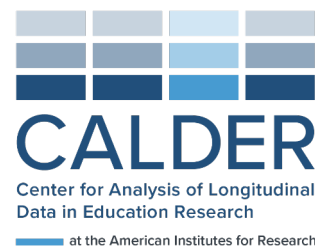


New Evidence from the Early Teacher Pipeline

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Overview

Few school-based factors matter more to student success than teacher quality.¹ Because teachers are so important, the policies that shape the teacher workforce—teacher licensure, for example—are critical issues in education policy and research. But before prospective teachers can be licensed, they first need to choose to pursue teaching and complete an approved teacher education program. Largely because of data limitations, these early stages of the teacher pipeline have received relatively less policy and research attention. This is a problem because the decisions people make before entering teacher preparation programs ultimately help determine who is available to join the teacher workforce.

To help learn more about the early teacher pipeline, a unique partnership between five university-based teacher education programs, the state of Washington, and researchers gathered a rich array of evidence on teacher preparation programs and their implications for the teacher workforce. This CALDER research brief summarizes the partnership's findings in three sections:

Section 1 examines who enters teacher education programs and how this shapes the pool of potential teachers.

Section 2 examines the information teacher education programs collect about applicants, and the applicant attributes faculty consider most important, to better understand how teacher education programs make admissions decisions.

Section 3 examines whether the academic preparation students receive in college predicts who eventually becomes a teacher and how effective they are at raising student test scores.

The following conclusions stand out.

Section 1 shows that education program applicants are evenly split between students who arrived at college interested in teaching and those who did not. We also find that White women apply to teacher education programs at

higher rates than other groups, and their representation in these programs grows across the early pipeline.

Section 2 shows that admissions processes and program faculty consider a range of attributes when evaluating program applicants, from academic preparation to applicants' views about social justice. However, application processes often fail to capture details about applicants' dispositions and content knowledge that faculty want to see. When forced to choose among hypothetical applicants, faculty appear to give extra weight to those who have prior experience working with diverse students and those who are members of marginalized communities. These priorities align with research on the benefits of teacher diversity and reflect long-standing concerns about the demographic mismatch between the teacher workforce and an increasingly diverse student population.²

Section 3 shows that demographics, prior interest in teaching, and academic performance help predict entry into teaching, but the most meaningful predictor of effectiveness as a classroom teacher is performance in "math for teachers" courses in college. The link between these courses and later effectiveness suggests the potential value of preparation that blends content expertise and pedagogical practice.

Taken together, the project's findings suggest multiple opportunities for teacher education programs to strengthen their admission decisions and, by extension, the quality of the teacher workforce.

Acknowledgements. The studies summarized in this brief come from a joint project between faculty and researchers at Central Washington University, Pacific Lutheran University, the University of Washington, Washington State University, Western Washington University, the Center for Analysis of Longitudinal Data in Education Research (CALDER) at the American Institutes for Research, and the Education Research and Data Center at the Washington State Office of Financial Management. The project would not have been possible without the support and cooperation of the participating teacher education programs and their university faculty. Funding for the project was provided by the National Science Foundation (1950030). The findings summarized in this brief and described in the associated research papers do not necessarily reflect the views of the funder or the authors' affiliate institutions. See the Appendix for more details on the partnership and overviews of the individual studies.

Section 1: Who Chooses to Apply to Teacher Education Programs?

Without a clearer sense of who chooses to apply to teacher education programs (and who does not), college faculty and policymakers can miss opportunities to expand the candidate pool and shape the teacher pipeline. With that in mind, this section looks at what the project learned about two groups of students: (1) those who express an interest in teaching when they first apply to college, and (2) those who go on to apply to a teacher education program once they are in college.³ These two groups only partially overlap. Some students who express early interest never apply; some applicants do not express early interest in teaching.

