

The Long and Winding Road: Mapping the College and Employment Pathways to Teacher Education Program Completion in Washington State

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Nationally, more than 75% of individuals who are credentialed to teach are prepared in traditional college- or university-based teacher education programs (TEPs). But the college and employment pathways that prospective teachers take to TEP enrollment and completion have not been comprehensively examined. A better understanding of how credentialed individuals find their way into TEPs helps us understand the sources of new teacher supply early in the prospective teacher pipeline. With that in mind, we analyze pathways into and through TEPs using historical postsecondary and unemployment insurance data from Washington State. We find that the pathways are quite varied, with around 40% of bachelor's-level TEP completers spending at least some time in community colleges and fewer than 40% enrolling and finishing at the same university directly after high school. Pathways to master's TEP completion are even more varied, with almost half of the completers having prior employment experience. For researchers, this varied landscape raises important questions about the relationship between pathways, candidate persistence, and eventual job performance. For policymakers, the results suggest that efforts to recruit the next generation of teachers need to look beyond the pool of students already enrolled at a 4-year university to include students at 2-year colleges or in the labor force who might be interested in entering a TEP.

Keywords: descriptive analysis; educational policy; teacher education/development; teacher research

Teacher shortages are a pressing education policy concern, as highlighted by a recent \$2.6 billion initiative from the U.S. Department of Education to “prepare, support, and retain high-quality educators” with the goal of “eliminating the teacher shortage” (Cardona, 2023). There is also concern that the prestige of the teaching profession has been sliding; in 2018, for instance, polling indicated that for the first time, a majority of parents stated that they did not want their children to pursue teaching as a career (Will, 2018).

Considerable effort has gone toward recruiting the next generation of teachers from current high school and even middle school students. For instance, the Education Commission of the States (2022) identified 32 of the 50 states as having programs in which high school and college students are provided incentives to pursue a teaching career; for example, the Developing Future Special Educators grants in Pennsylvania provide funding for experiential learning opportunities in high schools and universities to encourage students to pursue a career as a special education teacher (Theobald et al., 2023). These programs operate under the implied assumption that future teachers are most

likely to be found either very early in their educational journeys (e.g., in high school) or already enrolled in 4-year colleges and universities.

This assumption makes some sense given that the backbone of the teaching profession continues to be graduates of traditional, university-based teacher education programs (TEPs). As of 2020–2021 (the most recent year of Title II data), among those entering the teacher workforce nationwide, the share of traditional program completers was 76%. This reliance on university programs has been particularly true in Washington, which until 2018–2019 had no alternative paths to certification outside of accredited universities and where more than 95% of new in-state credentials originated from university-based TEPs (see Figure 1).

However, due to severe data limitations about the early teacher pipeline (see Goldhaber & Holden, 2021; Kraft & Lyon,

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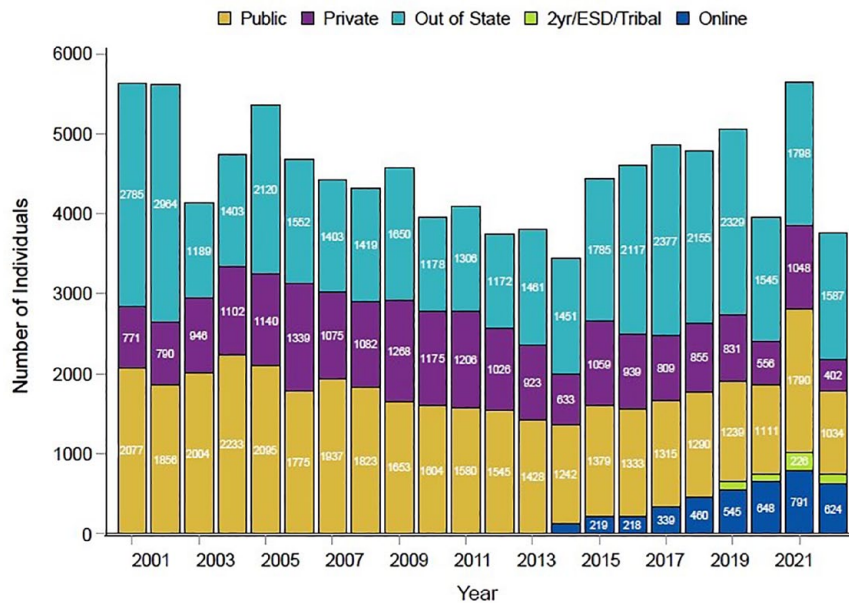


FIGURE 1. *Number of initially certificated individuals from various credentialing sources in Washington State over time.*
Note. This figure shows annual counts of the number of individuals credentialed in Washington State between 2001 and 2022 by credentialing source. Credentialing sources include public institutions (“Public”); private institutions (“Private”); online institutions (“Online”); 2-year colleges, Educational Service Districts, or Tribal institutions (“2- yr/ESD/Tribal”); and institutions located outside of Washington State (“Out of State”).

