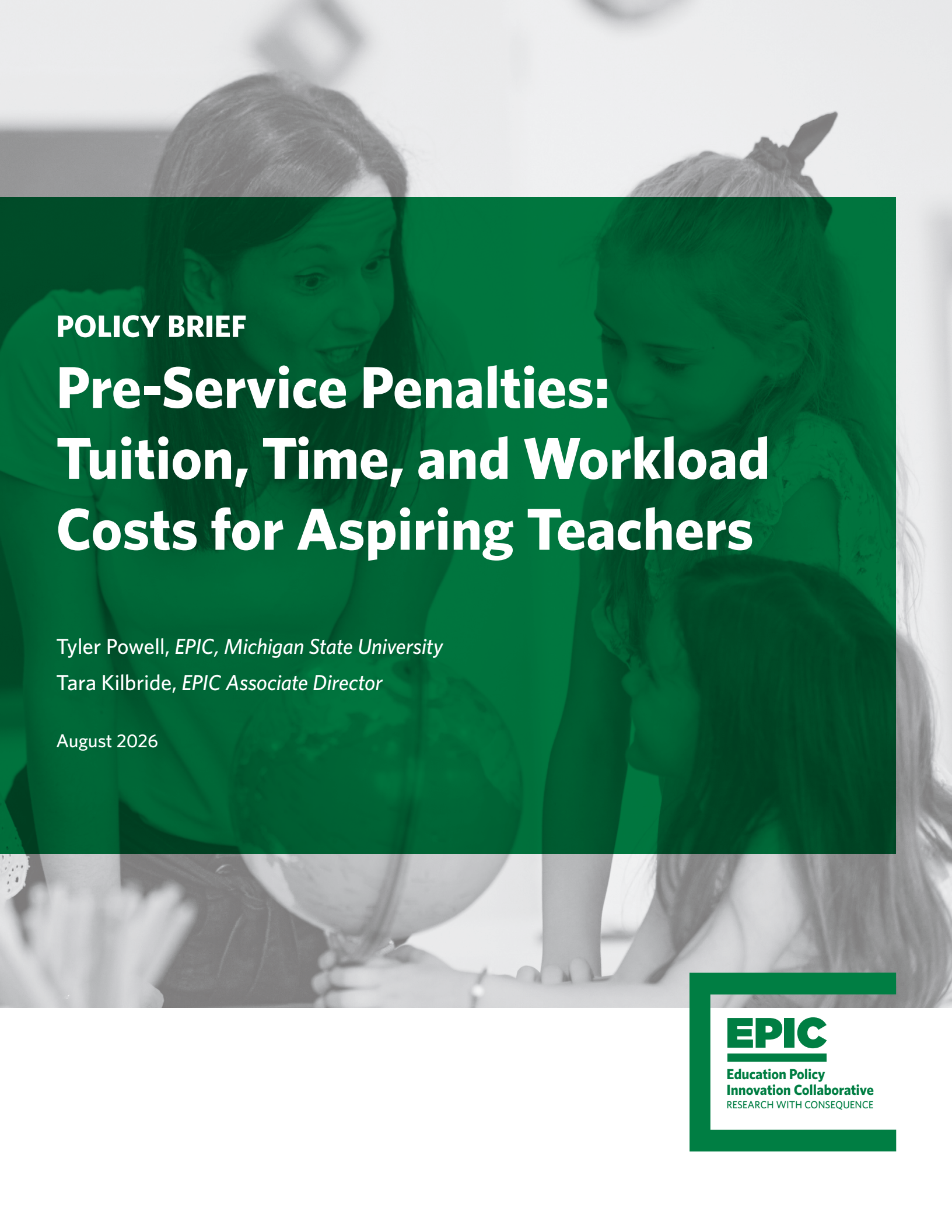


A grayscale background image showing a teacher and two young students looking at a globe. The teacher is on the left, smiling and pointing at the globe. The students are on the right, looking intently at the globe. The image is partially covered by a green overlay.

POLICY BRIEF

Pre-Service Penalties: Tuition, Time, and Workload Costs for Aspiring Teachers

Tyler Powell, *EPIC, Michigan State University*

Tara Kilbride, *EPIC Associate Director*

August 2026

EPIC

**Education Policy
Innovation Collaborative**
RESEARCH WITH CONSEQUENCE

ACKNOWLEDGMENTS

The authors wish to acknowledge the many people who graciously gave of their time in support of this effort. We are especially grateful to our partners from the Michigan Department of Education, Michigan's Center for Educational Performance and Information, and the Michigan Department of Lifelong Education, Advancement, and Potential for their collaboration and thoughtful feedback. We also thank Michelle Huhn for her support with graphics and formatting and Bridgette Redman for her excellent copyediting.

DISCLAIMER

The Education Policy Innovation Collaborative (EPIC) at Michigan State University is an independent, non-partisan research center that operates as the strategic research partner to the Michigan Department of Education (MDE), Center for Educational Performance and Information (CEPI), and Michigan Department of Lifelong Education, Advancement, and Potential (MiLEAP). EPIC conducts original research using a variety of methods that include advanced statistical modeling, representative surveys, interviews, and case study approaches. This study used data the Michigan Education Research Institute-Michigan Education Data Center (MERI-MEDC) structured and maintained. MEDC data are modified for analysis purposes using rules governed by MEDC and are not identical to those data that MDE, CEPI, or MiLEAP collect and maintain. Results, information, and opinions solely represent the author(s) and are not endorsed by, nor reflect the views or positions of, grantors, MDE, CEPI, and MiLEAP, or any employee thereof. All errors are our own.