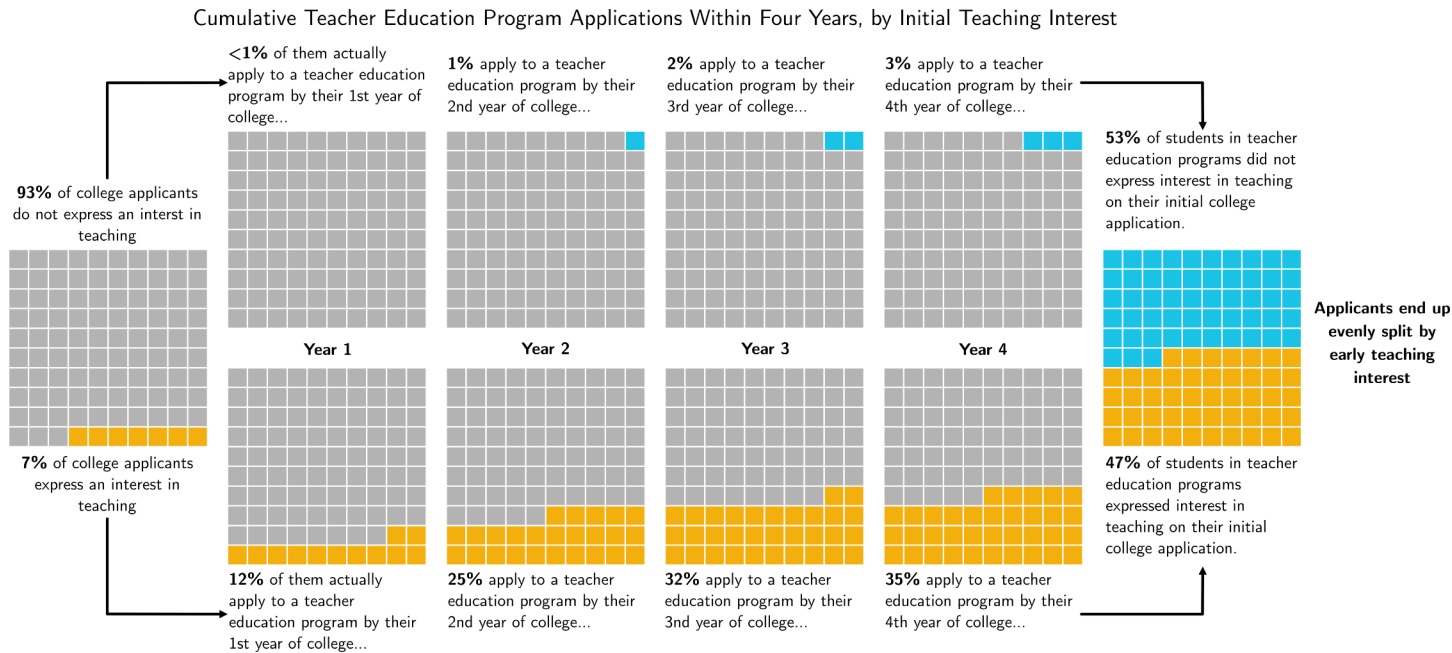
CALDER partnered with three public universities that have undergraduate teacher education programs to study who expressed interest in teaching when they applied to college and who ultimately applied to a teacher education program.⁴ Tracking all college applicants over 5 to 10 years in the three universities points to two key conclusions: (1)

education program applicants were evenly split between students with and without an early teaching interest and (2) the early teacher pipeline produces a demographically skewed pool of prospective teachers.

Teacher Applicants Were Evenly Split Between Students With and Without an Early Teaching Interest

As part of the application process at the three universities, students were asked to identify their intended major or field of study.⁵ Across the three schools, 7% of applicants identified an early interest in teaching. However, once enrolled, only about a third of those students ended up applying to a teacher education program. In fact, program applicants at the three universities eventually ended up being evenly split between students who signaled an early interest in teaching and those who did not. Figure 1 shows the cumulative share of students who applied to teacher education programs over four years of college, separately for students who did not express an interest in teaching on their college application (top row) and those who did (bottom row)

Figure 1. Do College Applicants Who Express Early Interest in Teaching Apply to a Teacher Education Program?



Source: Based on data from Goldhaber, D., Theobald, R., McDuffie, A. R., Slavitt, D., Krieg, J., Chen, V., & Dewil, E. (2025). The beginning of the teacher pipeline: Which college students apply to teacher education programs? CALDER Working Paper 328–0925.

row). The final grid at the right shows the overall composition of applicants: of all students who eventually applied to a teacher education program, 47% had expressed early interest in teaching, while 53% had not.⁶

The Early Pipeline Produces a Narrow and Demographically Skewed Pool

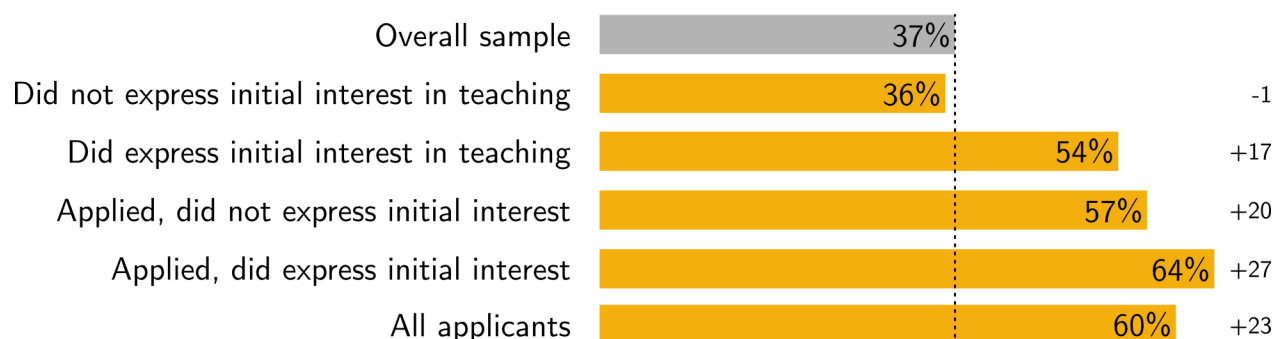
Across the three universities, White female students were more than twice as likely as White male students, Black female students, or Black male students to signal an early interest in teaching on their college application. Among all

students who signaled an early interest in teaching on their college application, White women were over 50% more likely to actually apply to a teacher education program than other groups. The overrepresentation of White females in the early pipeline eventually produces an applicant pool dominated by White females.