2022), there is little empirical evidence about individuals’ educational and career trajectories (which we call their “pathways” to teacher certification as opposed to specific traditional or alternative “routes” to certification) prior to completing a TEP. This is problematic because we do not know where to target the recruitment of new teachers, including understanding the degree to which individuals are eligible for incentives to become teachers through recruitment programs, like the federal TEACH Grant Program (Federal Student Aid, 2022). In other words, efforts to influence the number or composition of teachers early in the teacher pipeline should be informed by a thorough understanding of the pathways that teacher candidates typically take to TEP completion.

In this article, we provide the first large-scale empirical evidence of TEP graduates’ prior educational and employment pathways leading into the institutions housing their TEPs. Our findings show that direct paths from either high school to a 4-year college or from earning a bachelor’s degree to a graduate institution are the single most frequented pathways into one’s TEP institution. Yet fewer than half of new teachers followed direct paths because the pathways into teaching are diverse. For instance, about 40% of bachelor’s-level TEP completers spent at least some time in community colleges, and almost half of master’s-level completers entered their programs from prior employment. Given findings such as these, efforts to recruit the next generation of teachers arguably need to look beyond the pool of students in high school or already enrolled at a 4-year university to include students at 2-year colleges or in the labor force who might be interested in entering a TEP. This could be particularly important considering the extent to which efforts to recruit new teachers are targeted specifically at undergraduates (Quader, 2023; Rural School Teacher Talent Program, 2017).

Background

Concern over teacher shortages—whether argued to be massive and widespread (Berry & Shields, 2017; Sutchter et al., 2019) or concentrated in hard-to-staff subject areas and grade levels (Cowen et al., 2016; McVey & Trinidad, 2019)—is not new. Nor are shortages an isolated measure of the declining health of the teaching profession. Indeed, recent research has found that related factors—such as interest in becoming teachers by high school seniors and college freshmen, the number of new entrants into the profession, teachers’ professional prestige, and teachers’ job satisfaction—are at or near historically low levels (Kraft & Lyon, 2022).

Policy solutions that focus on increasing teacher supply are many and varied. For example, strategies such as reducing barriers to entry (e.g., alternative routes to certification, loan forgiveness), improving teacher working conditions (e.g., more autonomy, opportunities for advancement, on-the-job support), and increasing teacher compensation are intended to lure potential candidates into teaching (for a review, see Podolsky et al., 2019). These remedies, however, are intended to alleviate certain pinch points in the teacher pipeline that are “downstream” from initial interest in teaching—that is, they are aimed at either enticing people who have enough of an interest in teaching to pursue it as a profession or retaining existing teachers.

Moreover, most research on teacher supply is based on people who already have committed to teaching, as evidenced by their being enrolled in a TEP (Bartanen & Kwok, 2023; Goldhaber et al., 2014, 2020; Vagi et al., 2019). And although TEPs are a critical part of the teacher pipeline, research is lacking on the earlier part of it when it comes to understanding what attracts people to the profession in the first place.

One crucial limitation to such investigations is the lack of available data able to connect one's interest in teaching and their potential future teaching outcomes. A recent exception is Bartanen and Kwok's (2023) study using admissions data (which includes information about a student's intention to pursue teacher certification) and TEP records from one public university in Texas to look at the pipeline into TEPs and examine those who expressed interest in becoming a teacher, those who entered the TEP, and those who eventually entered the profession. Likewise, recent work from Massachusetts (Rucinski & Goodman, 2019) and Michigan (Kilbride et al., 2023) tracked potential teachers through various stages of the preparation and licensure pipeline and documented specific pinch points for overall teacher supply and teacher workforce diversity in particular.

Research Questions

This study complements Bartanen and Kwok's (2023) work most closely in that we too look at the early teacher pipeline into TEPs. However, instead of following high school students forward from "interest to entry" within a single institution, we look back for samples of graduates from an entire state who earned degrees in education to see what types of institutions they came from before they entered the TEP institution from which they eventually graduated. We envision the various pathways that people took into teaching as being broadly characterized as "direct" or "indirect." Those who took direct pathways entered bachelor's-level TEP institutions immediately after high school or master's-level TEP institutions immediately after completing their undergraduate work. In contrast, those who took a more indirect path spent time in 2-year colleges, other 4-year institutions, and/or employment before entering TEP institutions. We contend that this is an overlooked yet important part of the early teacher pipeline because such information can inform early recruitment efforts into teaching. Programs like Troops to Teachers and Grow Your Own, for example, have shown targeted recruitment efforts to be an effective strategy for solving teacher shortages and increasing the diversity of the pipeline (General Accounting Office, 2001, 2006; Gist et al., 2019; Owings et al., 2015).