Education Policy
Innovation Collaborative
RESEARCH WITH CONSEQUENCE

August 2026

Pre-Service Penalties: Tuition, Time, and Workload Costs for Aspiring Teachers

By: Tyler Powell and Tara Kilbride

Overview

The financial tradeoffs associated with teaching are often framed as a “teacher pay penalty,” reflecting differences between teachers’ salaries and those of similarly educated professionals in other fields. However, aspiring teachers may begin accumulating added tuition, time, and workload costs long before entering the workforce due to the highly specialized coursework and clinical training the profession requires. We extend the familiar concept of a teacher pay penalty to teachers’ pre-service investments. Within this context, a “pre-service penalty” means that becoming a teacher requires greater investments of time, coursework, and financial resources than other undergraduate career paths. Importantly, this definition of “penalty” does not imply that these additional requirements are unnecessary or inappropriate preparation for a career in teaching.

Our analyses use publicly available tuition rates, individual-level postsecondary records, and teacher certification data from the state of Michigan to estimate the extent of these additional costs that teachers incur while pursuing their undergraduate degrees. Specifically, we explore three key research questions:

1. **Do future teachers complete more college credits throughout their undergraduate careers than their peers in other fields?**

We find that teachers complete an average of 159 college credits during their undergraduate education. This is 16% more than the average for college graduates who do not become teachers (137 credits) and 33% higher than the minimum required to graduate from most bachelor’s degree programs (120 credits).

2. **How do these additional credit hours affect future teachers' tuition costs, workloads, and time to degree?**

On average, future teachers incur about \$5,500 more in tuition than all other bachelor's degree-seeking students in the state, and \$10,000 more than otherwise similar students at the same higher education institution. Teachers tend to enroll in slightly more credits per term—indicating a heavier workload—and take slightly longer to graduate than their peers on other career paths.

3. **Do the added costs of becoming a teacher differ across certification areas or higher education institution types?**

We find that special education teachers face significantly larger tuition, time, credit, and workload penalties than elementary or secondary-level general education teachers. Teachers from private institutions also face a larger tuition penalty, but they experience a similar time penalty and somewhat smaller credit and workload penalties than their counterparts at public institutions.

Amid declining public perceptions of and interest in the teaching profession¹ and persistent teacher shortages within and outside of Michigan,² it is important to understand not only teachers' experiences after they enter the workforce but also the investments required to become a teacher in the first place. By documenting the additional coursework, tuition costs, time commitments, and academic workloads associated with teacher preparation, this report provides new evidence to inform discussions about teachers' financial considerations, barriers to entry into the profession, and policies aiming to strengthen the teacher pipeline while maintaining rigorous preparation standards.

DATA AND METHODS

This brief uses multiple data sources and analytical methods to examine how future teachers' college tuition, course-taking, time, and workload costs compare to those of their non-teacher peers.

Data Sources

We first use student-level administrative data from the Michigan Student Data System (MSDS) to identify the all students who graduated from public high schools in Michigan between 2009 and 2017. Using postsecondary data from the Student Transcript and Academic Record Repository (STARR) and the National Student Clearinghouse (NSC), we then identify the subset of students who completed their undergraduate studies at in-state institutions of higher education (IHEs) and earned bachelor's degrees within 7 years of high school graduation. These steps result in a final analytic sample of 252,110 bachelor's degree recipients.

Using a crosswalk between student and educator identification codes and credentialing data from the Michigan Online Educator Certification System (MOECS), we divide our sample into two subgroups—teachers and non-teachers—based on whether they earned a Michigan teaching certificate within two years of earning a bachelor's degree. While we recognize that some people classified as “non-teachers” may eventually pursue teaching, focusing on this relatively narrow time frame enables us to assess differences in costs of college attendance consistently across cohorts and estimate added costs for teachers who follow a relatively direct path to degree completion.

The data we use to estimate financial, time, and workload costs for teachers and non-teachers during college come from multiple sources, as data availability and coverage differ across institution types. We rely on student-level enrollment, course-taking, and degree attainment data from STARR, and use comparable data fields from NSC to fill gaps when STARR data are not available. Similarly, we use detailed tuition pricing from the Michigan Association of State Universities' annual Report on Tuition and Fees for 4-year public IHEs, and use the average tuition costs reported in the Integrated Postsecondary Education Data System (IPEDS) to calculate comparable per-credit tuition estimates for community colleges and 4-year private institutions.³

Analytic Sample

The demographic composition and academic histories of students who become teachers differ substantially from those of their peers in other fields. Table 1 shows characteristics of the 12,713 future teachers and 239,397 non-teachers in our analytic sample. These descriptive comparisons highlight notable compositional differences between the populations of teachers and non-teachers, which inform our approach for estimating teacher cost penalties.

Table 1. Sample Comparison – Teachers and Non-Teachers			
Category	Student Characteristic	Teachers (N=12,713)	Non-Teachers (N=239,397)
Demographic Group (Percentage)	Male	19.3	44.5
	Asian	1.2	5.2
	Black	1.9	6.7
	Latino	1.8	2.7
	White	93.9	83.6
	Other Race/Ethnicity	1.2	1.8
Hometown Urbanicity (Percentage)	Urban	14.2	18.5
	Suburb	54.2	53.6
	Town	14.5	13.2
	Rural	28.3	24.5
K-12 Student Subgroup (Percentage)	Special Education	1.0	1.6
	English Learner	0.3	1.0
	Economically Disadvantaged	12.5	17.1
ACT/SAT Performance (Percentile Rank)	ACT/SAT Math	71.9	74.5
	ACT/SAT Reading	73.6	72.9

Notes: We convert ACT/SAT scores from standard deviation units to percentile ranks for ease of interpretation. Students' race, gender, and hometown urbanicity are based on K-12 enrollment data reported during their high school graduation year.