Figure 2 shows how the share of White women grows at each stage of the early pipeline. The overall study sample is 37% White women, but White women compose 54% of all the students who express early interest in teaching on their college application and 64% of early-interest

Figure 2. At Every Stage, the Teacher Pipeline Becomes More White/Female

Share of White Women in Each Category



Source: Based on data from Goldhaber, D., Theobald, R., McDuffie, A. R., Slavit, D., Krieg, J., Chen, V., & Dewil, E. (2025). The beginning of the teacher pipeline: Which college students apply to teacher education programs? CALDER Working Paper 328–0925.

students who eventually apply to a teacher education program. Overall, White women make up 60% of all teacher education program applicants, including those who do and do not express early interest in teaching on their college application.

Takeaways and Open Questions

Besides recruiting earlier, the trends in Figure 1 beg questions about why and where students' initial interest in teaching drops off and whether that drop off differs from other fields. Understanding why some students who are initially interested in teaching do not pursue the profession could help teacher education programs increase take-up through stronger outreach, advising, mentoring, and other student supports.

Figure 1 also highlights the existence of a pool of students who appear to discover an interest in teaching after they start college. Indeed, fifty-three percent of teacher applicants in the study did not signal an early interest in teaching on their college applications.⁷ Could teacher education programs expand their candidate pool by learning more about and leveraging the experiences, relationships, or other factors that draw this latent pool into teaching?

Even in controlled comparisons accounting for early interest in teaching, White women are more likely to end up applying to teacher education programs. This suggests something beyond early interest in teaching is steering students to and away from teaching, narrowing the diversity of the pool in the process. Identifying stages in the pipeline that are the "leakiest" or those that offer leverage for retaining and expanding a diversified pool of

potential teachers is another important task for policy and research.

Interest in teaching is still a useful predictor of later career choices, but the results from this project suggest that initial interest in teaching does not always translate into applying to a teacher education program. Recognizing this, many states have launched Grow-Your-Own (GYO) programs to attract high school students and paraprofessionals into teaching. Although research on GYO programs is still emerging⁸, these and other early recruitment initiatives deserve closer study. Researchers and policymakers need to know more about who participates in early recruitment programs, how likely they are to become teachers, and ultimately, how effective they are in the classroom.

Section 2: What Are Teacher Education Programs Looking for in Applicants?

To learn more about how university faculty view aspiring teacher candidates, researchers collected admissions documents and data from faculty involved in preparing math and science teachers. The project's focus on math and science reflects practical considerations. First, understanding how programs view prospective teachers in these subjects is important because both suffer from persistent teacher shortages.⁹ Second (and less obvious) math and science teacher preparation often draws on faculty from both colleges of education and Arts and Sciences departments, creating an opportunity to compare preferences across departments that might have different ideas about what makes a good teacher candidate.

Application Requirements Do Not Always Capture the Information Faculty Want

To learn more about how and what programs look for in applicants, researchers reviewed application documents and interviewed 20 faculty across thirty-five teacher education programs at the five universities. Both the application documents and process, as well as faculty preferences about applicants, addressed a range of applicant attributes but also revealed some internal tensions.

For example, faculty reported wanting more detailed information about applicants' content knowledge and dispositions than was provided by the application process. This included

information about applicants' conceptual understanding of mathematics and science, their views about student-centered instructional approaches, and applicant self-efficacy. Most of the tools that programs used for admissions provided little information about these things. Instead, admissions tools focused on broad information about applicants' coursework, endorsements, and general achievement measures. The result was often a disconnect between what faculty said they wanted to know about prospective applicants and what the admissions process was designed to capture.

In a related study using the same interview data, researchers found that faculty are also interested in gauging applicants' attitudes toward diversity and social justice. Faculty views on these issues fell into three groups. Three of the 20 faculty interviewed indicated that they did not want applicants admitted to their programs if they held negative attitudes toward diversity or social justice. As one explained, he was "not interested in [admitting] people who just don't even recognize that white supremacy is a problem." Six faculty treated applicant views on these issues as potential warning signs, rather than disqualifying. As one professor said, "If [applicants] don't think [diversity is] important, if they haven't thought about it, if it's not their concern, I really worry about them to be teachers in the first place." The remaining 11 faculty considered attitudes towards diversity and social justice as important, but only one factor among many. One said, "I think [diversity is] important to consider, [but] I don't want it to be the prime reason that you admit or don't admit a candidate."

