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Why Do You Want to Be a Teacher? A Natural Language Processing Approach

Brendan Bartanen
University of Virginia

Andrew Kwok
The Common Application

Andrew Avitabile
University of Virginia

Brian Kim
Texas A&M University

Heightened concerns about the health of the teaching profession highlight the importance of studying the early teacher pipeline. This exploratory, descriptive paper examines preservice teachers' (PST) expressed motivation for pursuing a teaching career and its relationship with PST characteristics and outcomes. Using data from one of the largest teacher education programs in Texas, we use a natural language processing algorithm to categorize into topical groups roughly 2,800 essay responses to the prompt, "Explain why you decided to become a teacher." We identify 11 topics that largely reflect altruistic and intrinsic (though not extrinsic) reasons for teaching. The frequency of motivation topics varied substantially by PST gender, race/ethnicity, and certification area. While topics collectively explained little of the variance in PST outcomes, we found preliminary evidence that intrinsic enjoyment of teaching and prior experiences with adversity predicted higher performance during clinical teaching and lower attrition as a full-time K–12 teacher.

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Brendan Bartanen[1], Andrew Kwok[2], Andrew Avitabile[1], and Brian Kim[3]

[1]University of Virginia

[2]The Common Application

[3]Texas A&M University

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Abstract

Heightened concerns about the health of the teaching profession highlight the importance of studying the early teacher pipeline. This exploratory, descriptive paper examines preservice teachers' (PST) expressed motivation for pursuing a teaching career and its relationship with PST characteristics and outcomes. Using data from one of the largest teacher education programs in Texas, we use a natural language processing algorithm to categorize into topical groups roughly 2,800 essay responses to the prompt, "Explain why you decided to become a teacher." We identify 11 topics that largely reflect altruistic and intrinsic (though not extrinsic) reasons for teaching. The frequency of motivation topics varied substantially by PST gender, race/ethnicity, and certification area. While topics collectively explained little of the variance in PST outcomes, we found preliminary evidence that intrinsic enjoyment of teaching and prior experiences with adversity predicted higher performance during clinical teaching and lower attrition as a full-time K–12 teacher.

Why Do You Want to Be a Teacher? A Natural Language Processing Approach

Introduction

Policymakers have long been concerned about the recruitment and retention of high-quality and diverse teachers for K–12 public schools. While metrics have ebbed and flowed over time (Kraft & Lyon, 2022), there is a renewed worry that teaching is becoming a less attractive career path for college students (Bartanen & Kwok, 2022; Croft et al., 2018; Partelow, 2019) and that the COVID-19 pandemic amplified pre-existing challenges like poor working conditions (Bacher-Hicks et al., 2023). Particularly in harder-to-staff contexts and positions, elevated turnover rates combined with inadequate teacher supply undermines the quality of instruction received by students (e.g., Lankford et al., 2002; Ronfeldt et al., 2013). For researchers, it is critical to deepen understanding of the early teacher pipeline to inform both policy and practice towards ensuring a robust supply of new teachers.

A key dimension of the teacher pipeline is interest: why do individuals choose to pursue a teaching career? Understanding teacher motivation can inform policy and practice concerning teacher recruitment—both whom to target and how to do so effectively. Given high rates of attrition among novice teachers (Redding & Nguyen, 2020), teacher motivation may also help to explain why some teachers persist longer than others (Johnson & Birkeland, 2003), which could point to effective retention strategies. Finally, motivation may also link to effectiveness as a classroom teacher (Goldhaber & Ronfeldt, 2020; Guarino et al., 2006). Teacher quality is notoriously difficult to predict, particularly among novices who enter the profession with a wide range of skills, training, and prior experiences. Exploring personality or "non-resume" characteristics, such as motivation, could help to explain variation in teacher quality (e.g., Parr et al., 2021).

Despite its importance, there remains relatively little work examining differences in teacher motivation by individual characteristics and connecting motivation to outcomes like retention and effectiveness. This paper examines essay responses of roughly 2,800

preservice teachers (PSTs) to the following prompt: "Explain why you decided to become a teacher." To process and analyze these text data, we apply an approach—computational grounded theory (Nelson, 2020)—that marries natural language processing with qualitative exploration to produce a set of indicators for whether a particular motivation topic appears in a PST's essay. This approach allows us to process a large sample of essays while retaining the rich nuance of PSTs' motivation descriptions. We then link these topic indicators with rich longitudinal data on PSTs to conduct a descriptive analysis that examines the relationship between PST motivation and their background characteristics, certification program area, performance in the teacher education program, and workforce outcomes. To be specific, we ask the following research questions:

1. What are PSTs' expressed reasons for wanting to become a teacher?
2. To what extent does motivation to teach vary by PSTs' observable characteristics, such as demographics, family background, and certification area?
3. To what extent does PST motivation predict subsequent outcomes, including measures of teaching effectiveness, full-time employment, and retention?

Background

Why Teach?

Researchers have long been interested in why people become teachers (e.g., Jantzen, 1947, 1981). Review studies (Brookhart & Freeman, 1992; Fray & Gore, 2018; Han & Yin, 2016; Heinz, 2015; Richardson & Watt, 2010) broadly categorize three "types" of teacher motivation: altruism (the desire to do selfless good), intrinsic motivation (an enjoyment of teaching, helping, or interacting with students or children), and extrinsic motivation (the pecuniary and non-pecuniary benefits of the job, such as salary, time off, stability, etc.). Among these, altruism and intrinsic motivation tend to be predominant reasons cited by

prospective teachers (Brookhart & Freeman, 1992).[1] In addition to these broad motivation types, specific experiences or characteristics may also influence the decision to become a teacher (e.g., Roloff Henoch et al., 2015).[2]

Teacher motivation may vary by individual characteristics. For example, some prior research finds that women were more attracted to the profession by intrinsic motivation (Moran et al., 2001) and the relational and developmental aspects of teaching (Müller et al., 2009; Struyven et al., 2013). Other studies have shown that teachers of color were motivated by an awareness of educational inequalities and a desire to improve society (King, 1993; Su, 1997). Finally, prior work suggests that elementary teachers' motivations tend to be child-centered and secondary teachers' subject-oriented (Brookhart & Freeman, 1992; Kwok et al., 2022).

Survey research forms much of the evidence base (Brookhart & Freeman, 1992). Notably, Richardson and Watt (2006) created and subsequently validated the Factors Influencing Teaching Choice (FIT-Choice) scale based on open-ended motivation responses across multiple Australian contexts (Richardson & Watt, 2006; Watt & Richardson, 2007). Much of the recent work uses this measure, which includes seven dimensions of teacher motivation. One of these dimensions is national context (Lin et al., 2012; Watt et al., 2012), which underscores the potential importance of country-specific context for teacher motivation and suggests the incomplete generalizability to the U.S. context of results derived from international samples. There are comparatively few studies examining U.S. PSTs and they are typically smaller-scale, qualitative studies (Brookhart & Freeman,

[1] A more recent review of the teacher motivation literature also finds that studies report altruistic and intrinsic motivation as key influences, but note that extrinsic motivation may also play an important role in people's decision to enter teaching, especially in non-western countries Fray and Gore (2018).

[2] Specifically, prior studies document that previous teaching experiences, family connections to the profession, social interests, job conditions, and career expectations are important determinants for entry to the profession (Heinz, 2015; Klassen et al., 2011; Roloff Henoch et al., 2015). For instance, Parr et al. (2021) used mixed methods to highlight intrinsic value for teaching, generally, and for their content area, specifically, as reasons given by in-service teachers for why they entered the profession. Similar reasons have been identified in studies examining PSTs during (Bullough & Hall-Kenyon, 2011; Hong et al., 2018; Manuel & Hughes, 2006; Reeves & Lowenhaupt, 2016; Thomson & Palermo, 2014) and prior to (Klassen et al., 2011; Manuel & Hughes, 2006; Roloff Henoch et al., 2015) entering teacher preparation programs.

1992), highlighting a key gap in the literature.

Does Teacher Motivation Matter?

Few studies examine how teacher motivation relates to important outcomes, such as teacher retention or student learning. There is reason to expect that motivation may matter, however. For instance, researchers have documented wide variation across teachers in attributes such as self-efficacy, career expectations, confidence, workplace preferences, and other non-academic cognitive factors (e.g., Cannata, 2010; Kwok, 2021; Rockoff et al., 2011; Roloff et al., 2020), with some evidence that these factors are modestly correlated with teacher value-added or observation scores (e.g., Bastian et al., 2017; Cheng & Zamarro, 2018; Rockoff et al., 2011; Roloff et al., 2020).

Several studies examine teacher motivation and retention, but they often rely on weaker proxy measures, such as planned persistence, intention to stay or leave, and self-reported burnout (Alexander et al., 2020; Fokkens-Bruinsma & Canrinus, 2014; Keese et al., 2022; Watt & Richardson, 2008). Notable findings from this area are that intrinsic motivation was negatively correlated with teacher burnout (McLean et al., 2019) and intentions to remain in the profession (Van den Borre et al., 2021). Altogether, there is some suggestive evidence that teacher motivation may be related with labor market outcomes, but stronger data and measures are needed to more reliably examine this relationship.

The Current Study

We make a number of contributions to the literature. First, we use a computational grounded theory approach—combining natural language processing and qualitative methods—that allows us to inductively identify motivational themes from preservice teachers' open-ended essay responses. Whereas much of the prior work examining teacher motivation uses closed-ended survey instruments based on pre-existing motivational frameworks, our exploratory approach makes no assumptions about why individuals choose to teach and, thus, provides an independent replication of prior findings. Second, we are

able to generate new insight about how motivation varies by individual characteristics, which helps speak to long-standing concerns about the composition of the teacher workforce. Third, the longitudinal nature of our data allows us to more credibly examine how motivation may relate to key teacher education and labor market outcomes. Finally, we examine a large sample ($N = 2777$) of preservice teachers enrolled in a university-based teacher education program in the United States, whereas most prior work uses non-U.S. samples.

Data

Our sample includes roughly 2,800 PSTs enrolled from 2012–2018 in one of the largest teacher preparation programs in Texas. The program certifies in the following areas: early childhood–6th grade core subjects; 4th–8th grade math/science or English language arts/social studies; and 7th–12th grade content areas (e.g., biology). We use unique student identifiers to link various data sources, including admissions records, teacher education program data, and labor market outcomes.[3] Appendix Table A1 provides descriptive statistics for our sample. Consistent with national trends in teacher education programs, our sample is largely White (84%) and female (93%). After graduating, 85% were employed for at least one year as a K–12 public school teacher in Texas. The four-year attrition rate conditional on entry was 23%.