Specifically, future teachers are far less likely than their peers to be men or persons of color, less likely to have received special education or English learner services, and less likely to have been classified as economically disadvantaged during their K-12 education. On average, future teachers scored slightly lower in math and slightly higher in reading on standardized college entrance exams than non-teachers.⁴ While similar shares of teachers and non-teachers attended high schools in suburbs and towns, graduates from urban high schools are underrepresented among future

teachers and those from rural high schools are overrepresented. These patterns underscore the importance of accounting for compositional differences between teachers and non-teachers when estimating cost differences.

Outcome Measures

Total Credit Hours Completed

In addition to content knowledge courses in their area of specialization, teacher preparation students must complete pedagogy courses and structured field experiences. As a result, we may expect to see teachers complete more undergraduate credit hours, on average, than their peers pursuing other fields. To assess whether this is the case, we examine differences in the cumulative total of each student's credit hours upon earning their first bachelor's degree.⁵ We refer to the difference in the average cumulative credit attainment between teachers and non-teachers as the **teacher coursework penalty**.

We use direct measures of credit attainment for the 87% of students in our sample whose complete undergraduate records are available through STARR. For the 5% whose undergraduate records are available only through NSC, we estimate credit attainment based on the full-time-equivalent (FTE) days reported in NSC. For the remaining 8% whose STARR records cover some semesters but not others, we use a combination of STARR records and NSC credit estimates..⁶

Total Tuition Costs Before Aid

If future teachers complete more undergraduate credit hours than their peers, this could translate into higher tuition costs. For instance, at IHEs with a linear pricing structure, tuition increases in proportion to the number of credit hours a student takes each semester. Teacher candidates at IHEs with flat-rate pricing (i.e., those charging the same tuition to all full-time students regardless of credit hours) may still incur higher costs than their peers, particularly if they remain enrolled for additional semesters to complete the required credits. We refer to differences in estimated tuition costs between teachers and non-teachers as the **teacher tuition penalty**.

For credits earned at 4-year public institutions, we estimate costs based on the pricing structure from the specific year and institution for each completed course.⁷ We estimate per-credit tuition rates for in-district and out-of-district residents attending 2-year colleges (assuming a linear pricing structure⁸ and an average of 30 credit hours per year) and estimate flat-rate tuition costs per semester of full-time enrollment at 4-year private IHEs⁹ (i.e., half of the average annual tuition), separately by IHE and year.¹⁰ These estimates represent the "sticker price" for the coursework a student completed throughout their undergraduate education before applying any financial aid. They do not necessarily reflect the actual amount a student was responsible for paying.

Time to Complete Bachelor's Degree

If the content knowledge, pedagogy, and field experience coursework required for teacher preparation students require more credit hours than a typical undergraduate degree program, this could mean that future teachers take longer than their peers to graduate. "Time costs" have financial consequences, as each additional semester of undergraduate enrollment adds to students' total tuition costs and delays their entry into the workforce.

We calculate students' degree completion time based on the number of fall and spring semesters they spend enrolled as undergraduates before earning their first bachelor's degree. This is not necessarily equivalent to the amount of time elapsed between college entry and degree conferral, as not all students remain enrolled continuously for all possible fall and spring semesters until graduation. We refer the difference in degree completion time between teachers and non-teachers as the **teacher time penalty**.

Credit Load per Semester

Some teacher preparation students may enroll in heavier course loads in a given semester to complete their additional credit requirements without taking longer to graduate. This type of increased workload could negatively affect students both academically and financially, with their available study time divided among a larger number of classes and less time to dedicate to other activities like part-time jobs.

We calculate each student's average credit load by dividing the total number of credits they earned before completing their bachelor's degree by the number of fall and spring semesters they were enrolled as undergraduates.¹¹ We use the term **teacher workload penalty** to refer the difference between teachers' and non-teachers' average credit loads per semester.

Methodology

Students who become teachers differ from other bachelor's degree earners in many ways beyond their career choice. It is clear from Table 1 that teachers and non-teachers differ from each other demographically, academically, and geographically. It is also possible that they tend to choose different colleges and majors than their peers. These differences could affect their tuition costs, time to degree, and course loads. As a result, we estimate multiple versions of each teacher penalty to better understand the added costs associated with teacher preparation and isolate penalties from compositional differences between future teachers and their peers.

Unadjusted Estimates

We begin by comparing average outcomes across the full samples of bachelor's degree earners who do and do not become teachers. These estimates describe the **overall differences between teachers and non-teachers** in total credits completed, tuition costs before aid, time to degree, and average credits per semester. We also present distributional differences in each outcome across the teacher and non-teacher samples, comparing shares of students above or below thresholds with policy or practical significance (e.g., commonly used credit thresholds for degree completion, full-time status, or course overload status).