Weighing Different Attributes

To learn more about how programs weigh different applicant attributes, researchers surveyed 113 faculty involved in elementary education, math, or science programs across the five universities. After two survey waves (Spring and Fall 2022), 70 individuals completed the survey, yielding a 62% response rate.¹⁰ To address concerns about social desirability bias,¹¹ the survey asked faculty what they value in candidates using two types of questions.

First, to capture stated preferences, the survey gave faculty a list of attributes and asked them to rate how important each was for assessing a candidate's potential to become a successful STEM teacher. Respondents could rate each attribute as not important, a little important, moderately important, very important, or one of the three most important.¹²

A majority of faculty said they viewed attributes like “number of college STEM courses,” “application essay or open-ended response,” and “performance in college STEM courses” as either very important or one of the three most important indicators of STEM teacher potential.¹³ Within universities, Arts and Sciences faculty tended to value performance in college STEM courses more than STEM faculty working in colleges of education. For example, while 71 percent of Arts and Sciences faculty said “performance in STEM courses” was either very important or one of the three most important indicators of promise, only 47% of Education faculty said so. These results are consistent with the faculty interviews described earlier.

Second, to capture revealed preferences, the survey presented respondents with a pair of hypothetical applicants and asked which one they would prefer to admit. The hypothetical candidates were shown with 1 of 15 combinations of attributes across four dimensions (see Table 1 for an example).

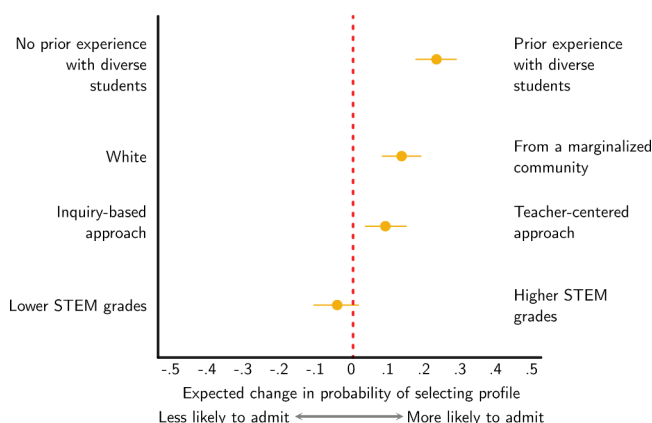
When forced to choose between the two hypothetical applicants, three attributes stood out as important: prior experience working with students from diverse backgrounds, being from a marginalized racial or ethnic community, and a preference for teacher-centered approaches. Figure 3 illustrates how much each candidate attribute influenced faculty decisions, along with the uncertainty around each estimate. Each dot represents the change in the probability (in percentage points) that faculty would choose an applicant with that attribute, holding all other attributes constant.

For example, the dot at the top of the figure indicates that faculty are 23.7 percentage points more likely to select a hypothetical applicant with prior experience with diverse students than an otherwise identical applicant with no prior experience with diverse students. Recall that when faculty were asked directly on the survey about their preferences, they said performance in STEM courses mattered. Figure 3 tells a different story: the confidence interval for STEM grades crosses zero, indicating that STEM grades did not predict which hypothetical candidate faculty preferred.

Table 1. Example of hypothetical applicant comparison used with the question, “Which applicant would you prefer to admit?”

	Applicant A	Applicant B
Disposition	Prefers inquiry-based approach	Prefers teacher-centered approach
Grades	Received high grades in her past math and/or science courses	Received high grades in her past math and/or science courses
Racial ethnic background	Is White	Is from a marginalized racial or ethnic community
Prior experience	Has not worked with students from diverse backgrounds	Has not worked with students from diverse backgrounds

Figure 3. Revealed Faculty Preferences for Candidate Attributes from Forced Trade-off Admission Question



Source for Table 1 and Figure 3: Goldhaber, D., Theobald, R., Roth McDuffie, A., Slavit, D., Dechaine-Berkas, J., Krieg, J., & Dewil, E. (2024). Shaping the STEM Teacher Workforce: What University Faculty Value about Teacher Applicants. CALDER Working Paper No. 295-0324.

Takeaways and Open Questions

Findings from admissions documents, interviews, and the survey reveal several points of tension, including between what faculty want to know and what admissions processes collect, and between what faculty say matters (STEM courses, academic performance) and the trade-offs they make when choosing between hypothetical applicants. Subtle differences in perspective between Arts and Sciences faculty and Education faculty also raise the possibility that the two

groups weigh applicant attributes differently. Whether this inconsistency produces better or worse outcomes than a more coherent approach is an open question worth investigating.