We used historical postsecondary and unemployment insurance data from Washington State to study the pathways into and through TEP institutions and show how credentialed individuals progressed through their high school, college, and employment histories toward completing such programs in the state. To this end, we attempt to answer the following questions:

Research Question 1: What college pathways did credentialed individuals take on their way to earning their teaching credential?

Research Question 2: How do these college pathways differ across education level (bachelor's vs. master's degrees) and teaching endorsements?

Method

Policy Context

Because teacher preparation and licensure are state functions, it is not surprising to see the teacher preparation infrastructure

differ across states. In Washington State, several aspects of this infrastructure are worth noting. First, Washington relies heavily on traditional routes to teacher certification. During the years we examined (2014–2017), Washington had TEPs in eight public and 14 private institutions of higher education (IHEs), a ratio that mirrored the national average.¹ And although between seven and 10 of these IHEs offered alternative routes to certification during that time frame, fewer than 6% of graduates came through an alternative IHE-based route in any given year.² Notably, no non-IHE-based alternative routes were offered in the state during this time period.

Second, in Washington, more than half of in-state credentialed individuals came from public TEPs (between 52% and 62%) in any given year (see Figure 1). Because this study only examined graduates from those institutions, it does not consider anyone credentialed in state at private institutions (between 32% and 40%) or anyone credentialed outside the state (between 41% and 49% of all credentialed individuals for our time period).

Third, Washington's articulation agreements—like those in most states—aim to smooth transitions that students make between the state's community/technical colleges and 4-year universities. This means that such institutions have agreed which lower division courses are equivalent to a year's worth of general education credits and would be accepted at any transferring 2- or 4-year institution within the state. It also means that anyone who earned an associate degree from a 2-year college would effectively enter a 4-year institution as a junior.

Data

Our main sources of data are provided by Washington State's Education Research and Data Center (ERDC), which administers the Public Centralized Higher Education Enrollment System (PCHEES). PCHEES records students' last (i.e., graduating) high school and their postsecondary academic histories at 2- and 4-year public institutions within the state. ERDC also maintains employment records for those covered by Washington state's unemployment insurance (UI) program, which covers all workers in the state except the self-employed and federal workers. We use these data to identify two groups of people: (a) those employed by the public K–12 education system and (b) those employed outside of it. Unfortunately, the ERDC data only include students who attended public 2-year and 4-year colleges, so we are unable to address the pathways of individuals who attended private colleges for their teacher preparation and credentialing.³

Finally, we incorporate two other sources of data from Washington's Office of the Superintendent of Public Instruction (OSPI). First, we use the S-275, an annual employment reporting system for all public school employees in the state as of October 1. These data allow us to create indicators for holding a teaching position or other position requiring certification on that date in each year. Thus, for individuals we identify (from UI data) as being employed inside K–12 education, we further parse out those who were employed as teachers. Second, OSPI collects endorsement data, which we use to identify endorsement(s)—indicating which grades and subject areas individuals are deemed credentialed to teach—obtained by individuals with a teaching credential.

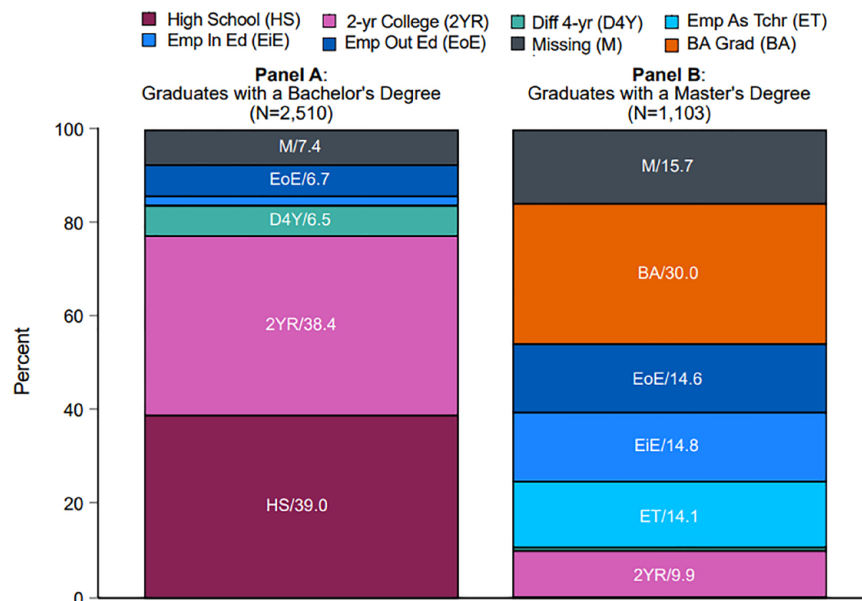


FIGURE 2. *Prior statuses of graduates in the year before entering their graduation institution, by degree.*