Adjusted Estimates

Some differences in college costs between teachers and non-teachers may reflect broader differences in students' backgrounds and academic preparation rather than the requirements of teacher preparation itself. To account for this, we estimate adjusted differences that compare students with similar demographic and academic characteristics. These characteristics include each of the variables shown in Table 1, as well as each student's high school graduation year and the first postsecondary institution they attended after high school.¹²

These adjusted estimates help account for factors that may influence both students' likelihood of becoming teachers and their undergraduate enrollment patterns. For example, if students with stronger academic preparation tend to complete degrees more quickly and are also more likely to pursue teaching or if future teachers tend to enroll at less expensive postsecondary institutions, simple comparisons between teachers and non-teachers may understate the additional costs associated with teacher preparation. In contrast, our adjusted estimates can be interpreted as the **differences between otherwise similar teachers and non-teachers** in terms of their undergraduate credit attainment, tuition costs, time to degree, or average workload.

Same-Major Estimates

While most future teachers complete education-specific academic majors, about 30% major in a “teachable” content area, such as math or history, alongside peers on non-teaching career paths. Majors that are common among both teachers and non-teachers therefore provide a close comparison of costs among students with similar academic interests and career options. Future teachers with “teachable majors” complete additional teacher preparation coursework and supervised field experiences separately from their content-area major, sometimes as a second major or minor. Thus, same-major estimates of teacher cost penalties reflect the **additional coursework, financial costs, and time commitments that future teachers experience beyond the requirements for their content-area major**.¹³

Heterogeneity in Added Costs

We assess whether and how teacher cost penalties vary depending on the **type of higher education institution** where a future teacher begins their undergraduate education and what **type of teaching certification** they pursue. We calculate adjusted penalty estimates separately for students who initially enroll at 4-year public, 4-year private, and 2-year institutions. In addition to differences in base tuition rates across IHE types, these estimates could provide insight about students' strategies for completing teacher preparation program requirements within different institutional contexts. We also calculate separate penalty estimates for teachers specializing in general education at the elementary and secondary levels and those certified in special education. Variation in cost penalties across certification areas could reflect differences in program-specific standards (e.g., more intensive student-teaching requirements for special education) or differences between programs structured as academic majors (most common for elementary and special education) and non-major programs (most common for secondary education).

RESULTS

The analyses in this section quantify the substantial pre-service investments associated with pursuing a teaching career and compare them with the tuition, time, coursework, and workload investments of college graduates in other fields. Although Michigan's certification structure has changed since the teacher candidates in this study completed their preparation, the core components of teacher preparation contributing to added pre-service costs—including pedagogical coursework, content-specific training, and supervised clinical experiences—remain common across states and certification models. Accordingly, the broader patterns we document here may be informative beyond the specific policy context in which these cohorts completed their preparation.

On average, future teachers complete nearly 160 undergraduate credit hours—16% more than other undergraduates and 33% more than the typical requirement for a bachelor's degree.

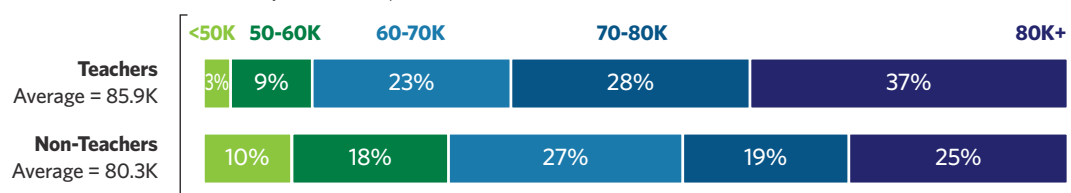
Future teachers complete substantially more credits than their peers by the time they earn a bachelor's degree. The top panel of Figure 1 shows that, on average, teachers graduate with 159 undergraduate credits, compared to 137 credits for non-teachers. This indicates that future teachers complete 16% more credits than other undergraduates and 33% more than the 120-credit minimum typically required for a bachelor's degree. While nearly one-third of non-teachers (31%) complete fewer than 125 credits (closer to the 120-credit minimum), only 8% of teachers fall in this range. Sixty-one percent of teachers complete 150 or more credit hours, compared to just 22% of non-teachers. This indicates that most teachers graduate with at least 30 credits beyond what is necessary for a bachelor's degree. To put this additional coursework into context, 30 credits is typically the minimum required to complete a second undergraduate major or earn a master's degree.

FIGURE 1. Coursework, Tuition, Time, and Workload Costs for Teachers and Non-Teachers

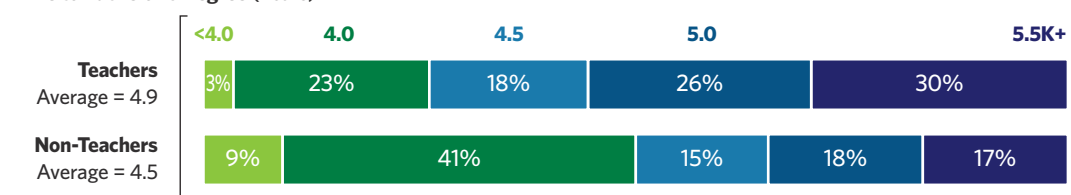
Credits at Time of Bachelor's Degree



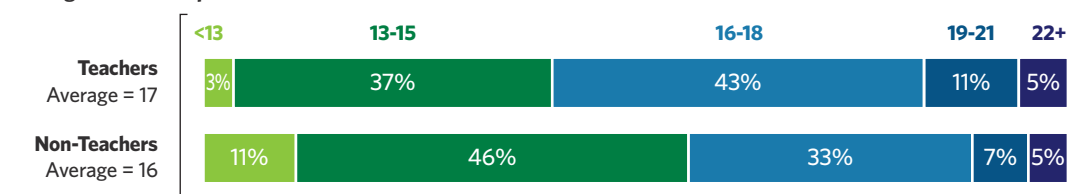
Total Estimated Tuition Cost (2023 Dollars)



Time to Bachelor's Degree (Years)



Average Credit Load per Term



Tuition costs for most future teachers exceed the maximum combined amount of federal aid available through Pell Grants and Direct Loans.