We derive our measures of teacher motivation from an open-ended response question that is part of a required field placement preference survey for PSTs.[4] We focus on one of

[3] Each year, the university submits a list of students credentialed in the program to the Texas Education Agency. The agency then returns a matched set of information for all individuals working in the Texas public school system, including an identifier for their school placement. Using these data, we observe whether PSTs entered the K–12 public school system in Texas and, subsequently, whether they remain in their school and the state system, more broadly. Using the Common Core of Data from the National Center for Education Statistics, we merge in school-level information, including level, locale type, and average student demographic characteristics. To reduce the dimensionality of the school characteristics (particularly for use as an outcome variable), we use principal components analysis to construct an index measure of school advantage.

[4] Its primary use is to identify PSTs' preferred district, content area, and grade level for their clinical teaching placement. The survey administration is electronic and remained consistent over the analysis period. PSTs complete the survey in the middle of their second semester of the program. Beyond the

these dispositional questions: "Explain why you decided to become a teacher." We analyzed all 2,777 usable responses (98% of total). There is considerable variation in the length of the essays provided by PSTs. On average, essays are 9.9 sentences long with a standard deviation of 6.3. We detail our text analysis procedure in the next section.

Analysis

Our analysis has three main objectives. First, we aim to systematically categorize the broad reasons for why students pursue a teaching career. Second, we document the extent to which variation in motivation can be linked to PSTs' observable characteristics, such as race/ethnicity, gender, and family income. Finally, we evaluate whether PSTs' motivations predict measures of PST quality and labor market outcomes.

Computational Grounded Theory

To process and analyze essay responses from roughly 2,800 essays, we follow a procedure called "computational grounded theory" (Nelson, 2020). This three-step procedure iterates between natural language processing (NLP) and qualitative methods to leverage both computational pattern detection and human insight.

The first step is pattern detection—surfacing as many trends underlying the data as possible. Here, this means trying to identify every substantive topic of discussion in PST essays (a common NLP task called "topic modeling"). We apply a topic modeling technique, BERTopic (Grootendorst, 2022), which leverages many of the most recent advances in NLP (i.e., large language models, the same technology underpinning popular applications of NLP like ChatGPT, Grammarly, and many voice assistants) to improve its ability to detect these topics with minimal text cleaning or pre-processing. In plain terms, the algorithm "reads" each sentence of each essay and characterizes its underlying meaning across numeric indices as informed by the massive quantities of text data on which it was

placement questions, several open-response questions provide information about PSTs' dispositions. These questions are required but not individually consequential; they carry no weight for program or academic standing. In conversations with program staff, we confirmed that these open-ended questions are almost never used for anything, despite their required nature.

trained. The algorithm then clusters together sentences with similar meaning. This initial unsupervised approach identified 135 "raw topics."

The second step of computational grounded theory is pattern refinement. Here, human analysts conducted structured qualitative readings to interpret for substantive meaning the 135 raw topics. For each topic, two members of the research team independently read the top-20 word/phrase combinations and full sentence samples to identify relevant topics and condense them into broader, substantively related "supertopics." The two researchers then met to resolve any discrepancies until a consensus was reached. This process yielded 11 supertopics, which are the variables of interest in our analysis. Appendix Table B1 provides a detailed description of each of the 11 supertopics, while Appendix Table B2 provides a description of each of the 135 raw topics and their top ten word combinations.

The final step is pattern confirmation—validating the patterns surfaced in prior steps across the entire dataset. Here, this means rigorously examining random and purposive subsets of actual sentences classified under each supertopic to assess validity and reliability. We iterated between steps 1 and 2 (as informed by our evaluations in step 3) until reaching a final set of raw topics and supertopics we felt adequately described the data and its nuances across many essay examples.

Ultimately, we use the output of this process to produce flags for whether a given PST's essay response contains any sentence categorized into one of these 11 supertopics (thus ignoring the precise counts). We hypothesize that this operationalization provides a strong indication that a PST was motivated to become a teacher for a particular reason. Instead of categorizing an entire essay into one theme, we capture the multifaceted reasons why individuals express interest in teaching. As a robustness check, we explored different ways to operationalize the these supertopics (e.g., the proportion of sentences that contain a supertopic or most-discussed supertopic). These checks have not yielded qualitatively different results. Figure A1 shows the distribution of the number of supertopics identified

in each PST essay.

Regression Analysis

Using the supertopics, we estimate two general sets of models. First, we examine whether PSTs' observable characteristics, such as race/ethnicity, gender, and family income predict differences in motivation. Second, we use the motivation supertopics as predictors to examine their connection with PST outcomes.

First, we estimate via log-binomial regression[5]:

$$Motivation_i = \alpha + \phi \mathbf{X}_i + \epsilon_i \tag{1}$$

where $Motivation$ is a binary indicator for whether a particular motivation supertopic appears in PST i's essay. We estimate equation 1 for each of the 11 supertopics. We predict motivation as a function of observable PST characteristics $\mathbf{X}$, which includes demographics (race/ethnicity and gender), family income and education, academic credentials (high school GPA and SAT scores), and certification program area.[6]

Our second set of models evaluate whether PSTs' motivation supertopics predict measures of PST quality, the likelihood that they become employed as a K–12 teacher, the type of school in which they work, and their likelihood of remaining in the teaching profession. Here, we estimate least squares models of the general form:

$$Outcome_i = \alpha + \beta Motivation_i + \delta_i + \epsilon_i \tag{2}$$

[5] The key advantage of using a log-binomial estimator rather than other estimators for dichotomous outcomes, such as logistic regression or ordinary least squares (i.e., linear probability model), is that log-binomial regression produces direct estimates of the risk ratio (also called the relative risk). The risk ratio provides an easily interpretable measure of effect size when comparing results across the various supertopics, which have very different base rates.

[6] All included variables are operationalized as categorical or binary. In the case of missing data for right-hand-sand, we construct an additional "missing" category such that we maintain the full sample. We make sample exclusions when the dependent variable is missing (e.g., individuals who do not enter K–12 teaching do not have turnover outcomes and are thus not included in these models.

where the outcome for PST i is a function of a vector of binary indicators for whether their essay contains a given supertopic ($Motivation_i$). We additionally control for cohort-by-program fixed effects (δ_i), since demand for teachers and performance may vary by year or program and may also be correlated with PST motivation. Finally, when using supertopics as predictors we report bootstrapped standard errors to account for the estimation error inherent in using model-derived categorizations.

Results

Why Do You Want to Be a Teacher?

Frequency of Motivation Topics

Figure 1 shows a frequency distribution for the 11 supertopics—the broad ideas that PSTs expressed in terms of their motivation to be a teacher.[7] Consistent with prior work, PSTs largely express altruistic and intrinsic motivation. By far the most common supertopic, appearing in nearly 60% of essays, was *Want to help students*, which captured a variety of altruistic statements, such as wanting to impact students' lives or make a difference in the world. One PST wrote, for example, "I want to give children hope in becoming something more by providing them with the tools that they need to follow their dreams." Most sentences assigned to this supertopic made specific reference to students or children, though some PSTs described a broader societal impact. As one illustrative example, a PST wrote, "[Teaching] is one of the most important jobs in today's society because it's not only shaping your students' futures, but also the future of this country and our world."[8]

[7] Note that while we filtered out topics that categorized specific rhetorical structures (e.g., "That was the moment I decided to become a teacher."), we retained any topics that categorized essay content, even if the supertopic does not clearly specify a motive for teaching ("Switched from something else"). PSTs often provided somewhat detailed context for their decision (e.g., "I always thought I wanted to be a Marine Biologist, but once I started college I realized that I hated my courses."), which is clearly relevant to understanding teacher motivation, broadly.

[8] Interestingly, relatively few of these statements made specific reference to helping students *learn*. While learning is undoubtedly implicit in terms of how PSTs conceptualize "helping" students, it was far more common that PSTs described their intended impact on a deeper, more comprehensive level.

Two supertopics captured intrinsic motivation: *Enjoy teaching or helping* (30% of essays) and *Enjoy working with children* (22%). While conceptually similar, we observed a distinct difference in model-produced raw topics describing enjoyment of teaching others versus working specifically with [young] children.[9] Whereas the learning process was not commonly referenced (explicitly) in descriptions of altruistic motivation, it was nearly ubiquitous in descriptions categorized as *Enjoy teaching or helping*. Specifically, PSTs often talked about their enjoyment of witnessing the "aha!" or "light bulb" moment where a student grasps a concept for the first time. One PST wrote, for example, "My personal moments of joy came from seeing the ah-ha moment on someone's face and hearing the almost auditory click that occurs when everything starts to fall in place and make sense."

The remaining supertopic appearing in at least 20% of essays was *Impact of prior teachers* (29%). These descriptions were almost uniformly positive and PSTs typically referenced these influential teachers as a specific motivation for teaching and/or an archetype for the teacher they hoped to become. For example, one PST wrote, "We all had that teacher that really just inspired us to be the best we can be, that challenged us in the best way, that we felt we could turn to whether we needed help academically or with personal matters; I want to be that teacher." Relatedly, PSTs often supplemented their description of an influential teacher with an expressed a desire to "pay it forward" to their future students.

Other supertopics were individually less frequent and fit less cleanly into the standard motivation framework (altruism, intrinsic, extrinsic). Rather, they generally reflect important context that PSTs provide when describing their motivation. Roughly 18% of essays had at least one sentence coded as *Always wanted to teach*. Here, many PSTs

[9] We are careful here to not attribute causation in any particular direction. The distinction between enjoyment working with *students* or *people* versus *children* likely reflects, at least in part, a selection process that has already occurred, whereby PSTs who are pursuing certification in EC–6 grades discuss intrinsic motivation in the context of their intended area (i.e., working with younger children). Thus, the distinction between enjoyment teaching/helping others versus working with children could be a product of context, rather than actual differences in motivation.

described "playing school" as a child. On the other hand, 11% of PSTs described switching to teaching from another major or career track (*Switched from something else*), such as engineering.

