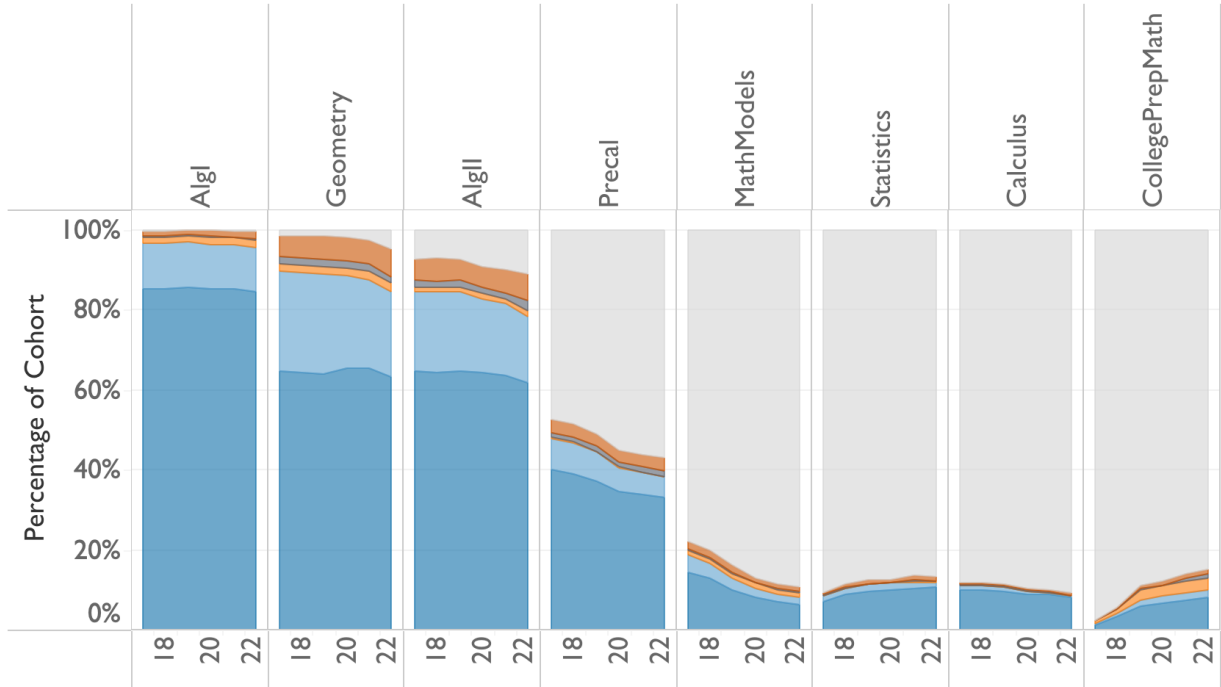
Data Source: UT Austin Education Research Center. Analysis by M. Marder.

STEM Course Availability: Whole State of Texas

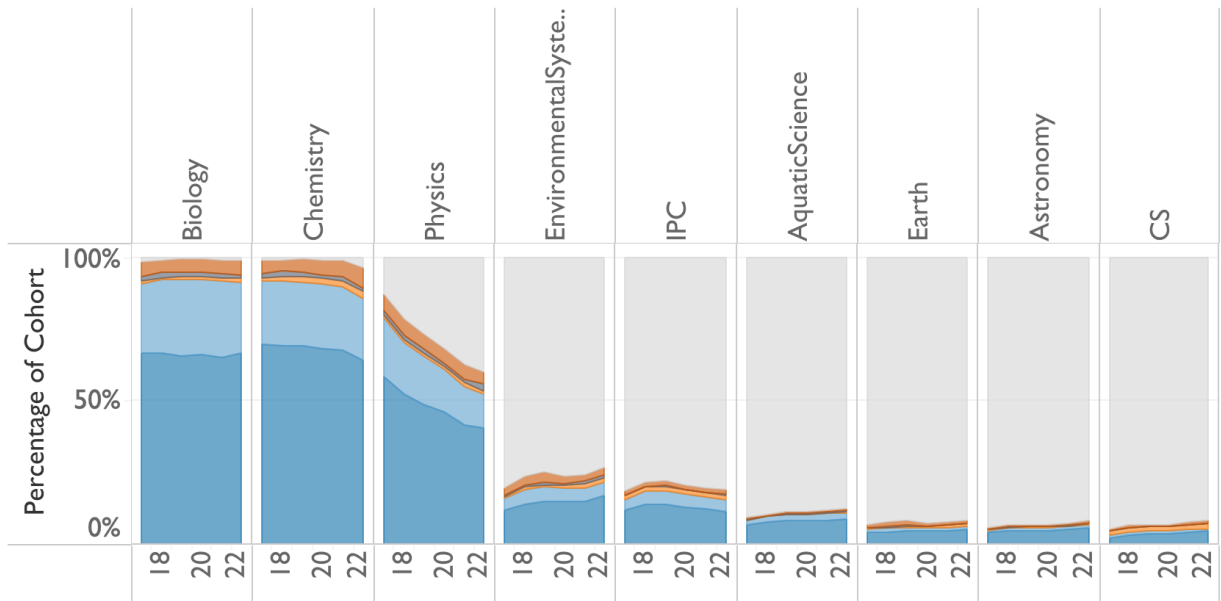
Figure 8 shows the availability of high school STEM courses over time and the qualifications of the teachers assigned to the classes. Some of the striking features are the rapid drop in students taking pre-calculus and physics, the very low levels of Calculus and CS, and the rapid rise of College Prep Math, which was mandated by HB5 of 2013.