Note. This figure shows the educational enrollment or employment status for individuals in the sample, by degree, 1 year prior to entering their degree-granting undergraduate or graduate institution. For bachelor’s graduates, these statuses include being enrolled in a public high school (“High School”), a 2-year college (“2-yr College”), or a 4-year university different from the one from which they graduated (“Diff 4-yr”); being employed as a teacher (“Emp As Tchr”), a nonteacher within the K–12 system (“Emp In Ed”), or outside of education (“Emp Out Ed”); or being unobserved in the data (“Missing”). Master’s-level graduates are sorted into an additional category, that is, having just graduated from an undergraduate program in Washington State (“BA Grad”). In this context, for either degree, active enrollment is a mutually exclusive category to actively working. That is, we consider a person’s annual employment status only after they are known to not be enrolled in any high school or college.

We received PCHEES and UI data spanning the 2007–2008 through 2016–2017 school years. To ensure that we observe at least 6 years of data prior to each candidate’s completion of a TEP, our sample consists of 3,605 unique credentialed individuals—70% of whom graduated with a bachelor’s ($n = 2,510$) and 30% with a master’s degree ($n = 1,103$) in education from 4-year public universities in Washington between 2014 and 2017.⁴ In building the data set, for each credentialed individual, we look back 6 years prior to their graduation and annually observe where they were enrolled (i.e., public high school, public 2-year college, public 4-year university) and whether they were employed (i.e., at all, as a teacher, as a nonteacher in education, or outside education). Hence, we construct a lengthy retrospective picture of the pathways that credentialed individuals took on their way to graduating from a TEP and receiving their initial teaching credential.⁵

Results

Prior Pathways by Degree Type

In Figure 2, we report the educational enrollment or employment status for credentialed individuals in our sample 1 year prior to entering their degree-granting undergraduate or graduate program. For bachelor’s graduates, these statuses include being enrolled in a public high school, a 2-year college, or a 4-year university different from the one where they were degreed; being employed as a teacher, a nonteacher within the K–12 system, or outside of education; or being unobserved in the data.

Master’s-level graduates are sorted into an additional category, that is, having just graduated from an undergraduate program in Washington State.

For graduates who completed a TEP with a bachelor’s degree (Figure 2A), a direct pathway to TEPs, that is, enrollment in high school in Washington, was the single most common prior status (39%). Yet all other known (i.e., nonmissing) prior statuses taken together reveal that most individuals (53.5%) took an indirect path to TEP institutions. The percentage of individuals who came from 2-year colleges (38.4%) is nearly equal to those coming from high schools. An additional 6.5% were enrolled in a different 4-year institution from where they eventually earned their credential, and still more were employed either outside of education (6.7%) or within the K–12 system (1.9%), likely as paraeducators. A final group is missing (7.4%)—and the people in it are not considered as taking any particular pathway to a graduating TEP—but consists of some combination of individuals who moved to Washington to begin their 4-year program, lived in the state but attended a private college, were unemployed, or were employed in a sector not captured by the UI data.

Unsurprisingly, the prior statuses of students in master’s programs (Figure 2B) differed from those who earned undergraduate degrees. Yet similar percentages of individuals took direct versus indirect pathways to their graduating TEP institutions. Thirty percent of MA graduates took direct pathways, that is, entered the year after earning a BA, and other known statuses show that most (54.4%) took indirect paths. Nearly 80% of