Some essays described prior experiences as context for motivation to teach. For example, 14% of PSTs described *Prior teaching experiences*, including both formalized programs and informal teaching opportunities such as camp counselor, bible study, or tutoring. PSTs often described how these experiences helped them realize their passion or enjoyment for teaching and helping others. As one PST wrote, "After I began working with children at my church and babysitting, I started to notice how rewarding the experience was watching them progress into creative individuals." Less frequently, PSTs referenced positive (8%) or adverse (5%) schooling experiences. The latter included descriptions both of one's own challenges (e.g., "I found out I was dyslexic when I was in third grade, and I remember it feeling like a devastating life sentence of not being successful") and of adversity experienced by others, such as classmates or siblings (e.g., "Coming from a rough neighborhood, I saw my classmates dropping out and getting jobs."). Roughly 5% of PSTs described a *Family connection to teaching* (most often their mother).

The final supertopic is *Content areas*, which appeared in 13% of essays. This supertopic is the most difficult to interpret, as it mainly reflects the use of subject area language rather than a specific motivation or experience. Here, the raw topics correspond to specific subjects (e.g., math) and most often describe a love or passion for the subject. As one PST wrote, "I feel so passionately about literature and want to share that love with others so that they are able to see the beauty and power behind words the way that I do." This sentiment of wanting to share and foster a similar passion among their future students was a common feature of PSTs' content area descriptions.

Notably absent are extrinsic factors, such as compensation, working conditions, job security, and vacation time (e.g., summers off). We should note, however, that the absence of a potential supertopic does not necessarily mean that it is not relevant for PSTs' career

choice, and PSTs may be reticent to describe the attractiveness of particular benefits. Similarly, PSTs may focus on describing their most salient motives for teaching. Thus, we recommend some caution in interpreting the absolute frequency of these supertopics.

Inter-Topic Correlations

PST essays often contained multiple supertopics (see Appendix Figure A1); do some supertopics appear in concert with others? Figure 2 shows a tetrachoric correlation matrix for the supertopic indicators.[10] We find several notable patterns. First, altruism (*Want to help students*) is negatively correlated with all other supertopics except for *Impact of prior teachers* and *Adversity*, demonstrating that PSTs whose essays allude to altruism are somewhat less likely to also describe intrinsic motivation (e.g., *Enjoy working with children*). However, we find a positive association between *Want to help students* and *Adversity*, which could suggest that adversity fosters a desire to help students. One PST wrote, for example, "I want to make a difference. I grew up in an urban district, so I am familiar with the hardships that those students face. I want my classroom to be a safe haven for my students, so that if they have a rough home life, they know they can escape it for a little while in my classroom."

Figure 2 also shows a positive relationship between *Adversity* and *Impact of prior teachers* ($r = 0.24$). While relatively few PSTs wrote about adversity, 67% of these essays also described the impact of a prior teacher, compared to only 33% of essays without this adversity supertopic. Examining these essays more closely, we found that PSTs often described how teachers helped them navigate challenges in school. As one PST wrote,

> The statistics are stacked against someone with by background. Living in an impoverished neighborhood and struggling to learn English as my second language, and a daughter of Mexican immigrant parents who didn't even get to finish primary school, getting to go to college was a far-off dream, not a reality. Because of the support from my parents and teachers, I got to be where I am today, a 21-year-old first generation college student with high hopes for the life ahead of me . . . I was

[10] Additionally, Appendix Table A2 shows risk ratios based on two-way contingency tables (i.e., the relative frequency of supertopic Y in essays where supertopic X is and is not present) to provide a more interpretable sense of magnitude.

> fortunate to have many teachers who became my role models . . . I want to pay forward what my teachers did for me.

This sentiment of gratitude was very common among essays describing adversity. By contrast, *Adversity* was negatively related to *Enjoy helping or teaching* and *Enjoy working with children*—the supertopics most closely characterizing intrinsic motivation.

Finally, PSTs whose essays included either *Switched from something else* ($r = 0.32$) and *Always wanted to teach* ($r = 0.17$) were roughly twice as likely to include *Prior experience teaching*. One PST wrote, "After spending seventeen years in the restaurant business, I was successful, but felt as though my life was missing something. My wife is an amazing teacher, and occasionally I would get to spend time in her classroom...I was given opportunities to interact with students by reading to the class, or sometimes having them read to me."

Differences in Motivation by Preservice Teacher Characteristics

Table 1 shows results from log-binomial regression models predicting a binary indicator for whether a given supertopic appears in a PST's essay as a function of their characteristics. The coefficients are expressed as risk ratios (RR), with the baseline risk (i.e., the predicted probability for a PST with characteristics in the indicated base categories) shown at the bottom.

We find no differences in the two most frequent supertopics, *Want to help students* and *Enjoy teaching or helping*, by PST race/ethnicity. However, column 3 shows that Black ($RR = 1.6$) and Asian ($RR = 1.6$) PSTs are more likely than White or Hispanic/Latino ($RR = 0.9$) PSTs to write about the impact of prior teachers. Reflecting the correlation shown previously, Black and Asian PSTs are also more likely to discuss adversity—respectively, 3.6 and 2.2 times more likely than White PSTs. This juxtaposition is particularly interesting given the substantial underrepresentation of Black and Asian teachers both in Texas and nationally.[11]

[11] One simple hypothesis, for instance, is that these groups are less likely to pursue teaching because they

Turning to gender, we find that male PSTs' essays are substantially less likely to include *Enjoy working with children* ($RR = 0.56$), *Always wanted to teach* ($RR = 0.28$), and *Own positive experiences* ($RR = 0.16$). These results highlight the long-standing gender dynamics contributing to a dramatic underrepresentation of men in K–12 teaching. For instance, we observe few instances where men described "playing school" as a child or their own positive schooling experiences in essays. While men were equally as likely as women to write about enjoying teaching or helping others, they were half as likely to write about enjoying working with children.

We found few differences by family income or parental education level. Mother's education is an important exception; PSTs whose mothers had a bachelor's degree were 5.2 times more likely to mention a family connection to teaching. There is no such relationship for father education, which makes sense given that the vast majority of K–12 teachers and staff are women. This pattern provides some evidence that the topic model is working as intended, since a bachelor's degree is required to become a teacher.

There were also relatively few differences by SAT scores or high school GPA, particularly among the more frequent supertopics. PSTs with high SAT scores (>1300) were less likely to say they always wanted to be a teacher ($RR = 0.8$), more likely to write about a specific content area ($RR = 1.4$), less likely to describe experiences with adversity ($RR = 0.5$), and less likely to talk about a family connection to teaching ($RR = 0.5$).

Finally, certification area was a substantial predictor of many supertopics. For instance, relative to PSTs in the EC–6 area, PSTs seeking grades 4–8 or 7–12 certification are substantially less likely to discuss enjoyment working with children, while *Content areas* is substantially more common among PSTs in 7–12 subjects. Some of this latter relationship reflects that PSTs in these 7–12 areas reference their specific content area (e.g.,

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are more likely to experience adversity in their K–12 schooling. However, it also important to acknowledge the potential influence of sample selection here. That is, we only observe essays for individuals who have already self-selected into a teaching track. We cannot be certain how representative the experiences of Black and Asian PSTs are in comparison to individuals who did not pursue teaching. We return to this point in the discussion.

"I can't wait to become a chemistry teacher."). However, it also reflects passion for a particular subject. Relatedly, we observe that PSTs in 7–12 subjects are somewhat less likely to discuss altruism (*Want to help students*, $RR = 0.8$). We also find that PSTs in 4–8 or 7–12 areas are less likely to discuss prior teaching experiences and more likely to have switched from a different career path, which was unexpected. Overall, these results suggest that motivations to teach are quite different between those pursuing certification to teach in younger versus older grades.

Does Motivation Predict Outcomes?

Table 2 shows results for models predicting outcomes during college. The first two columns are retrospective—the outcomes are binary indicators for, respectively, whether the PST indicated they were potentially interested in teaching when they applied to the university and whether teacher certification was their initial major choice. These analyses again provide support for the validity of the model-derived supertopics. For instance, PSTs who described always wanting to teach were 12 percentage points more likely to indicate initial interest in teaching and 7 percentage points more likely to choose the initial major. By contrast, PSTs who described switching from something else were 10 percentage points less likely to be express initial interest and choose the initial major.

Turning to the performance measures, PSTs whose essays contained *Content areas* or *Switched from something else* score moderately higher on certification exams in pedagogy and content (0.16–0.22 SD).[12] The *Switched from something else* results are interesting, in particular, because they suggest that expanding recruitment need not come at the cost of quality or readiness. If anything, these students have stronger academic credentials, though there is mixed evidence about the predictive validity of these certification exams.

Column 5 shows generally little evidence that variation in motivation predicts

[12] The former is a "pedagogy and professional responsibilities" exam that all new teachers are required to pass. The content exam varies by the certification area (e.g., high school biology teachers take a biology exam) and we pool these scores into a single measure.

differences in PST effectiveness as measured by clinical teaching observation scores.[13] Most of the estimates are small in magnitude and do not reach statistical significance at a 95% confidence level. However, two supertopics had a significant positive correlation with observation scores: *Enjoy teaching or helping* (0.06 SD) and *Adversity* (0.13 SD). To the latter relationship, we observed previously that PSTs who described adversity in their essays were more likely to be nonwhite or have lower high school GPA and SAT scores, and this supertopic is also negatively correlated (though not significant) with certification exam scores. Altogether, these patterns may highlight a disconnect between measures of teacher effectiveness (or readiness) and standard measures of academic achievement.

Table 3 shows results for predicting labor market outcomes. Columns 1 shows no evidence that motivation is correlated with the probability of entering K–12 teaching in Texas. That said, most of our sample (86%) enters, so we have limited statistical power here. Column 2 examines the characteristics of teachers' initial school site, conditional on entry. To reduce dimensionality, we construct a standardized "advantage index" using principal components analysis, which summarizes the demographic characteristics of a school. A higher value indicates that the school has characteristics historically associated with advantage.[14] Here, we find that PSTs who wrote about adversity tend to work in less-advantaged schools, perhaps consistent with an underlying motivation to help disadvantaged students or work in the same context as their own schooling.

The last two columns of Table 3 examine teacher turnover. Columns 3 and 4, respectively, are binary indicators for whether the teacher changed schools or left the K–12

[13] Prior work establishes that while these observation scores likely do contain some information about differences in PST performance, effectiveness, or readiness, the majority of the variation is driven by arbitrary differences in field supervisors' rating standards (Bartanen & Kwok, 2021). There is also evidence that observation scores contain race and gender bias in favor of white and female teachers (Bartanen & Kwok, 2021; Campbell & Ronfeldt, 2018; Grissom & Bartanen, 2022). Both of these sources of variation in observation scores may be correlated with motivation supertopics in PST essays. To account for these potential confounders, we include fixed effects for field supervisor and covariates for race/ethnicity and gender in this model.