Taken together, the qualitative and survey findings point to multiple disconnects between what faculty say they want to know about applicants, the information admissions processes collect, and the criteria that appear to influence admissions decisions. These disconnects raise a broader question: Which applicant characteristics, if any, actually predict success in the classroom? Given the availability of college course-taking data, the project was able to partly address that question by assessing whether academic preparation predicted future performance (see Section 3).

Section 3: Does Academic Preparation Predict Teacher Effectiveness?

The prior section of this brief presented suggestive evidence that faculty might prioritize academic preparation in theory but not reward it in practice. If academic performance is a strong predictor of classroom effectiveness, this inconsistency could be a problem. But if academic preparation does not predict effectiveness, then the case for worrying about this inconsistency is perhaps weaker.

To find out which is the case, researchers drew on detailed enrollment data from three of the five universities in the consortium (the same institutions as in Section 1). They supplemented the enrollment data with college transcript data for students who completed their degree by 2020–21. Researchers then tracked students after graduation to see who was hired as a K–12 teacher and, for a subset, who was effective in the classroom as measured by value-added to student scores on standardized math and ELA tests.

Tracking college applicants into the workforce highlights two key conclusions: (1) teachers who eventually enter the workforce mirror the demographics of students who apply to teacher education programs, and (2) overall college GPA, driven by math coursework geared toward teachers, predicts later effectiveness.

Who Becomes a Teacher? Who Stays?

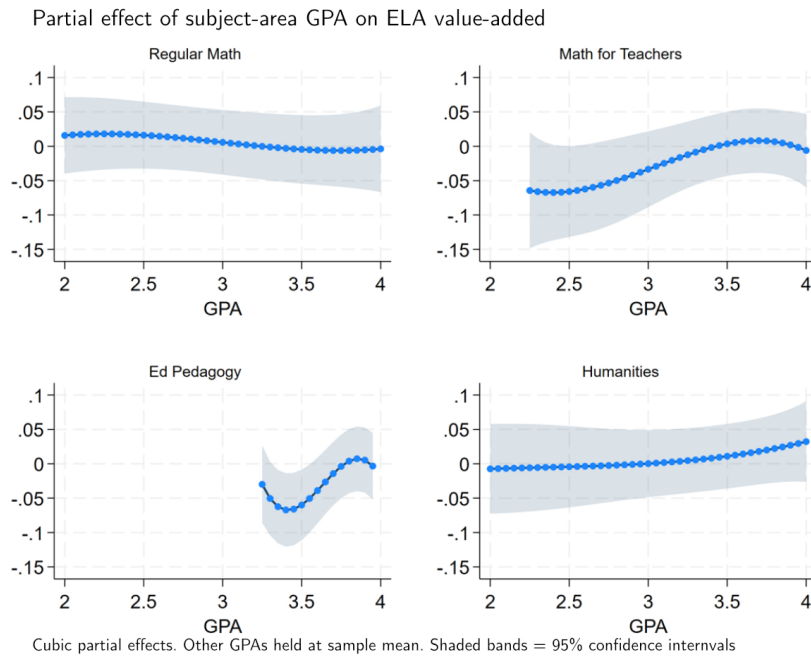
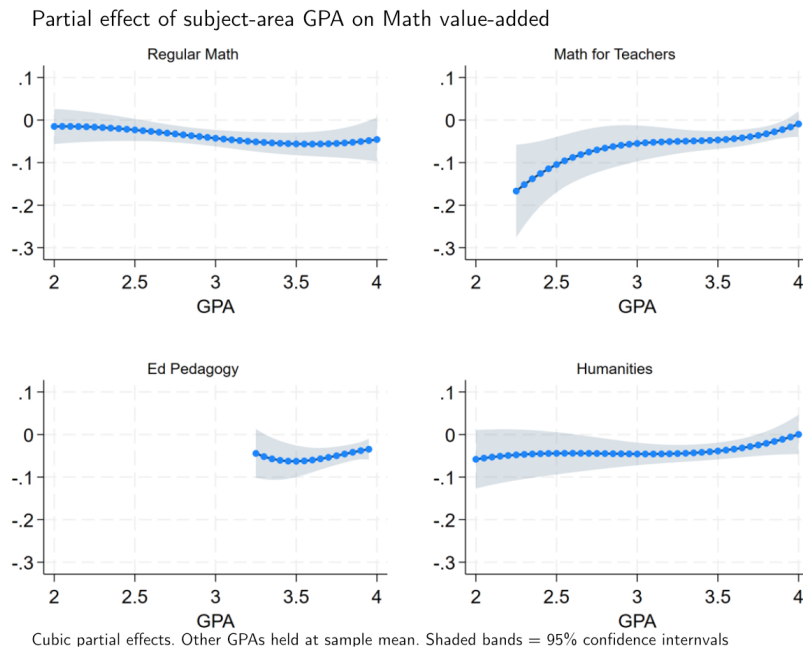
Consistent with Section 1, White women and students who expressed an interest in education when they applied to college were more likely to become teachers. Students who expressed an interest in education on their college applications are substantially more likely to become teachers, a difference of more than 20 percentage points. Academic performance also mattered for entry into the profession. Students with higher college GPAs and greater credit accumulation were also more likely to become teachers. Most preservice characteristics were not, however, strongly related to whether teachers stayed in the profession—with one important exception. Educators who expressed an interest in teaching when applying to college were more likely to stay in teaching year to year.