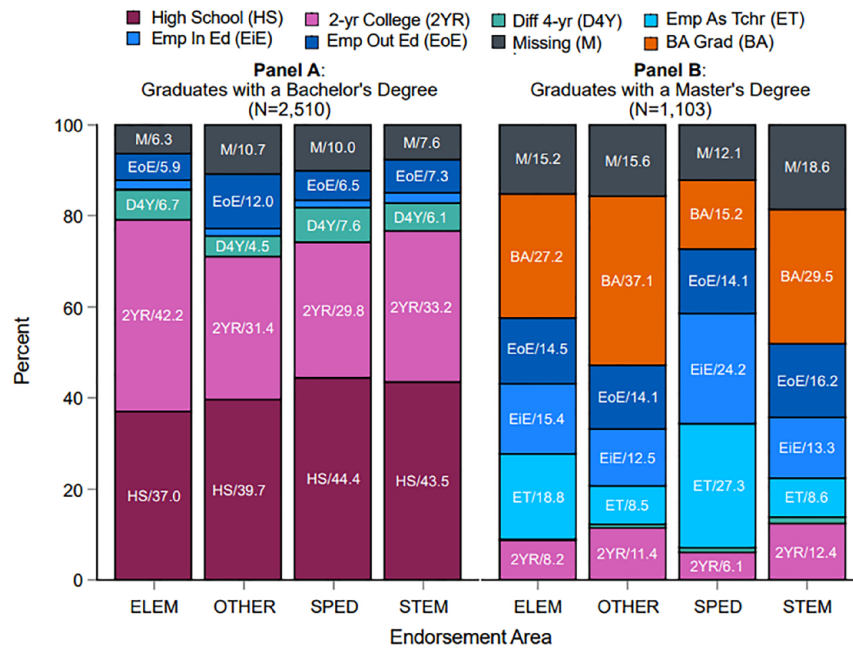


FIGURE 3. *Prior statuses of graduates in the year before entering their graduation institution, by degree and endorsement.*

Note. This figure shows the educational enrollment or employment status for individuals in the sample, by degree and endorsement area, 1 year prior to entering their degree-granting undergraduate or graduate institution. For bachelor’s graduates, these statuses include being enrolled in a public high school (“High School”), a 2-year college (“2-yr College”), or a 4-year university different from the one from which they graduated (“Diff 4-yr”); being employed as a teacher (“Emp As Tchr”), a nonteacher within the K–12 system (“Emp In Ed”), or outside of education (“Emp Out Ed”); or being unobserved in the data (“Missing”). Master’s-level graduates are sorted into an additional category, that is, having just graduated from an undergraduate program in Washington state (“BA Grad”). Endorsement areas include elementary education (“ELEM”); special education (“SPED”); science, technology, engineering, and math (“STEM”); and all other endorsements (“OTHER”). Note that there is considerable overlap between holding a STEM or SPED endorsement and an ELEM endorsement. Indeed, 63% of people with a STEM endorsement and 75% of those with a SPED endorsement also held an ELEM endorsement. Individuals with dual endorsements were coded prioritizing their STEM and SPED endorsements. For example, people with both a STEM and an ELEM endorsement were coded as STEM-endorsed. Individuals with both a SPED and an ELEM endorsement were coded as SPED-endorsed. Thus, those we categorize as ELEM-endorsed do not reflect all ELEM-endorsed individuals but those who had an ELEM endorsement only. The eight people with both STEM and SPED endorsements were coded as STEM-endorsed. The percentages of individuals by endorsement area are STEM (10.4%), SPED (14.7%), ELEM (65.2%), and other (9.6%).

indirect pathways were taken by those previously employed—percentages nearly evenly split between employment categories. The remaining individuals with known prior statuses entered TEP institutions from 2-year colleges (9.9%) and different 4-year universities (<1%). Finally, nearly twice as many master’s graduates (15.7%) as bachelor’s graduates (7.4%) were unobserved in our data.

Prior Statuses by Degree and Endorsement

To examine how college pathways differ by the type of teaching endorsement graduates obtained, we group endorsements into four categories: science, technology, engineering, and math (STEM); special education (SPED); elementary education (ELEM); and all other endorsements (other). We create mutually exclusive categories so that each person has a single endorsement by prioritizing STEM, then SPED over ELEM, and then other endorsements. Figure 3 replicates Figure 2 and groups graduates into the endorsement areas they earned when first

certified as teachers. Interestingly, for students who earned a bachelor’s degree, higher percentages of STEM (43.5%) and SPED (44.4%) teachers went directly from their experiences as high school students into their TEP institutions compared to those who earned an elementary endorsement (37%). In contrast, those who earned an elementary endorsement were more likely to have attended a 2-year college immediately before entering their education program than candidates with endorsements in other fields.

The pathways for master’s candidates also differ by endorsement. SPED-endorsed teachers were much more likely (between 1.5 and 3.2 times) to have worked as a teacher or to have been employed in education as a nonteacher (between 1.6 and 1.9 times) than those in other fields. Interestingly, the other-endorsed master’s students were more likely to have arrived in their program directly from their bachelor’s program (by between 1.3 and 2.4 times) than were those in other fields.

At the BA level, graduates endorsed to teach in hard-to-staff subjects (i.e., STEM and SPED) were more likely to enroll in