[14] Specifically, these characteristics are: not eligible for Title I, not located in an urban area, more White or Asian students, fewer students qualifying for free/reduced price lunch.

public school system in Texas. These outcomes are measured yearly and the models include controls for school characteristics and teacher experience. For changing schools, we find a positive association with *Family connection to teaching.* Finally, PSTs who described *Enjoy teaching or helping* and *Adversity* were 2.1 and 2.9 percentage points less likely to exit, respectively, relative to an average rate of 7.4%. Notably, these are the same supertopics that were associated with higher clinical teaching observation scores.

Discussion

Understanding why individuals choose to pursue a teaching career is critical for education policy and practice, particularly in light of renewed concerns about the health and status of the teaching profession. Our analysis of preservice teacher (PST) essays responding to the prompt, "Explain why you decided to become a teacher," yielded eleven distinct supertopics. Altruism, intrinsic motivation, and the impact of prior teachers appeared frequently; notably absent were descriptions of extrinsic factors, such as job security. Motivation appeared to vary by PST characteristics and some supertopics were predictive of outcomes. We highlight a few of these patterns further below.

Limitations

Consistent with the nature of our research questions and methods, our primary goal was hypothesis generation. That is, we aimed to identify relationships that could be tested in a confirmatory fashion with stronger measures and more robust research designs. Prior to describing these hypotheses, it is important to highlight the key limitations of our work.

First, we cannot nor do we intend to make empirical claims about causal relationships from these data. While some of the associations we find may be consistent with a causal mechanism, we largely cannot rule out the presence of omitted variables, reverse causality, or simultaneity bias. Our suggestive interpretation of descriptive patterns is rooted in the prior literature, our background knowledge, and the ad hoc intuition. None of these are substitutes for rigorous empirics, which underscores the need for confirmatory research.

Second, identifying motivation inherently relies on self-reported data. While the open-ended nature of the essay prompt has advantages—allowing PSTs to respond without being influenced by specific questions and making no assumptions about the likely content of responses—it also has shortcomings. Perhaps most importantly, PSTs may not be completely forthcoming in describing their motivation, perhaps driven by social desirability bias.

Third, we only observe individuals who ended up choosing to enroll in this institution's teacher education program. This sample selection issue is particularly relevant when considering implications for teacher recruitment and pipeline issues. For example, a naïve interpretation of the absence of extrinsic motivation in PST essays is that extrinsic factors play little role in shaping who enters teaching. This pattern may instead reflect survivorship bias, whereby individuals for whom extrinsic factors are most salient never enter teaching. Similarly, differences in motivation by PST characteristics (e.g., race/ethnicity) may in part reflect differential sample selection.

Finally, in considering generalizability, our data come from a single teacher education program housed in a university and state with particular characteristics. Most notably, our sample of PSTs is overwhelmingly white and female. While this largely mirrors the typical composition of preservice teachers in traditional preparation programs and the teacher workforce, more broadly, we cannot be certain that differences in motivation along race/ethnicity and gender lines would hold in a more diverse program.

Findings, Implications, and Future Directions

We now turn to highlighting some of the key findings and their implications. Consistent with our hypothesis-generating aims, we emphasize that these implications, while potentially important for research, policy, and practice, should be understood as provisional and in need of replication/confirmation in different contexts and with varying methodological approaches. Thus, we also integrate into this discussion avenues for future work.

For recruitment, our results suggests some important routes to consider. Sample selection aside, the prominence of altruism and intrinsic motivation may suggest interventions that help individuals to realize a passion for teaching/helping students and young children. To this point, we found that PSTs switching from a different career path were more likely to mention having prior experiences with teaching.[15] Exposing individuals to teaching experiences prior to or at the start of college—an approach often pursued by "Grow Your Own" programs or programs that target high school students (Gist, 2022)—could be valuable. However, we lack causal evidence demonstrating that exposure to teaching experiences increases interest in a teaching career.

On the other hand, the absence of extrinsic motivators in PST essays may suggest room for growth in terms of marketing a teaching career, given a common narrative that K–12 teaching is a low-compensation, low-status profession (e.g., Christian et al., 2023). This narrative undoubtedly discourages individuals who might otherwise value the altruistic and intrinsic gifts that teaching can provide, and while certainly rooted in truth to some degree, there is also evidence that it is overly pessimistic (Christian et al., 2023; Goldhaber et al., 2022; Walsh, 2014).[16] However, we lack clear evidence on how much this (excess) pessimism actually lowers teaching interest and whether, for instance, informational interventions can remedy it.

We found substantial differences in motivation supertopics by certification area, suggesting the need for a more nuanced discussion of teacher supply. Prospective elementary school teachers were more likely to describe enjoyment of working with

[15] It is also possible that the causal arrow runs the other direction; individuals with a predilection for teaching or dissatisfaction with their current path may seek out teaching-related experiences.

[16] For example, Goldhaber et al. (2022) examine the earnings of individuals in Washington state who earned a teaching credential, but decided not to enter the profession. They find that individuals who receive teaching credentials—but do not teach—were not lured out of the profession by higher paying jobs. Instead, these individuals earn considerably less on average than those who entered the teaching profession. In another example, Christian et al. (2023) find that college students at The University of Michigan have biased beliefs about their career prospects. Most related, students underestimate both the the pecuniary and non-pecuniary benefits of teaching. Finally, comparing individuals that chose teaching and non-teaching careers with similar academics abilities, Walsh (2014) finds the opportunity cost of choosing teaching to be between $300 and $3,800 per year.

children, generally, whereas middle/high school PSTs more often described an interest or love for (teaching) a particular content area. Further, middle/high school PSTs were both less likely to have had prior teaching experiences and more likely to have switched to teacher certification from a different career path. Finally, high school PSTs were less likely to discuss altruism. These results suggest that what draws individuals to teaching may be quite different by grade level and/or subject and that, accordingly, the efficacy of recruitment efforts may vary along these dimensions.[17] Future work should continue to probe differences in teaching interest and entry by subject area and grade level, including shortage areas like STEM and special education (Cowan et al., 2016).

PST motivation differences by race/ethnicity and gender speak to long-standing concerns about underrepresentation in the K–12 teacher workforce. As one particularly stark example, 17% of female PST essays talked about "always wanting to be a teacher," compared to only 4% of male essays. Men were similarly less likely to express enjoyment working with children and talk about their own positive schooling experiences. We hypothesize that these patterns may reflect the gendered messaging that boys receive from an early age regarding expectations for their interests and career choices. For race/ethnicity, PSTs of color were far more likely to describe experiences with adversity. While such experiences may actually make for a stronger teacher candidate (see below), they could also discourage individuals from pursuing teaching. However, it would be useful to replicate these patterns in other contexts before drawing more definitive conclusions.

Collectively, motivation supertopics were not strong predictors of performance during clinical teaching nor early-career retention. Two supertopics—*Enjoy teaching or helping* and *Adversity*—were important exceptions—these supertopics were associated with higher clinical observation scores and had lower attrition as full-time teachers. While preliminary, these supertopics could indicate that an intrinsic enjoyment of teaching and

[17] Relatedly, they speak to previous findings that among students potentially interested in teaching, there were stark differences—by demographics, family background, and prior academic achievement—between those interested in elementary school versus high school (Bartanen & Kwok, 2022).

experiences with adversity could be useful traits for longevity and effectiveness as a K–12 teacher. The potential link between intrinsic motivation and retention does have some support in the prior literature (McLean et al., 2019; Van den Borre et al., 2021). That said, we encourage studies that aim to replicate these patterns and extend them to examining teachers' impacts on student outcomes. More generally, studies that follow aspiring teachers longitudinally—perhaps from certification program entry to the early- or mid-career—could provide important information about the malleability of motivation and how it influences key outcomes like retention and skill development.

References

Alexander, C., Wyatt-Smith, C., & Du Plessis, A. (2020). The role of motivations and perceptions on the retention of inservice teachers. *Teaching and Teacher Education*, *96*, 103186.

Bacher-Hicks, A., Chi, O. L., & Orellana, A. (2023). Two Years Later: How COVID-19 Has Shaped the Teacher Workforce. *Educational Researcher*, 0013189X231153659.

Bartanen, B., & Kwok, A. (2021). Examining Clinical Teaching Observation Scores as a Measure of Preservice Teacher Quality. *American Educational Research Journal*, *58*(5), 887–920.

Bartanen, B., & Kwok, A. (2022). *From Interest to Entry: The Teacher Pipeline From College Application to Initial Employment* (tech. rep.). Annenberg Institute at Brown University.

Bastian, K. C., McCord, D. M., Marks, J. T., & Carpenter, D. (2017). A Temperament for Teaching? Associations Between Personality Traits and Beginning Teacher Performance and Retention. *AERA Open*, *3*(1), 233285841668476.

Brookhart, S. M., & Freeman, D. J. (1992). Characteristics of Entering Teacher Candidates. *Review of Educational Research*, *62*(1), 37–60.

Bullough, R. V., & Hall-Kenyon, K. M. (2011). The call to teach and teacher hopefulness. *Teacher Development*, *15*(2), 127–140.

Campbell, S. L., & Ronfeldt, M. (2018). Observational evaluation of teachers: Measuring more than we bargained for? *American Educational Research Journal*, *55*(6), 1233–1267.

Cannata, M. (2010). Understanding the Teacher Job Search Process: Espoused Preferences and Preferences in Use. *Teachers College Record: The Voice of Scholarship in Education*, *112*(12), 2889–2934.

Cheng, A., & Zamarro, G. (2018). Measuring teacher non-cognitive skills and its impact on students: Insight from the Measures of Effective Teaching Longitudinal Database. *Economics of Education Review*, *64*, 251–260.

Christian, A., Ronfeldt, M., & Zafar, B. (2023). *College students and career aspirations: Nudging student interest in teaching*, University of Michigan.

Cowan, J., Goldhaber, D., Hayes, K., & Theobald, R. (2016). Missing Elements in the Discussion of Teacher Shortages. *Educational Researcher*, *45*(8), 460–462.