What Predicts Teacher Effectiveness?

Some measures commonly used to identify promising candidates did not predict how effective teachers later became in the classroom. SAT scores and the number of college credits earned, for example, provided little information about teacher effectiveness. However, contrary to prior research that finds little linkage between college coursework and teacher effectiveness,¹⁴ the project found students' overall college GPA to be a statistically significant, positive predictor of their value-added in both math and ELA, although the magnitude of the effect was modest. Interestingly, this effect was driven largely by students' performance in math courses designed specifically for teachers. This finding about “math for teachers” courses holds up even after accounting for who chooses to become a teacher, how teachers are sorted across school districts, and who stays in or leaves the profession, suggesting the finding is not just an artifact of selection and sorting.

Figure 4 illustrates the point by plotting the relationship between GPAs in different subjects and math value-added (top panel) and ELA value-added (bottom panel). In both cases, GPA in math courses geared for teachers (the “Math for Teachers” plot) shows a positive relationship with value-added. The link between performance in these courses and later effectiveness suggests the potential value of preparation that blends content expertise with pedagogical practice.¹⁵

Figure 4. Do Stronger College Grades Make for More Effective Teachers?



Source: Goldhaber, D., Krieg, J., Theobald, R., Chen, V., Dechaine-Berkas, J., Roth McDuffie, A., & Slavit, D. (2026). Does better academic preparation predict teacher workforce outcomes? CALDER Working Paper 346-0926.

Final Takeaways

The findings summarized in this brief have two main implications. First, college is an important leverage point for influencing who enters teaching. Because many students lose interest in teaching or choose other paths during college, opportunities to expand the future teacher workforce arise well before students apply to teacher education programs. The results also indicate there is a latent pool of potential teachers who become interested while in college—half of teacher education program applicants do not express an interest in teaching on their college application.

With this, college is an important opportunity to encourage talented students with in-demand skill sets to consider teaching. This suggests the value of programs, like UTeach, that enable STEM majors to pursue teacher certification alongside their degree. Such programs create opportunities to reach students who discover an interest in teaching during college but also to reach those who may drift away from it. Evidence from the original UTeach program in Austin also suggests it produces more effective teachers, at least as measured by their ability to raise student scores in math.¹⁶

Second, even though many teacher education programs are nonselective, the findings suggest these programs currently produce information that can help identify promising teachers. Rather than relying primarily on admissions test scores or broad GPA thresholds, this project suggests that policymakers and preparation programs could learn more about future teaching effectiveness by paying closer attention to candidates' performance in coursework that is specifically designed to prepare them for the classroom. Beyond informing selection, predictive signals related to GPA could also help programs identify candidates who might benefit from additional support.

This project also demonstrates the value of cross-institutional and mixed-methods research. It brought together data, expertise, and perspectives from participating universities, state agencies, and researchers to examine questions in ways that no single dataset or method alone could answer. The partnership allowed us to link data and information across the teacher pipeline and connect what happens in teacher education programs to who becomes teachers and how they influence students. These types of connections are critical to inform policies and practices to better ensure the quality of the teacher workforce.

Endnotes

¹A large body of empirical research shows that effective teachers matter for a wide range of student outcomes: test scores, attendance, classroom behavior, high school graduation, college attendance, and adult earnings. Bacher-Hicks, Andrew, and Cory Koedel. "Chapter 2 - Estimation and Interpretation of Teacher Value Added in Research Applications." In *Handbook of the Economics of Education*, vol. 6, edited by Eric A. Hanushek, Stephen Machin, and Ludger Woessmann. Elsevier, 2023. <https://doi.org/10.1016/bs.hesedu.2022.11.002>; Chetty, Raj, John N. Friedman, and Jonah E. Rockoff. "Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood." *American Economic Review* 104, no. 9 (2014): 2633–79. <https://doi.org/10.1257/aer.104.9.2633>. Backes, Ben. "The Importance of Teachers," in *Live Handbook of Education Policy Research*, in Douglas Harris (ed.), Association for Education Finance and Policy (2026). <https://livehandbook.org/k-12-education/workforce-teachers/the-importance-of-teachers/>.