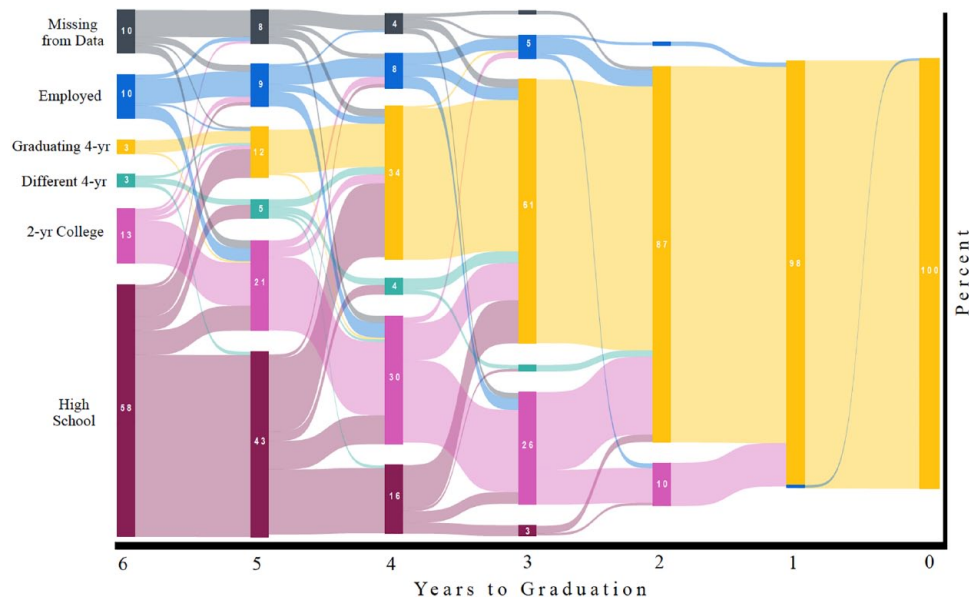


FIGURE 4. *Academic and employment histories of graduates who earned a bachelor's in education from 2014-2017.*

Note. This figure shows the educational enrollment and employment statuses for bachelor's degree-earners up to six years before graduating from their teacher education programs. Statuses include being enrolled in a public high school ("High School"), a 2-year college ("2-yr College"), the same 4-year university from which they graduated ("Graduating 4-yr"), or a 4-year university different from the one from which they graduated ("Different 4-yr"); being employed ("Employed"); or being unobserved in the data ("Missing from Data"). The right column consists of all, or 100%, of the 2,510 candidates who received their bachelor's degree between 2014 and 2017. Read the figure from right to left to trace where people in any given category came from the year before. Note that in some years, the percentages across the categories do not sum to 100. There were several year-to-year transitions taken by 10 or fewer individuals that we have omitted from the plots. However, the percentages shown in each category in a given year are reflective of all individuals in that category even if they entered that category via a transition that was omitted due to its size.

their TEP institution directly after high school rather than take any indirect pathway. This pattern holds for MA-level STEM-endorsed graduates. In contrast, SPED-endorsed MA-level graduates were more likely to come from the labor market. Regardless of degree, ELEM-endorsed graduates were more likely to take an indirect path to their TEP institution.

Annual Transitions Prior to Credential

An alternative way of analyzing pathways is to use a Sankey diagram to show graduates' transitions between education and employment categories over time as they progress toward graduation and their initial teaching credential. In Figures 4 and 5, we plot statuses for the 6 years prior to each candidate's graduation from a public 4-year university with a bachelor's or master's degree between 2014 and 2017. The stacked bars for each year represent the percentage of graduates who were observed in each category for each of the 6 years before graduation, whereas the width of the path between each segment of the stacked bars represents the percentage of graduates who transitioned between the different categories from year to year.

Next consider Figure 4, which presents bachelor's-level graduates. We track this group over time for the same categories we discussed previously except that we collapse employment into a dichotomous category (employed vs. not employed) and include a category indicating whether a person is enrolled in the same 4-year university from which they graduated. The right-most

column consists of all, or 100%, of the 2,510 graduates who received their bachelor's degree between 2014 and 2017.

Moving from right to the left (i.e., back in time), one can trace the histories of what people in this group were doing each year prior to graduation. Unsurprisingly, the year before graduating, most were enrolled in the program from which they ultimately graduated. However, continuing to move back in time, one can see substantial flows of people into either their ultimate bachelor's program or into 2-year programs that transitioned into bachelor's programs.

What Figure 4 adds to our understanding is how the percentage of people coming from direct and indirect paths to their graduating institution varies over time. In early transitions (5 and 4 years before graduation) 72% of all initial entrants into graduating institutions came directly from high school, whereas around 22% entered via indirect paths. Yet in the 3 years before graduation, nearly four out of five initial entrants into graduating institutions (79%) came from indirect paths—most of them from 2-year colleges—whereas fewer than one in five students took a direct path (16%).