The second panel of Figure 1 shows that these differences in credit accumulation translate into higher tuition costs for future teachers compared to their peers. We estimate that teachers incur an average of about \$85,900 in tuition during their undergraduate careers, compared to \$80,300 for non-teachers. For context, under current limits, a dependent undergraduate student could receive roughly \$60,000 in federal support through a combination of Direct Loans and Pell Grants over 4 years.¹⁴ Even if all students qualified for the maximum amount of financial support, this would not be sufficient to cover tuition costs for most aspiring teachers, as 88% of teachers and 72% of non-teachers incur tuition costs in excess of \$60,000. As the third panel of Figure 1 shows, relatively few teachers complete their degrees in 4 years. Students on a 5-year timeline may qualify for an additional year of Pell Grant funding, increasing the total possible federal support to just under \$70,000. While this is sufficient to cover tuition costs for the majority (56%) of non-teachers, it only covers tuition for 35% of teachers.

Future teachers take on heavier course loads and take longer to graduate than their peers.

Because teacher preparation requires additional coursework, students must enroll in heavier course loads than their peers or take longer to complete their degrees. Our findings indicate that future teachers tend to do both. The third panel of Figure 1 shows that, on average, teachers complete their degrees in about 5 years, approximately one semester longer than the average non-teacher. Only 26% of teachers graduate within 4 years, whereas non-teachers are nearly twice as likely to do so (50%). Further, non-teachers are three times as likely as teachers to graduate early, with 9% of non-teachers graduating in less than 4 years, compared to 3% of teachers.

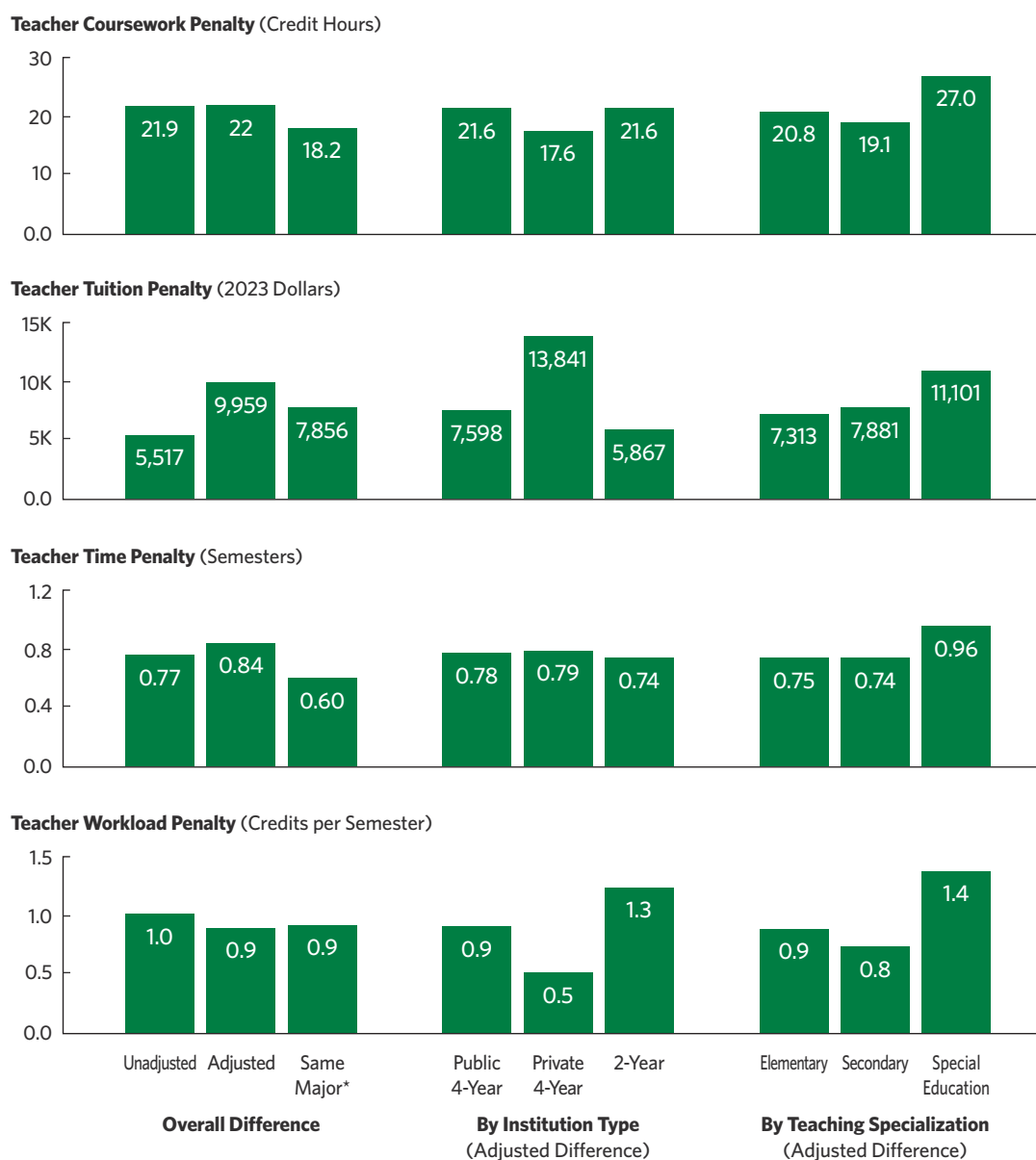
The final panel of Figure 1 shows that future teachers also carry slightly heavier course loads during the time they are enrolled. On average, teachers complete about 17 credits per term, compared to 16 credits for non-teachers. While this difference may seem small when averaged across a student's undergraduate career, it likely means that students complete typical course loads in some semesters (e.g., five concurrent 3-credit courses) and heavier course loads in others (e.g., adding a sixth 3-credit course), increasing their workload during those semesters. It may also mean that teachers are more likely to enroll in courses during summer and winter breaks to stay on track to graduate. Teachers are 73% less likely than non-teachers to complete fewer than 13 credits per semester, and 30% less likely to complete fewer than 16 credits per semester. Notably, nearly all teachers (97%) surpass the 12 credits per semester typically required for full-time status (compared to 89% of non-teachers), and 60% surpass the recommended 15-credit load (compared to 43% of non-teachers).¹⁵