Croft, M., Guffy, G., & Vitale, D. (2018). *Encouraging More High School Students to Consider Teaching* (tech. rep.). ACT Research & Policy.

Fokkens-Bruinsma, M., & Canrinus, E. T. (2014). Motivation for becoming a teacher and engagement with the profession: Evidence from different contexts. *International Journal of Educational Research*, *65*, 65–74.

Fray, L., & Gore, J. (2018). Why people choose teaching: A scoping review of empirical studies, 2007–2016. *Teaching and Teacher Education*, *75*, 153–163.

Gist, C. D. (2022). Shifting Dominant Narratives of Teacher Development: New Directions for Expanding Access to the Educator Workforce Through Grow Your Own Programs. *Educational Researcher*, *51*(1), 51–57.

Goldhaber, D., Krieg, J., Liddle, S., & Theobald, R. (2022). Out of the Gate, But Not Necessarily Teaching: A Descriptive Portrait of Early-Career Earnings for Those Who Are Credentialed to Teach. *Education Finance and Policy*, 1–40.

Goldhaber, D., & Ronfeldt, M. (2020). Toward causal evidence on effective teacher preparation. *Linking teacher preparation program design and implementation to outcomes for teachers and students* (pp. 211–236). Information Age.

Grissom, J. A., & Bartanen, B. (2022). Potential Race and Gender Biases in High-Stakes Teacher Observations. *Journal of Policy Analysis and Management*, *41*(1), 131–161.

Grootendorst, M. (2022). BERTopic: Neural topic modeling with a class-based TF-IDF procedure.

Guarino, C. M., Santibañez, L., & Daley, G. A. (2006). Teacher Recruitment and Retention: A Review of the Recent Empirical Literature. *Review of Educational Research*, *76*(2), 173–208.

Han, J., & Yin, H. (2016). Teacher motivation: Definition, research development and implications for teachers (M. Boylan, Ed.). *Cogent Education*, *3*(1), 1217819.

Heinz, M. (2015). Why choose teaching? An international review of empirical studies exploring student teachers' career motivations and levels of commitment to teaching. *Educational Research and Evaluation*, *21*(3), 258–297.

Hong, J., Greene, B., Roberson, R., Cross Francis, D., & Rapacki Keenan, L. (2018). Variations in pre-service teachers' career exploration and commitment to teaching. *Teacher Development*, *22*(3), 408–426.

Jantzen, J. M. (1947). Why college students choose to teach. *The Phi Delta Kappan*, *28*(8), 333–335.

Jantzen, J. M. (1981). Why College Students Choose to Teach: A Longitudinal Study. *Journal of Teacher Education*, *32*(2), 45–49.

Johnson, S. M., & Birkeland, S. E. (2003). Pursuing a "Sense of Success": New Teachers Explain Their Career Decisions. *American Educational Research Journal*, *40*(3), 581–617.

Keese, J., Waxman, H., Asadi, L., & Graham, M. (2022). Retention intention: Modeling the relationships between structures of preparation and support and novice teacher decisions to stay. *Teaching and Teacher Education*, *110*, 103594.

King, S. H. (1993). Why Did We Choose Teaching Careers and What Will Enable Us to Stay?: Insights from One Cohort of the African American Teaching Pool. *The Journal of Negro Education*, *62*(4), 475–492.

Klassen, R. M., Al-Dhafri, S., Hannok, W., & Betts, S. M. (2011). Investigating pre-service teacher motivation across cultures using the Teachers' Ten Statements Test. *Teaching and Teacher Education*, *27*(3), 579–588.

Kraft, M. A., & Lyon, M. A. (2022). *The Rise and Fall of the Teaching Profession: Prestige, Interest, Preparation, and Satisfaction over the Last Half Century* (tech. rep.). Annenberg Institute at Brown University.

Kwok, A. (2021). Flexible or Rigid? Exploring Preservice Teachers' Classroom Preferences. *Educational Researcher*, *50*(7), 463–473.

Kwok, A., Rios, A., & Kwok, M. (2022). Pre-service teachers' motivations to enter the profession. *Journal of Curriculum Studies*, *54*(4), 576–597.

Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher sorting and the plight of urban schools: A descriptive analysis. *Educational evaluation and policy analysis*, *24*(1), 37–62.

Lin, E., Shi, Q., Wang, J., Zhang, S., & Hui, L. (2012). Initial motivations for teaching: Comparison between preservice teachers in the United States and China. *Asia-Pacific Journal of Teacher Education*, *40*(3), 227–248.

Manuel, J., & Hughes, J. (2006). It has always been my dream': Exploring pre-service teachers' motivations for choosing to teach. *Teacher Development*, *10*(1), 5–24.

McLean, L., Taylor, M., & Jimenez, M. (2019). Career choice motivations in teacher training as predictors of burnout and career optimism in the first year of teaching. *Teaching and Teacher Education*, *85*, 204–214.

Moran, A., Kilpatrick, R., Abbott, L., Dallat, J., & McClune, B. (2001). Training to Teach: Motivating Factors and Implications for Recruitment. *Evaluation & Research in Education*, *15*(1), 17–32.

Müller, K., Alliata, R., & Benninghoff, F. (2009). Attracting and Retaining Teachers: A Question of Motivation. *Educational Management Administration & Leadership*, *37*(5), 574–599.

Nelson, L. K. (2020). Computational Grounded Theory: A Methodological Framework. *Sociological Methods & Research*, *49*(1), 3–42.

Parr, A., Gladstone, J., Rosenzweig, E., & Wang, M.-T. (2021). Why do I teach? A mixed-methods study of in-service teachers' motivations, autonomy-supportive instruction, and emotions. *Teaching and Teacher Education*, *98*, 103228.

Partelow, L. (2019). What To Make of Declining Enrollment in Teacher Preparation Programs.

Redding, C., & Nguyen, T. D. (2020). Recent Trends in the Characteristics of New Teachers, the Schools in Which They Teach, and Their Turnover Rates. *Teachers College Record*, *122*(7), 1–36.

Reeves, T. D., & Lowenhaupt, R. J. (2016). Teachers as leaders: Pre-service teachers' aspirations and motivations. *Teaching and Teacher Education*, *57*, 176–187.

Richardson, P. W., & Watt, H. M. (2006). Who chooses teaching and why? profiling characteristics and motivations across three australian universities. *Asia-Pacific Journal of Teacher Education*, *34*(1), 27–56.

Richardson, P. W., & Watt, H. M. (2010). Current and future directions in teacher motivation research. In T. C. Urdan & S. A. Karabenick (Eds.), *The Decade Ahead: Applications and Contexts of Motivation and Achievement* (pp. 139–173). Emerald Group Publishing Limited.

Rockoff, J. E., Jacob, B. A., Kane, T. J., & Staiger, D. O. (2011). Can You Recognize an Effective Teacher When You Recruit One? *Education Finance and Policy*, *6*(1), 43–74.

Roloff, J., Klusmann, U., Lüdtke, O., & Trautwein, U. (2020). The Predictive Validity of Teachers' Personality, Cognitive and Academic Abilities at the End of High School on Instructional Quality in Germany: A Longitudinal Study. *AERA Open*, *6*(1), 233285841989788.

Roloff Henoch, J., Klusmann, U., Lüdtke, O., & Trautwein, U. (2015). Who becomes a teacher? Challenging the "negative selection" hypothesis. *Learning and Instruction*, *36*, 46–56.

Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How Teacher Turnover Harms Student Achievement. *American Educational Research Journal*, *50*(1), 4–36.

Struyven, K., Jacobs, K., & Dochy, F. (2013). Why do they want to teach? The multiple reasons of different groups of students for undertaking teacher education. *European Journal of Psychology of Education*, *28*(3), 1007–1022.

Su, Z. (1997). Teaching as a profession and as a career: Minority candidates' perspectives. *Teaching and Teacher Education*, *13*(3), 325–340.

Thomson, M. M., & Palermo, C. (2014). Preservice teachers' understanding of their professional goals: Case studies from three different typologies. *Teaching and Teacher Education*, *44*, 56–68.

Van den Borre, L., Spruyt, B., & Van Droogenbroeck, F. (2021). Early career teacher retention intention: Individual, school and country characteristics. *Teaching and Teacher Education*, *105*, 103427.

Walsh, P. (2014). When Unified Teacher Pay Scales Meet Differential Alternative Returns. *Education Finance and Policy*, *9*(3), 304–333.

Watt, H. M., & Richardson, P. W. (2007). Motivational Factors Influencing Teaching as a Career Choice: Development and Validation of the FIT-Choice Scale. *The Journal of Experimental Education*, *75*(3), 167–202.

Watt, H. M., & Richardson, P. W. (2008). Motivations, perceptions, and aspirations concerning teaching as a career for different types of beginning teachers. *Learning and Instruction*, *18*(5), 408–428.

Watt, H. M., Richardson, P. W., Klusmann, U., Kunter, M., Beyer, B., Trautwein, U., & Baumert, J. (2012). Motivations for choosing teaching as a career: An international comparison using the FIT-Choice scale. *Teaching and Teacher Education*, *28*(6), 791–805.