In Figure 5, we show a Sankey diagram for MA earners. The categories shown are similar to those discussed previously with one exception—to reduce unnecessary complexity, we group all of the academic institutions where a person was enrolled and all of the sectors in which they were employed before earning their bachelor's into a new single category (i.e., "pre-BA" statuses) shown in purple. As in Figure 4, the right column of Figure 5

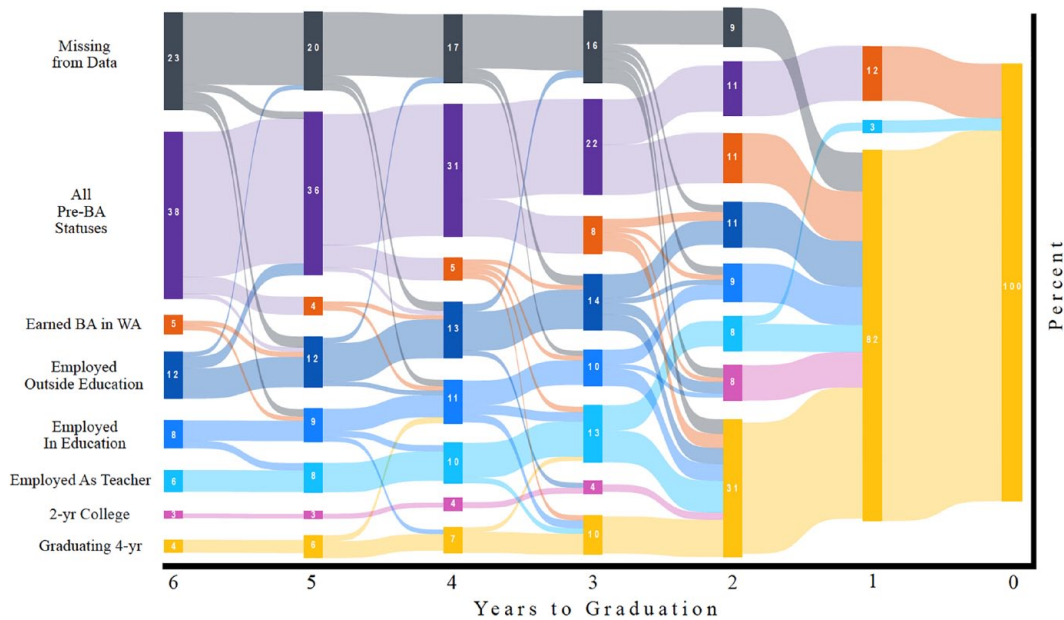


FIGURE 5. *Academic and employment histories of graduates who earned a master's in education from 2014 to 2017.*

Note. This figure shows the educational enrollment and employment statuses for master's degree earners up to 6 years before graduating from their teacher education programs. Statuses include being enrolled in the same 4-year university from which they graduated ("Graduating 4-yr") or a 2-year college ("2-yr College"); being employed as a teacher ("Employed As Teacher"), a nonteacher within the K–12 system ("Employed In Education"), or outside of education ("Employed Outside Education"); all academic institutions and employment sectors before earning a bachelor's degree ("All Pre-BA Statures"); or being unobserved in the data ("Missing from Data"). The right column consists of all, or 100%, of the 1,103 candidates who received their master's degree between 2014 and 2017. Read the figure from right to left to trace where people in any given category came from the year before. Note that in some years, the percentages across the categories do not sum to 100. There were several year-to-year transitions taken by 10 or fewer individuals that we have omitted from the plots. However, the percentages shown in each category in a given year are reflective of all individuals in that category even if they entered that category via a transition that was omitted due to its size.

consists of all of the 1,103 candidates who earned their master's degree between 2014 and 2017. Because master's programs are much shorter in length than bachelor's programs (typically 1 year), we see transitions to one's graduating institution generally occurred much later, that is, closer to graduation, than for bachelor's candidates. Indeed, nearly all (90%) of the initial transitions into one's graduating master's institution occurred in the 2 years before graduation.

On average, during those 2 years, 18% of initial entrants to their graduating TEP institutions took a direct path—that is, enrolled immediately after earning a BA from a public 4-year institution. Yet during that same time, on average, nearly 4 times as many people (67%) took an indirect path—most entering from the labor market.

Discussion

Overview of Findings

In summary, taking a direct path to one's TEP institution was not the norm. For our full sample, we find that roughly one-third of graduates (36%) took a direct path to TEP completion, whereas over half (54%) took an indirect path. When considering pathways by degree level, the results are consistent. Of bachelor's-level TEP graduates, fewer than 40% took a direct path (i.e., entered their TEP institution directly from high school), whereas over half (53.5%) took an indirect path—the majority of whom

(71%) came from 2-year colleges. A similar pattern of path-taking exists for master's-level graduates in that 30% entered their TEP institution directly after earning a BA, whereas more than half (54.4%) took an indirect path—the majority of whom (80%) entered from the labor market.

We also document substantial variation across endorsement areas within degree types. Among bachelor's graduates, those with an elementary endorsement were more likely to have entered their TEP institution from a 2-year college, whereas those with a SPED or STEM endorsement were more likely to have come directly from high school, and those with an other endorsement were more likely to have come from the labor market. Among master's graduates, those with a SPED endorsement were more likely than any other endorsement group to have entered their TEP institution directly from the labor market, three-quarters of whom had worked in education the previous year. Those with any other endorsement were more likely to have come directly from a bachelor's program, especially those with an other endorsement.