²For example, see Gershenson, Seth, Michael Hansen, and Constance A. Lindsay. *Teacher Diversity and Student Success: Why Racial Representation Matters in the Classroom*. Harvard Education Press, 2021.

³Applications arguably provide a more meaningful measure of interest in teaching than admissions outcomes because admissions standards in many teacher education programs are, unlike some majors, not more selective than the admission standards of their home institution. As a result, many teacher education programs have high acceptance rates. See Drake, Graham, Christine Ellis, Amber Moorer, & Kate Walsh. (2021). *Teacher Prep Review: Program Diversity and Admissions* (2021). Washington, D.C.: National Council on Teacher Quality. www.nctq.org/publications/Teacher-Prep-Review:-Program-Diversity-and-Admissions-2021

⁴Some studies involved all five institutions in the project; others involved a subset.

⁵Measures of interest in teaching differ slightly across the three universities, depending on the information collected. For example, at one university, researchers combined responses from an academic interest survey with the "intended major" on the application to identify students interested in teaching. At another university, researchers used the "academic plan" reported in

the application. At the third university, researchers used the "intended major" field on the application; however, unlike the other two universities, the third university allowed students to list up to two intended majors. Researchers handled this in two ways: first, they constructed a measure that classified students as interested in teaching if they listed it in either major; second, they randomly selected one of the two majors and classified students based on that selection. In their main analyses, the researchers used the randomized measure for the third university.

⁶Early interest in teaching is, however, associated with greater teacher retention—a point we return to later in this brief.

⁷Most of these students signaled an interest in the humanities instead of teaching; the least likely students to be drawn to teaching while in college were those who signaled an early interest in science/engineering and business.

⁸See Edwards, Danielle Sanderson, and Matthew A. Kraft. "Grow Your Own: An Umbrella Term for Very Different Localized Teacher Pipeline Programs." *Educational Researcher* 54, no. 6 (2025): 339–47. <https://doi.org/10.3102/0013189X251333404>.

⁹See Edwards, Danielle Sanderson, Matthew A. Kraft, Alvin Christian, and Christopher A. Candelaria. "Teacher Shortages: A Framework for Understanding and Predicting Vacancies." *Educational Evaluation and Policy Analysis* 47, no. 3 (2025): 703–29. <https://doi.org/10.3102/01623737241235224>.

¹⁰The survey study did not test whether faculty preferences influenced who applied to or persisted in preparation programs. Instead, the study established a baseline of faculty preferences that provides context for a related study, described in this brief's final section.

¹¹The concern, common in social research, is that, when asked, faculty might emphasize criteria that sound rigorous or equitable even when those criteria do not drive their real world evaluations of candidates. See Nederhof, Anton J. "Methods of Coping with Social Desirability Bias: A Review." *European Journal of Social Psychology* 15, no. 3 (1985): 263–80. <https://doi.org/10.1002/ejsp.2420150303>.

¹²The survey also asked what faculty viewed as “red flags” in candidates; here the responses emphasized having deficit-based attitudes about specific student groups, negative attitudes toward culturally responsive or inquiry-based pedagogy, and a lack of professionalism.

¹³Above all else, faculty said they value interviews with candidates, although the survey did not ask them to specify what, in particular, they learned from interviews.

¹⁴For example, see Harris, Douglas N. and Tim R. Sass, “Teacher Training, Teacher Quality and Student Achievement,” *Journal of Public Economics* 95, no. 7 (2011): 798–812, <https://doi.org/10.1016/j.jpubeco.2010.11.009>

¹⁵See Ball, Deborah, Mark Hoover Thames, and Geoffrey Phelps. “Content Knowledge for Teaching: What Makes it Special?” *Journal of Teacher Education* 59, no. 5 (2008): 389-407.

¹⁶See Backes, Ben, Dan Goldhaber, Whitney Cade, Kate Sullivan, and Melissa Dodson. “Can UTeach? Assessing the Relative Effectiveness of STEM Teachers.” *Economics of Education Review* 64 (June 2018): 184–98. <https://doi.org/10.1016/j.econedurev.2018.05.002>.

APPENDIX: Project Overview and Paper Summaries

Project Overview

This project was a collaborative effort between the Center for Analysis of Longitudinal Data in Education Research (CALDER) at the American Institutes for Research (AIR), the Education Research and Data Center (ERDC) at the Washington State Office of Financial Management, and five Washington state IHEs: Central Washington University (CWU), Pacific Lutheran University (PLU), University of Washington (UW), Washington State University (WSU), and Western Washington University (WWU). The project built off prior relationships and research developed through the Teacher Education Learning Collaborative (TELC). Funding for the project was provided by the National Science Foundation (1950030).

University partners provided admissions data on all applicants to their university and/or their teacher education programs. Researchers connected these data to teacher workforce data, high school and college transcript data, admissions processes, and original survey data. The team addressed questions about the connections between the information collected about potential teachers before they enter a preparation program and their later outcomes, and whether this information reflects what faculty at the collaborating institutions valued.