The added costs of becoming a teacher remain substantial—and the tuition penalty becomes even larger—when comparing students from similar backgrounds attending the same institutions.

Regardless of which method we use to calculate college cost penalties, our results consistently show that future teachers complete more coursework, incur higher tuition costs, take longer to graduate, and carry heavier course loads than their peers who do not become teachers. The top panel of Figure 2 shows that future teachers complete approximately 22 additional credits before earning a bachelor's degree—this is true both for the average (unadjusted) difference across our

full sample, and the regression-adjusted difference for otherwise similar teachers and non-teachers who attended the same undergraduate institutions. When comparing credit hours for teachers and non-teachers majoring in the same “teachable” content area, we still observe a substantial teacher coursework penalty of about 18 credits (equivalent to six extra 3-credit courses). Similarly, future teachers require approximately one additional semester to complete a bachelor’s degree and complete nearly one additional credit per semester while enrolled, even when compared to otherwise-similar students who begin college at the same institution.

FIGURE 2. Teacher Coursework, Tuition, Time, and Workload Penalties



Note: “Same-major” estimates are based on a restricted sample of students who graduate with one of the 15 most common non-education-specific content area majors among future teachers (see endnote 13 for additional details).

The tuition penalty, on the other hand, nearly doubles when we adjust for student characteristics and differences across institutions. This indicates that the raw difference in tuition costs (\$5,517) significantly understates the true added costs associated with teacher preparation. Rather than explaining away the teacher tuition penalty, these comparisons suggest that differences in student backgrounds and enrollment pathways mask a substantial portion of the costs associated with teacher preparation. This could suggest that future teachers tend to enroll at lower-cost institutions, or that other characteristics associated with lower tuition costs are more common among people who choose careers in teaching. When we focus on teachers and non-teachers at the same institutions, from the same high school graduation cohorts, and with similar demographic and academic characteristics, the gap grows to nearly \$10,000. Even among students pursuing the same academic major at the same institution, future teachers incur nearly \$8,000 more in tuition costs than their peers.

Future teachers at private institutions face larger tuition penalties, while those who begin at community colleges face larger workload penalties.

Although future teachers at all types of IHEs face substantial added costs, we find key differences in how their extra coursework translates to tuition, time, and workload penalties. The middle section of Figure 2 compares each teacher cost penalty at 4-year public, 4-year private, and 2-year institutions. For instance, future teachers at private institutions experience smaller coursework and workload penalties but very similar time penalties compared to those at other types of institutions. By contrast, future teachers who begin at community colleges and later transfer to 4-year institutions face the largest workload penalty, completing more additional credits per semester or more courses over winter and summer breaks than those who begin at either public or private 4-year institutions, yet their total coursework penalty is approximately equal to that of students attending 4-year public institutions.

Future teachers who begin at private institutions face the largest tuition penalty, incurring approximately \$14,000 more in tuition costs than non-teachers, compared to about \$7,600 and \$5,900 at 4-year public and 2-year institutions, respectively. This pattern is unsurprising, as the relative differences in cost penalties are approximately proportional to the base tuition rates at each type of institution. The fact that time-to-degree penalties are similar across institution types suggests that students generally spend comparable amounts of additional time to complete teacher preparation requirements, even at institutions where credit attainment and workload penalties tend to be lower.

Special education teachers face the largest penalties in terms of added coursework, tuition costs, completion time, and workload.

Special education teachers face consistently higher cost penalties than their peers pursuing elementary or secondary general education teaching credentials. Compared to otherwise similar non-teachers, future special educators complete approximately 27 additional credits before earning a bachelor's degree, compared with 19 to 21 additional credits for future elementary and secondary teachers. As a result, special education teachers incur a tuition penalty of more than \$11,000, exceeding the tuition penalties for elementary and secondary general education teachers by 52% and 41%, respectively. Future special education teachers also face larger time and workload penalties than other teachers, indicating that they take longer to graduate and must complete more

credit hours per semester than not only non-teachers, but also fellow aspiring teachers with general elementary or secondary education specializations. The additional clinical experience requirements associated with special education certification likely contribute to these patterns.¹⁶

IMPLICATIONS

Much of the national conversation surrounding teacher shortages has focused on the “teacher pay penalty” that educators may experience after entering the workforce. This report highlights another, less visible dimension to these discussions by documenting the substantial investments that teachers make before they receive their first paycheck. Future teachers complete more coursework, spend more on tuition, take longer to graduate, and carry heavier academic workloads than their peers pursuing other career paths. Recognizing and quantifying these pre-service costs is an important first step toward understanding the demands on teacher candidates as they complete important preparation milestones and ensuring that they subsequently receive appropriate professional recognition and compensation.