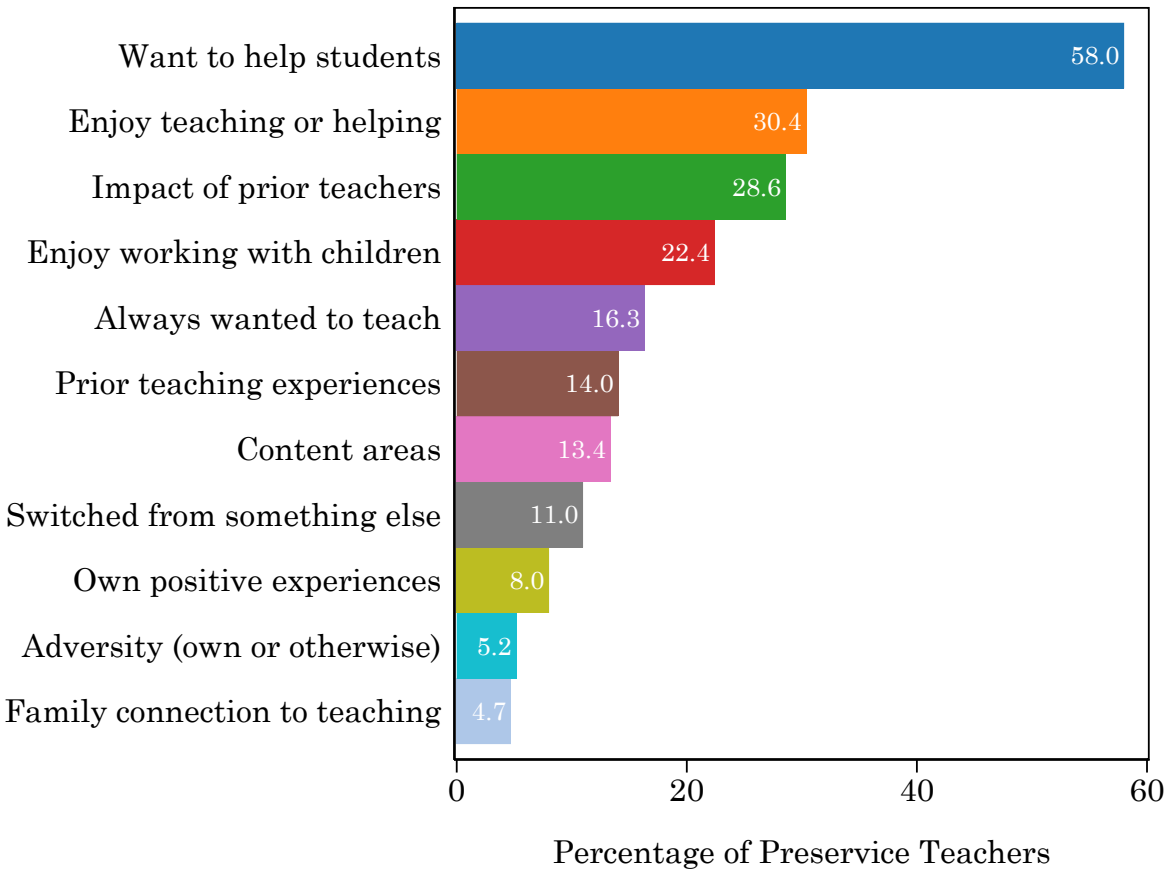

Figure 1

Share of PST essays with each supertopic

Notes: Plot shows a bar chart with the proportion of PST essays containing at least one sentence categorized into a supertopic. See Table B1 for a detailed description of each supertopic.

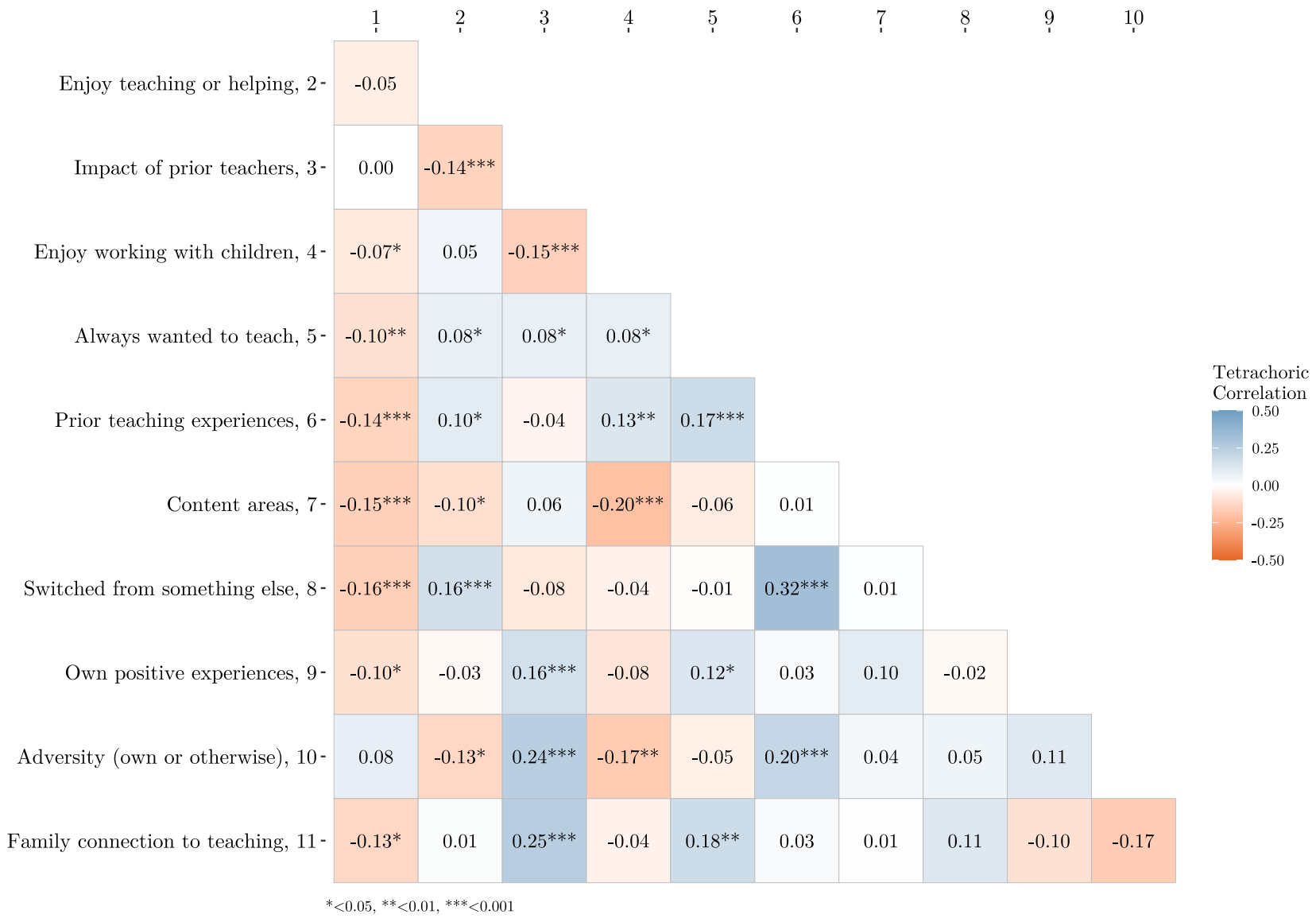

Figure 2

Supertopic correlations

Table 1

Reasons for teaching, by observable characteristics, single regression

	Want to help students	Enjoy teaching or helping	Impact of prior teachers	Enjoy working with children	Always wanted to teach	Prior teaching experiences	Content areas	Switched from something else	Own positive experiences	Adversity (own or otherwise)	Family connection to teaching
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Personal Demographics											
White (base)											
Black	1.06	1.07	1.55*	1.05	0.81	1.31	1.05	0.98	0.31	3.64***	2.31
	(0.13)	(0.24)	(0.29)	(0.31)	(0.31)	(0.46)	(0.39)	(0.42)	(0.31)	(1.27)	(1.29)
Hispanic/Latino	1.10	1.00	0.88	0.70*	0.78	1.06	0.91	0.72	1.06	1.62*	0.69
	(0.05)	(0.09)	(0.09)	(0.10)	(0.12)	(0.17)	(0.13)	(0.15)	(0.22)	(0.37)	(0.25)
Asian	0.97	1.27	1.58**	0.86	0.98	1.46	0.59	0.98	1.14	2.15	1.17
	(0.12)	(0.22)	(0.24)	(0.24)	(0.30)	(0.40)	(0.24)	(0.39)	(0.49)	(0.94)	(0.66)
Male (base=female)	0.92	1.03	0.83	0.56*	0.28***	0.89	0.91	1.20	0.16**	0.74	0.43
	(0.07)	(0.12)	(0.11)	(0.14)	(0.10)	(0.21)	(0.12)	(0.24)	(0.09)	(0.29)	(0.22)
Family Background											
Income < $80k	1.11*	1.00	0.98	1.03	0.99	0.87	1.18	1.05	1.00	1.00	1.02
	(0.05)	(0.08)	(0.08)	(0.11)	(0.12)	(0.12)	(0.15)	(0.17)	(0.19)	(0.24)	(0.26)
Income $80k–$150k (base)											
Income > $150k	0.98	1.01	1.07	1.10	1.03	1.05	1.11	1.25	1.06	1.49	1.19
	(0.05)	(0.09)	(0.09)	(0.11)	(0.13)	(0.14)	(0.14)	(0.20)	(0.20)	(0.34)	(0.27)
Father has BA	1.04	0.96	1.04	0.94	1.08	0.79*	0.82	0.82	1.23	0.94	0.94
	(0.04)	(0.07)	(0.08)	(0.08)	(0.12)	(0.10)	(0.09)	(0.12)	(0.21)	(0.19)	(0.21)
Mother has BA	0.95	0.97	0.93	1.11	0.87	1.07	1.13	1.10	0.71*	0.97	5.24***
	(0.04)	(0.07)	(0.07)	(0.10)	(0.09)	(0.13)	(0.13)	(0.16)	(0.12)	(0.20)	(1.55)
Academic Characteristics											
SAT < 1000	0.93	1.04	0.89	0.74	1.10	0.71	0.72	0.88	0.79	1.40	0.14*
	(0.07)	(0.14)	(0.13)	(0.14)	(0.20)	(0.18)	(0.22)	(0.25)	(0.27)	(0.41)	(0.14)
SAT 1000–1290 (base)											
1300 ≤ SAT ≤ 1600	0.95	0.93	0.90	0.87	0.75*	1.12	1.39**	0.97	1.37	0.50*	0.53*
	(0.04)	(0.08)	(0.08)	(0.09)	(0.10)	(0.15)	(0.16)	(0.15)	(0.24)	(0.16)	(0.14)
-3 ≤ z-GPA ≤ -1	0.82	0.74	1.14	0.70	0.77	1.02	0.60	1.43	2.13*	1.76	1.78
	(0.11)	(0.18)	(0.23)	(0.19)	(0.25)	(0.33)	(0.34)	(0.48)	(0.72)	(0.60)	(0.90)
HS z-GPA -1 to 1 SD (base)											
1 ≤ z-GPA ≤ 3	0.99	1.18	1.03	0.94	0.72	1.09	1.04	1.49*	1.02	0.52	0.60
	(0.06)	(0.13)	(0.12)	(0.14)	(0.14)	(0.22)	(0.16)	(0.30)	(0.27)	(0.22)	(0.26)
Certification Area											
EC–6 (base)											
4-8 ELA/SS	0.99	0.91	1.04	0.60***	0.80*	0.77*	2.39***	1.32	1.19	1.17	0.99
	(0.04)	(0.07)	(0.08)	(0.06)	(0.09)	(0.10)	(0.41)	(0.19)	(0.20)	(0.24)	(0.22)
4-8 Math/Sci	0.94	0.96	1.07	0.57***	1.06	0.68**	3.66***	1.35*	1.13	1.17	1.26
	(0.04)	(0.07)	(0.08)	(0.06)	(0.11)	(0.09)	(0.57)	(0.19)	(0.19)	(0.24)	(0.27)
7-12 Subjects	0.75***	0.99	1.13	0.33***	0.68	0.55**	9.18***	1.49	1.36	0.88	1.40
	(0.06)	(0.12)	(0.14)	(0.08)	(0.16)	(0.13)	(1.49)	(0.32)	(0.34)	(0.39)	(0.52)
Baseline Risk (pr)	0.61***	0.29***	0.29***	0.29***	0.21***	0.16***	0.04***	0.08***	0.06***	0.05***	0.01***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)