Paper Summaries

Dan Goldhaber, Roddy Theobald, Amy Roth McDuffie, David Slavit, Jennifer M. Dechaine, John M. Krieg, Vivien Chen, Emma Dewil (2025). *The Beginning of the Teacher Pipeline: Which College Students Apply to Teacher Education Programs?* [CALDER Working Paper No. 328-0925](#).

This paper examines the start of the teacher pipeline and asks which students express interest in teaching at college entry and which ultimately apply to teacher education programs. Using application, transcript, and program data from 62,543 students across three universities, the authors estimate how demographics, academic preparation, and initial interests predict both stages. They find that initial interest in teaching is relatively low and that only a subset of interested students applies. Many applicants emerge from outside the initially interested group. They also find large and persistent demographic disparities, with female, White, and lower-SAT students more likely to enter the pipeline, and most sorting into teaching occurring before college entry.

Slavit, David, Amy Roth McDuffie, Nicole Griggs, Dan Goldhaber, and Roddy Theobald. "Faculty Perspectives and Values toward Mathematics and Science Content Information Used in Teacher Preparation Admissions Processes." *School Science and Mathematics* 124, no. 2 (2024): 93–110. <https://doi.org/10.1111/ssm.12627>

This paper examines how mathematics and science content information is used in admissions to teacher education programs and asks what information is collected, how faculty interpret it, and how it informs decisions. Drawing on document analysis and interviews across 31 programs at five universities, the authors analyze how different admission components reflect content-related qualifications. They find that programs rely heavily on broad indicators (coursework, GPA, and test scores) and collect limited information on applicants' deeper content knowledge and dispositions. Faculty report valuing more detailed, conceptually oriented knowledge and inquiry-based dispositions, but these are rarely captured in the admission process.

Roth McDuffie, Amy, David Slavit, Dan Goldhaber, Roddy Theobald, and Nicole Griggs. "Attention to Equity in Teacher Education Admissions Processes." *Journal of Teacher Education* 75, no. 3 (2024): 275–91. <https://doi.org/10.1177/00224871241230306>

This paper examines how admissions processes in teacher education programs address diversity and social justice, focusing on how programs collect and use information about applicants' backgrounds and orientations. Using document analysis and faculty interviews across 31 programs, the authors analyze how these issues are incorporated into recruitment, application components, and selection decisions. They find that all programs collect diversity and social justice-related information and that faculty broadly value diversifying the applicant pool. But practices vary widely in how explicitly these issues are assessed. Faculty also differ in how strongly these orientations factor into admissions decisions, suggesting programs vary in how they balance equity-related goals with other selection criteria.

Dan Goldhaber, Roddy Theobald, Amy Roth McDuffie, David Slavit, Jennifer Dechaine-Berkas, John M. Krieg, Emma Dewil (2024). *Shaping the STEM Teacher Workforce: What University Faculty Value about Teacher Applicants*. [CALDER Working Paper No. 295-0324](#)

This paper examines how admissions to STEM programs may shape the teacher pipeline by analyzing which applicant attributes faculty say they value and prioritize in decision-making. Using survey data and a conjoint experiment with 70 faculty across five universities, the authors compare stated preferences with revealed preferences. They find that faculty report valuing interviews, essays, and coursework while placing less weight on test scores, but in selection decisions they prioritize applicants with experience working with diverse students and those from marginalized backgrounds; academic indicators were less important. The survey also revealed that preferences vary across faculty roles, suggesting differing priorities in candidates within universities.

Dan Goldhaber, John Krieg, Roddy Theobald, Vivien Chen, Jennifer Dechaine-Berkas, Amy Roth McDuffie, David Slavit (2026). *Does Better Academic Preparation Predict Teacher Workforce Outcomes?* [CALDER Working Paper No. 346-0926](#).

This paper links comprehensive student data on university applications and transcripts from three public universities in Washington State to teacher workforce entry, effectiveness (measured by value-added), and retention. It finds that SAT scores are not strongly related to any of these outcomes, but college students with higher university GPAs are more likely to become teachers, and those who do are more effective in math and English language arts (ELA) value-added. These findings are robust to sample selection adjustments and to checks for selection into different college courses, school districts, and out of the teacher workforce. The relationship between GPA and teacher effectiveness is driven largely by grades in math courses designed specifically for teachers: performance in regular math courses does not predict effectiveness or retention, but the authors also find that teachers who take at least one advanced math course (400-level or higher) are more effective in both math and ELA than those who do not. Finally, they find that teachers who expressed interest in education at the time of university application are more likely to remain in the workforce once they enter than those who did not. Together, these results suggest that information from college applications and transcripts carries signals about future teacher effectiveness and retention.