While preparation programs may be able to reduce added costs through more efficient course design and sequencing,¹⁷ many of the requirements contributing to these costs serve important purposes in preparing teachers for the workforce. We discuss two complementary approaches for addressing teacher pre-service costs without reducing program quality or certification standards: financial supports that reduce barriers to entering the profession and strategies to help teachers receive appropriate professional recognition and compensation commensurate with their substantial pre-service investments.

The added costs for college students in teacher programs demonstrate a continued need for targeted financial supports.

Financial aid programs designed specifically for future educators can play an important role in offsetting the added costs that teacher candidates incur while in college. In Michigan, college students pursuing teaching careers may be eligible for up to \$10,000 per year through the MI Future Educator Fellowship, as well as a \$9,600 stipend for each required semester of student teaching through the MI Future Educator Stipend program. While many aspiring teachers may also qualify for federal support through the TEACH Grant program, the level of funding available through the TEACH program is significantly lower, its eligibility and service requirements are more restrictive, and its loan conversion policy carries a greater financial risk to students than to the MI Future Educator Fellowship.

The total possible funding available through the MI Future Educator programs is significantly higher than the average “teacher tuition penalty” in Michigan (\$9,959 in 2023 dollars, equivalent to about \$10,812 in 2026). However, the added financial costs associated with becoming a teacher extend beyond tuition alone. Future teachers’ increased course requirements and degree completion time could introduce additional financial tradeoffs, for instance, by making it more difficult for a student to work part time while enrolled in college or delaying their entry into the workforce (and therefore postponing their earnings). These types of targeted financial aid programs may help expand access to the teaching profession by reducing financial barriers associated with teacher preparation, particularly for students from economically disadvantaged backgrounds.

Future teachers make significant pre-service investments that may not always translate into comparable professional benefits.

Requiring future teachers to complete additional coursework and gain practical experience in clinical settings helps ensure that new educators enter the classroom prepared to support student learning. However, the substantial costs associated with these requirements raise important questions about whether aspiring teachers receive commensurate financial and professional benefits. Many future teachers invest comparable amounts of time and coursework to what students in other fields may invest toward completing both their bachelor's and master's degrees, yet these additional credits do not necessarily translate into the same professional recognition or compensation associated with graduate credentials. While this does not imply that undergraduate teacher preparation is equivalent to a master's degree, it does highlight a disconnect between the substantial investments required to enter the profession and the benefits that candidates receive in return.

For some aspiring teachers, integrated bachelor's-to-master's pathways or master's-level teacher certification programs may represent better investments if they require similar time commitments but result in graduate credentials or post-baccalaureate credits that are recognized on teacher salary schedules. However, research has generally found limited evidence that master's degrees improve teaching effectiveness, suggesting a need to reconsider whether existing compensation systems appropriately recognize the forms of training and credentials that are linked to improvements in instructional quality.¹⁸ For instance, school districts could consider incorporating content-area endorsements that reflect specialized expertise or address high-need instructional areas into their criteria for teachers' salary schedule placement. Many of the country's largest school districts already offer financial incentives in recognition of specialized expertise in shortage areas like special education, where teachers experience the largest coursework, tuition, time, and workload penalties.¹⁹ The additional preparation required of special education teachers reflects the highly specialized knowledge and skills needed to teach students with disabilities. Ensuring that these educators receive appropriate professional recognition and compensation may be particularly important given the persistent shortages of special education teachers in Michigan and across the country.

ENDNOTES

1. Kraft, M. A., & Lyon, M. A. (2024). The rise and fall of the teaching profession: Prestige, interest, preparation, and satisfaction over the last half century. *American Educational Research Journal*, 61(6), 1192-1236. <https://doi.org/10.3102/00028312241276856>
 2. Kilbride, T., Rogers, S., Powell, T. & Moriarty, J. (2026). Michigan Teacher Shortage Study: 2026 Report. Education Policy Innovation Collaborative. <https://epicedpolicy.org/michigan-teacher-shortage-study-2026-report/>
 3. *The Report on Tuition and Fees* provides per-credit tuition rates for each 4-year public IHE by year, class standing (i.e., lower level or upper level), enrollment level (i.e., total number of credits attempted in a given semester), and residency status. This level of detail enables us to account for each institution's tuition-pricing structure (e.g., some IHEs use a linear pricing structure with a constant per-credit fee, while some charge a fixed rate for any student enrolled full time regardless of credit load). The IPEDS data we use for 4-year private and 2-year institutions provide average costs by IHE, year, and residency status but not by class standing or enrollment level.
 4. Michigan changed its official high school test from the ACT to the SAT starting in 2015-16. To place scores from both assessments on comparable scales, we standardize students' scores separately by year and subject area (using data from all 11th graders rather than just our analytic sample), generating a combined variable that describes how a student's performance compares to that of all other students in the state who took the same test in the same year.
 5. Theoretically, a longer average degree completion time or higher number of credit hours may not always indicate a difference in program requirements and could instead reflect a less efficient path to graduation. For instance, students who enroll in courses that do not fulfill specific general education or degree requirements or change their majors midway through college may accumulate more undergraduate credit hours or take longer to graduate. These factors are unlikely to affect our penalty estimates, as we have no reason to believe they are more common among future teachers than among other undergraduate students. Alternatively, our estimates could reflect teachers choosing to pursue multiple endorsements rather than meeting the bare minimum program requirements while their non-teacher peers are more likely to focus their studies on a single field. Our more restrictive models demonstrate that the teacher coursework and time penalties persist after accounting for observable student characteristics, enrollment choices, and academic interests, providing suggestive evidence that these penalty estimates are driven by differences in program requirements rather than differences in the composition of students who do and do not become teachers.
 6. STARR data are available for 97% of the students in our sample who started at 4-year public IHEs, 86% of those starting at community colleges, and 23% of those at private 4-year IHEs. For the remaining students with no STARR data available for at least a portion of their undergraduate education, Michigan's Center for Educational Performance and Information (CEPI) provides estimated totals of earned credits based on the FTE days reported for the student in NSC across all institutions the student attended. Dynarski et al (2015) find that this method overestimates credit attainment at 2-year institutions while slightly underestimating credit attainment at 4-year IHEs. The distributions of teachers across initial IHE types and STARR coverage rates within our sample do not differ meaningfully between teachers and non-teachers; credit attainment estimates from NSC data therefore should not bias estimated differences in college costs between these groups.
- Dynarski, S. M., Hemelt, S. W., & Hyman, J. M. (2015). The missing manual: Using National Student Clearinghouse data to track postsecondary outcomes. *Educational Evaluation and Policy Analysis*, 37(1 Suppl), 53S-79S. <https://doi.org/10.3102/0162373715576078>