Notes: Bootstrapped standard errors shown in parentheses. Each column shows results from separate models estimated via OLS predicting whether an essay contains at least one sentence for the supertopic defined by the column header.
*<0.05, **<0.01, ***<0.001

Table 2

Predicting program outcomes

	App. Seek teacher cert. (1)	**App. Major teacher cert.** (2)	**Pedagogy score** (3)	**Content score** (4)	**Clinical obs. score** (5)
Want to help students	-0.018	-0.019	0.093*	0.035	0.032
	(0.017)	(0.018)	(0.039)	(0.036)	(0.027)
Enjoy teaching or helping	-0.006	-0.009	0.068	0.028	0.062*
	(0.019)	(0.019)	(0.042)	(0.039)	(0.030)
Impact of prior teachers	0.028	0.024	0.026	-0.031	0.024
	(0.019)	(0.020)	(0.041)	(0.040)	(0.030)
Enjoy working with children	0.045*	0.052*	-0.041	-0.022	0.046
	(0.021)	(0.023)	(0.047)	(0.042)	(0.032)
Always wanted to teach	0.118***	0.072**	-0.011	-0.026	0.024
	(0.019)	(0.023)	(0.050)	(0.047)	(0.035)
Prior teaching experiences	-0.018	0.009	-0.036	-0.039	-0.022
	(0.025)	(0.025)	(0.056)	(0.053)	(0.044)
Content areas	0.016	0.034	0.205***	0.224***	-0.015
	(0.027)	(0.030)	(0.054)	(0.060)	(0.047)
Switched from something else	-0.096**	-0.102***	0.161**	0.216***	-0.062
	(0.031)	(0.030)	(0.056)	(0.053)	(0.047)
Own positive experiences	0.055	-0.004	0.080	0.159*	-0.056
	(0.031)	(0.033)	(0.070)	(0.063)	(0.049)
Adversity (own or otherwise)	-0.005	-0.005	-0.099	-0.142	0.132*
	(0.040)	(0.046)	(0.092)	(0.081)	(0.059)
Family connection to teaching	0.105**	0.151***	0.019	-0.076	0.027
	(0.033)	(0.035)	(0.083)	(0.084)	(0.058)
Outcome Mean	0.772	0.639	0.032	0.181	0.013
N	2396	2396	2716	2274	2447
R^2	0.11	0.22	0.07	0.06	0.61

Notes: Bootstrapped standard errors shown in parentheses. Each column shows results from OLS models estimating whether having at least one supertopic in an essay predicts if a PST indicated on their college application that they planned to seek a teaching certification (column (1)), if a PST indicated on their college application that they planned to major in education (column (2)), scores on teacher certification exams in pedagogy (column (3)), content (columns (4)), and in clinical observations (columns (5)). Columns (3) to (5) are provided in standard deviations from the mean. All columns include cohort by program fixed effects. Column (5) also includes supervisor fixed effects.

*<0.05, **<0.01, ***<0.001

Table 3

Predicting labor market outcomes

	Enter teaching (1)	**School advantage** (2)	**Exit system** (3)	**Change schools** (4)
Want to help students	0.024	0.016	-0.004	-0.008
	(0.014)	(0.042)	(0.009)	(0.007)
Enjoy teaching or helping	0.020	0.063	0.002	-0.021**
	(0.014)	(0.046)	(0.009)	(0.007)
Impact of prior teachers	0.005	0.049	-0.006	-0.008
	(0.014)	(0.045)	(0.009)	(0.007)
Enjoy working with children	-0.022	0.003	-0.003	-0.003
	(0.016)	(0.049)	(0.011)	(0.008)
Always wanted to teach	0.016	0.076	0.000	0.001
	(0.017)	(0.057)	(0.011)	(0.008)
Prior teaching experiences	0.014	0.029	0.004	0.001
	(0.018)	(0.061)	(0.012)	(0.009)
Content areas	0.018	0.077	-0.008	-0.002
	(0.022)	(0.065)	(0.014)	(0.009)
Switched from something else	-0.008	0.004	-0.003	-0.001
	(0.022)	(0.069)	(0.014)	(0.010)
Own positive experiences	0.042	0.039	-0.010	-0.000
	(0.024)	(0.073)	(0.015)	(0.011)
Adversity (own or otherwise)	0.009	-0.229*	0.022	-0.029*
	(0.028)	(0.091)	(0.020)	(0.012)
Family connection to teaching	0.021	0.075	0.041*	-0.011
	(0.031)	(0.105)	(0.021)	(0.013)
Outcome Mean	0.855	0.442	0.163	0.074
N	2777	2356	7324	7324
R^2	0.03	0.05	0.02	0.01

Notes: Bootstrapped standard errors shown in parentheses. Each column shows results from OLS models estimating whether having at least one supertopic in an essay predicts the advantage index of PST's clinical observation school (column (1)), if a PST enters teaching at a K–12 Texas public school (column (2)), the advantage index of the school a PST enters (column (3)), and if a PST exits a Texas public school in years 2 (columns (4)), 3 (columns (5)), or 4 (columns (6)). Columns (1) and (3) are provided in standard deviations from the mean. All columns include cohort by program fixed effects. Column (5) also includes supervisor fixed effects.

*<0.05, **<0.01, ***<0.001

Appendix A

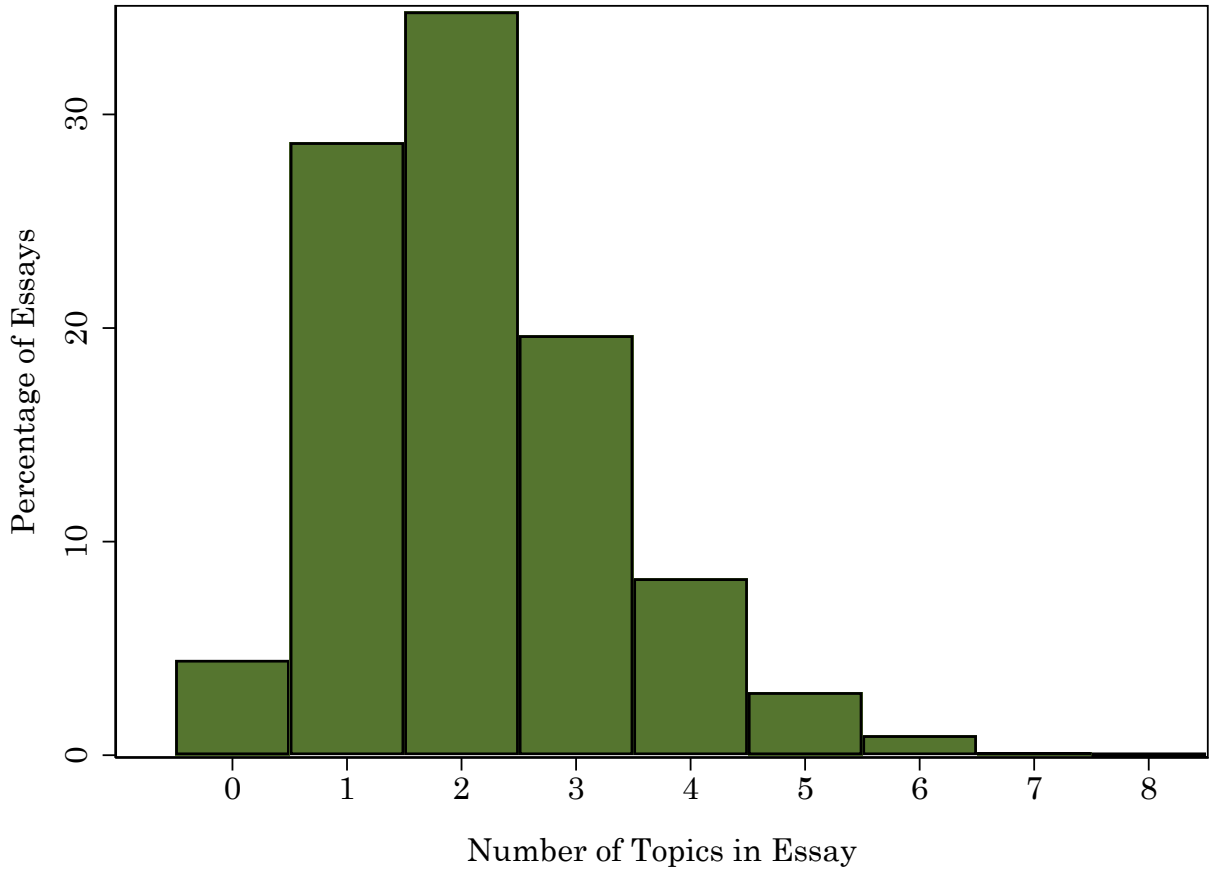

Figure A1

Distribution of supertopics in each PST essay

Notes: Plot shows a histogram with the percentage of PST essays with the number of motivational supertopics in an essay.