For an interactive exploration of STEM course availability over time by Texas Education Service Center Region, see <https://public.tableau.com/app/profile/michael.marder/viz/STEMQuality2024/MathandScienceCourseExperiencesforTexasHighSchoolGraduates>

Texas students and STEM course quality



Texas students and STEM course quality



Student Experience
 Class not taken
 Teacher not certified at time of class
 Class size >35
 Teacher out of field
 Teacher experience <4
 Experienced teacher certified and in field

Figure 8: STEM course availability and quality over time in Texas.

Data source: UT Austin Education Research Center. Analysis by M. Marder under project UTA 123-Outcomes.

Texas Semiconductor Workforce

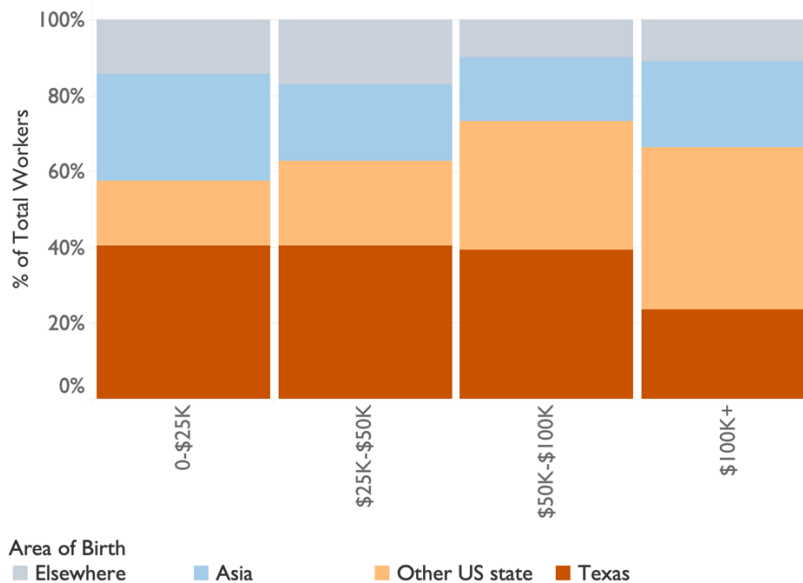


Figure 9: Percent of workers by income and world area of birth in Texas semiconductor manufacturing workforce.

Data source: American Community Survey 2017-2021. Analysis by M. Marder.

Figure 9 shows the composition of the Texas semiconductor manufacturing workforce. This sector is of interest because of investment from the Chips and Science Act⁸ and the Texas Chips Act⁹. The new investments should create many thousands of new jobs. However for the jobs that pay more than \$100K/year, less than one quarter of the positions are currently held by people born in Texas, and for jobs paying between \$50K and \$100K/year less than half are held by people born in Texas.

In order for children born and educated in Texas to be competitive for the jobs created in this and other sectors of the future, they will need world-class education. That means reversing the decline in STEM course-taking, and reversing the rise of uncertified teachers in Texas schools.

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Endnotes

1. <https://tea.texas.gov/texas-educators/certification/emergency-permit-guide.pdf>
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