ENDNOTES (continued)

7. When estimating tuition costs for institutions that differentiate pricing based on full-time status or class standing, we assume that students must enroll in at least 12 credits each semester for full-time status and must accumulate at least 60 credits for upper-level status. We selected these thresholds because they are commonly used across institutions, however, they may not reflect the actual thresholds in place at every individual institution in our sample.
8. All community colleges in Michigan use linear pricing schemes based on either contact hours, credit hours, or billable hours. https://www.house.mi.gov/HFA/PDF/CommunityColleges/CC_Data_MI_CC_Tuition_and_Fee_Rates_fy25.pdf
9. Of the 19 private universities with at least 300 students in our sample, 15 (79 percent) used flat-rate tuition for the 2025-26 school year.
10. We determine whether to apply the in-district or out-of-district tuition rate for each community college student based on whether the resident district, ISD, and/or county reported in the K-12 student data in the year of their high school graduation falls within the community college district for the specific 2-year institution where they completed their coursework. https://www.house.mi.gov/hfa/PDF/CommunityColleges/CC_Data_MI_CC_Map_Aug18.pdf
11. Under this approach, credits that students complete during summer and winter sessions are distributed evenly across students' enrolled fall and spring semesters. To understand whether our estimates of teacher credit load penalties are driven by increased course loads during fall and spring semesters or additional credits completed during summer and winter sessions, we calculate two alternate outcomes: total credits accumulated during fall and spring semesters, and total credits accumulated during summer and winter sessions.
12. If a student enrolled in multiple institutions in their first undergraduate semester, we assign them to the institution where they enrolled in the most credit hours. If they enrolled in the same number of credit hours at multiple institutions, we prioritize enrollments at 4-year public institutions, followed by 4-year private IHEs, then 2-year IHEs.
13. For these comparisons, we focus on the 15 most common non-education-specific academic major CIP codes among certified teachers in our sample. These include: 23.0101 (English Language Arts), 27.0101 (Math), 45.0101 (Social Studies), 54.0101 (History), 50.0901 (Music), 16.0905 (Spanish), 26.0101 (Biology), 42.0101 (Psychology), 30.0101 (Biology/Physical Science), 24.0102 (General Studies), 45.1001 (Political Science and Government), 19.0706 (Child Development), 31.0505 (Kinesiology), 50.0903 (Music Performance), and 9.0101 (Communications).
14. The \$60,000 total is based on the maximum annual Federal Pell Grant award (\$7,395) multiplied over four years of enrollment, plus the lifetime maximum \$31,000 in Direct Loans for dependent undergraduate students. <https://studentaid.gov/understand-aid/types/grants/pell>; <https://fsapartners.ed.gov/knowledge-center/fsa-handbook/2024-2025/vol8/ch4-annual-and-aggregate-loan-limits>
15. Attewell, P., & Monaghan, D. (2016). How many credits should an undergraduate take? *Research in Higher Education*, 57(6), 682-713. <https://link.springer.com/article/10.1007/s11662-015-9401-z>
16. Special education candidates are typically required to complete student teaching placements in both special education and a general education content area. https://www.michigan.gov/mde/-/media/Project/Websites/mde/educator_services/prep/clinical_experiences_requirements.pdf
17. For instance, Michigan's recent implementation of more focused grade bands and endorsement pathways may provide opportunities for preparation programs to streamline course sequences. Whether these changes reduce future teachers' coursework, tuition, time, or workload costs remains an important question for future research.
18. Chingos, M. M., & Peterson, P. E. (2011). It's easier to pick a good teacher than to train one: Familiar and new results on the correlates of teacher effectiveness. *Economics of Education Review*, 30(3), 449-465. <https://doi.org/10.1016/j.econedurev.2010.12.010>
19. Drake, G. (2025, June 12). A show of support: How more districts are incentivizing teaching special education. National Council on Teacher Quality. <https://www.nctq.org/research-insights/a-show-of-support-how-more-districts-are-incentivizing-teaching-special-education/>



Education Policy Innovation Collaborative

MICHIGAN STATE UNIVERSITY
236 Erickson Hall | 620 Farm Lane
East Lansing, MI 48824

(517) 884-0377
EPICedpolicy@msu.edu
www.EPICedpolicy.org