Limitations

Given state-to-state variation in educational infrastructure—for example, relative enrollments in public and private colleges, the prevalence of 2-year colleges, articulation agreements, and reliance on traditional versus alternative routes of teacher preparation and licensure—the findings in this study may not generalize

to other states. Even within Washington State, we cannot assess the landscape for all TEP graduates because our sample is limited to those from public TEPs. What is more, within our sample, we cannot observe the educational or employment histories of those who were enrolled or employed outside of Washington State before entering their graduating institution. Nor can we follow individuals forward in time from when they began a particular pathway because our sample is limited to credentialed individuals for whom we can only construct a retrospective picture. Lastly, the timing of this study predates the implementation of non-IHE alternative routes to gaining a teaching credential in the state and a global pandemic—both of which have seriously impacted various aspects of teacher preparation and the teaching profession. These are all fertile grounds for future research.

Policy Implications

First, our research highlights the need for data partners to redefine or clarify definitions of college pathways to certification because current definitions (e.g., alternative, residency, apprenticeship) do not clearly reflect the variety of pathways we have documented in this analysis. Such changes could make it easier for researchers to track pathways more accurately and to provide continuous, consistent, coherent feedback to data partners as they implement various supports to program development along the teacher pipeline.

Second, our research suggests we ought to expand our understanding of teacher shortages to include “upstream” and “downstream” solutions. That is, policies should be designed to attract as well as “prepare, support, and retain high-quality educators” (Cardona, 2023). And although other researchers have pointed out that TEPs could rather easily emphasize recruiting from within their college or university (Bustos Flores et al., 2007), we add that TEPs should go one step further back in the pipeline to recruit people from 2-year colleges, especially in places—like Washington State—where a large proportion of people who ended up graduating from TEPs flowed through such colleges.

Furthermore, designing targeted recruitment plans based on past trends in how TEP graduates moved through college or employment to become credentialed could be used to address specific subject-area shortages. Just as any angler worth their salt knows that you do not fish for pike in the ocean or for tuna in the river, having information on graduates’ pathways to TEP completion could help education policymakers determine where to focus recruitment efforts. For example, this study suggests that (at least in Washington State) efforts to recruit more master’s-level special education teachers may prove most efficient when directed at people in the labor market, especially those already employed in the field of education.

In addition, our findings suggest some areas for future research. In particular, we know very little about the differences in teacher effectiveness, job retention, or job satisfaction between teachers who arrive at their TEP institution via a direct versus indirect path. Under the possible scenario that teachers coming from indirect pathways are more effective or retain into teaching longer, there is additional motivation to expand recruitment efforts into these areas.


Lastly, because there is some evidence that many students who start college in an education major end up in teacher

education and that navigating an efficient path to certification is often difficult (Bartanen & Kwok, 2023), recruitment efforts might be buttressed by support from TEPs to ease students’ path to certification and the teacher workforce. Targeted recruitment alongside TEP support could ignite an early interest in teaching as a profession and increase the number of people who enroll in teacher preparation programs and eventually become credentialed as teachers. But at the same time, we know relatively little about the efficacy of recruitment efforts designed to increase the persistence of those with an interest in teaching. These are fruitful avenues for future work.

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NOTES

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¹Note that 2015 is the most recent school year for which a crosswalk between programs listed in Title II and the Integrated Postsecondary Education Data System (IPEDS) is available (see <https://title2.ed.gov/Public/DataTools/Files.aspx>). In that year, only 79% of the programs listed in Title II could be matched to IPEDS. Of those, 62% were private institutions, and 38% were public institutions.

²Based on Title II annual state reports (see <https://title2.ed.gov/Public/Home.aspx>).

³Fewer credentialed individuals came from private colleges than public ones. During our time period, an average of roughly one-third of in-state teaching credentials were awarded to those from private TEPs. This percentage holds more broadly in that merged Title II and IPEDS data from 2015 show that a national average of 34% of program completers came from private TEPs.

⁴Eight people in our sample earned a bachelor’s and master’s degrees during the time period we analyze. Although we report outcomes for grouped years (2014–2017), results are similar in any given year. Master’s completers may be a combination of people who earned an initial credential and those who returned to school to add a degree or an endorsement. Because the ERDC data are restricted to individuals who earned a teaching credential and are then merged to college enrollment and employment data, we cannot include people who started down a particular pathway and then dropped out before graduating from a TEP.

⁵Because the step between graduating from a TEP and obtaining an initial teaching credential is nominal (i.e., a background check by the state education office) and our sample only includes credentialed individuals whom we know (retrospectively) were graduates from public TEPs, we use the terms “graduates” and “credentialed individuals” interchangeably.

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