Table A1

Descriptive statistics

	Count	Mean
Demographics		
Male	2698	0.07
Black	2660	0.02
Hispanic/Latinx	2660	0.12
Asian	2660	0.02
White	2660	0.84
Academics		
SAT Composite $<$ 1000	2194	0.06
SAT Composite 1000–1200	2194	0.70
SAT Composite $>$ 1200	2194	0.23
-3 $\leq$ High School GPA z-score $\leq$ -1	1259	0.05
-1 $<$ High School GPA z-score $<$ 1	1259	0.77
1 $\leq$ High School GPA z-score $\leq$ 3	1259	0.18
App. Seek Teacher Certification	2396	0.77
App. Major Education	2396	0.64
Family background		
Family Income $<$ $60,000	2129	0.33
Family Income $60,000–$100,000	2129	0.41
Family Income $>$ $100,000	2129	0.27
Father Has BA	2396	0.60
Mother Has BA	2396	0.57
Program information		
EC-6	2777	0.45
4-8 ELA/SS	2777	0.23
4-8 Math/Sci	2777	0.23
7-12 Subjects	2777	0.10
Pedagogy Certification Exam Score†	2716	0.03
Content Certification Exam Score†	2275	0.18
Clinical Observation Score†	2497	0.02
Labor market outcomes		
Entered Texas Public Schools	2777	0.85
Standardized School Advantage Index†	2356	0.44
Leave Texas Public Schools By Year 2	2224	0.06
Leave Texas Public Schools By Year 3	1875	0.11
Leave Texas Public Schools By Year 4	1527	0.17
Leave Texas Public Schools By Year 5	1218	0.23

Notes: † Indicates the mean is a continuous variable. The units of all other means are the proportion of the sample.

Table A2

Predicting a Motivational Supertopic with Other Motivational Supertopics, Separate Regressions, Log-Binomial

	Want to help students	**Enjoy teaching or helping**	**Impact of prior teachers**	**Enjoy working with children**	**Always wanted to teach**	**Prior teaching experiences**	**Content areas**	**Switched from something else**	**Own positive experiences**	**Adversity (own or otherwise)**	**Family connection to teaching**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Want to help students		0.91	1.00	0.86*	0.79**	0.70***	0.67***	0.65***	0.74*	1.32	0.65*
		(0.052)	(0.061)	(0.061)	(0.068)	(0.066)	(0.065)	(0.070)	(0.095)	(0.224)	(0.111)
Enjoy teaching or helping	0.94		0.75***	1.12	1.22*	1.28*	0.75*	1.55***	0.92	0.63*	1.04
	(0.034)		(0.053)	(0.083)	(0.109)	(0.125)	(0.085)	(0.169)	(0.131)	(0.125)	(0.192)
Impact of prior teachers	1.00	0.75***		0.70***	1.22*	0.91	1.16	0.80	1.60***	2.23***	2.31***
	(0.036)	(0.053)		(0.061)	(0.111)	(0.097)	(0.120)	(0.101)	(0.209)	(0.361)	(0.393)
Enjoy working with children	0.92*	1.10	0.72***		1.23*	1.39**	0.54***	0.88	0.76	0.53**	0.86
	(0.038)	(0.073)	(0.059)		(0.119)	(0.142)	(0.078)	(0.119)	(0.127)	(0.127)	(0.183)
Always wanted to teach	0.88**	1.18*	1.18*	1.21*		1.60***	0.83	0.98	1.48*	0.83	1.87**
	(0.042)	(0.085)	(0.089)	(0.106)		(0.172)	(0.117)	(0.144)	(0.225)	(0.194)	(0.356)
Prior teaching experiences	0.83***	1.22**	0.92	1.34***	1.58***		1.02	2.52***	1.10	2.04***	1.10
	(0.045)	(0.091)	(0.083)	(0.119)	(0.162)		(0.140)	(0.286)	(0.196)	(0.377)	(0.261)
Content areas	0.81***	0.79*	1.13	0.56***	0.84	1.02		1.03	1.37	1.17	1.03
	(0.046)	(0.075)	(0.093)	(0.077)	(0.114)	(0.139)		(0.162)	(0.229)	(0.262)	(0.255)
Switched from something else	0.80***	1.38***	0.83	0.90	0.98	2.40***	1.03		0.93	1.23	1.55
	(0.050)	(0.106)	(0.088)	(0.107)	(0.136)	(0.250)	(0.157)		(0.197)	(0.294)	(0.356)
Own positive experiences	0.86*	0.94	1.41***	0.79	1.42**	1.09	1.34	0.93		1.53	0.65
	(0.059)	(0.103)	(0.126)	(0.116)	(0.188)	(0.181)	(0.207)	(0.192)		(0.381)	(0.247)
Adversity (own or otherwise)	1.12	0.70*	1.71***	0.58*	0.84	1.86***	1.15	1.21	1.51		0.43
	(0.072)	(0.113)	(0.160)	(0.125)	(0.179)	(0.284)	(0.233)	(0.268)	(0.358)		(0.248)
Family connection to teaching	0.81*	1.03	1.74***	0.88	1.69***	1.09	1.03	1.49	0.65	0.43	
	(0.076)	(0.137)	(0.167)	(0.158)	(0.256)	(0.231)	(0.231)	(0.310)	(0.245)	(0.248)	
Base Rate (Proportion)	0.58	0.30	0.29	0.22	0.16	0.14	0.13	0.11	0.08	0.05	0.05

Notes: Bootstrapped standard errors shown in parentheses. Each cell shows results from separate models estimated via GLM predicting whether an essay contains at least one sentence for the supertopic defined by the column header.
*<0.05, **<0.01, ***<0.001

Appendix B

Table B1

Topic descriptions

Topic	Description of topic	Example sentence
Want to help students	A desire to help students or have an impact on their lives	"I want to make a difference in the lives of kids."
Enjoy teaching or helping	Enjoys teaching or helping students. Also includes sentences about enjoying helping people generally.	"I love watching a student finally understand a concept, and watching their eyes light up and how their mindset changes."
Impact of prior teachers	Was positively impacted by previous teachers	"Throughout my school career I have had exceptional teachers that have led me to where I am today."
Enjoy working with children	Enjoys, loves, or is passionate about working with children	"I was born with a passion for serving children."
Always wanted to teach	Always knew they wanted to be a teacher; played school as a kid; talk about teaching as a long-time calling or dream	"Ever since I can remember, I've wanted to be a teacher."
Prior teaching experiences	Prior experience teaching, mentoring, babysitting, etc.	"Throughout high school, I participated in a program where I worked with elementary kids during the school day."
Content areas	Enjoys a particular content area	"I discovered that not everyone likes math and I really wanted to change that."
Switched from something else	Switched into teaching from wanting to do something else	"After changing majors numerous times, I came to the realization that I did not want to work in the energy industry."
Own positive experiences	Own positive experience in education; always liked school; love learning	"Growing up I enjoyed going to school and learning something new every day."
Adversity (own or otherwise)	Experienced or was exposed to school adversity	"In fact, for most of my academic career, I hated learning because I hated school."
Family connection to teaching	Someone in their family is a teacher	"My mother is a teacher, and I always admired her dedication and loved watching her."

Table B2

Descriptions of algorithm-derived "raw topics"

Algorithm-derived topic description	Top ten word combinations
Want to help students	
Importance of education	education, believe education, education important, country, important, future, believe, key, society, generation
Want to help students learn	learning, love learning, learning want, want students, learning students, want share, want, want inspire, inspire students, instill
Believe in the potential of students	student, believe students, believe, critical, matter, need, successful, students, students need, succeed
Want to impact child's life	want make, childrens lives, want make difference, childrens, difference childrens, make difference, difference childrens lives, difference, lives children, make difference childrens
Want to change lives or make a difference	change, difference world, want change, make difference world, world, make difference, peoples lives, change lives, make, peoples
Want to make a difference in students' lives	want make difference, make difference students, difference students, difference students lives, want make, make difference, students lives, lives students, difference lives students, difference
Want to help students [reach their potential]	want students, want help students, want, set, want encourage, want help, potential, students, help students, students know
Referring to the adversity faced by students [Not own adversity]	place, age, home, school, students come, trying, dont, lack, figure, group
Want to build a safe space/place for students	safe, place, want students, want students know, environment, students feel, students know, classroom, feel, comfortable
Want to help students [reach their potential]	encourage, want encourage, work hard, want, achieve, help succeed, hope, hard, expectations, best
"I knew I wanted a job that. . . "	knew wanted, wanted career, knew, help people, wanted, wanted help, career, people, peoples lives, peoples
Want to help "them" [students] learn	want teach, teach, instill, want, love learning, learning want, learning, want able, want help, learn
Talking about the impact that teachers have	teachers, mold, ability, character, shape, unique, development, responsible, believe teachers, huge
Teachers have the opportunity to make a difference	opportunity, influence, lives, difference, teachers, difference lives, make difference, future teacher, impact, make
Hope to inspire students	hope, inspire students, inspire, like teachers, teachers did, passion learning, instill, students, inspiration, learning
Teachers change lives	teachers, change, impact, students teachers, lives, impact lives, power, students lives, opportunity make, change students
Want to be a role model	role model, model, role, role model students, model students, positive role, positive role model, positive, role models, models

(Continued on Next Page...)

Table B2

Descriptions of algorithm-derived "raw topics" (continued)

Algorithm-derived topic description	Top ten word combinations
"I want students to…"	want students, leave, school want, confidence, want, students feel, walk, succeed, students, classroom
Students need good teachers	need, students need, care, teachers, needs, great, passionate, good, think, important
"The reason I decided to be a teacher is…"	decided teacher, main, want make difference, decided, make difference, reason, want make, teacher want, difference, difference world
Want to impact students' lives	impact students, want impact, impact students lives, impact, make impact, lasting, want make, students lives, want positive, lasting impact
Want to help students	want help students, want help, help students, help, want able, want, leaders, guide, successful, students
Want to be a positive influence for students	want positive, positive influence, influence students, students lives, students want, influence, want, positive, students, light
Many children don't have role models	believe child, role models, models, child, role, believe, positive role, need, succeed, role model
"I feel like I can…" [help students]	help students, feel, students help, feel like, reach potential, motivate, students, learn, reach, students learn
Want to make a difference in a child's life	childs life, childs, kids, felt, realized, positive impact, children, seen, saw, impact
Children/kids need [someone who cares about them]	deserves, need, child, needs, care, push, person, adult, motivate, loved
Want to build relationships with students	relationships, relationship, relationships students, build, building, connect, develop, personal, students, important
Teachers have an impact [not really talking personally]	impact teachers, impact, students life, teachers students, seen, lives students, teacher make, experience, lives, grown
Teaching is an important job	important, jobs, job, society, believe teaching, believe teacher, believe, world, teaching, believe teachers
Want to be a positive role model	want positive, role model, model, want person, positive role model, inspiration, role, positive role, positive, want
I want to help children	dreams, children, goals, talents, want, inspire, help children, want help, teach children, challenge
Want to help students/children	want help, help children, help, kids, want, young minds, minds, children, aspects, young
Want to impact students' lives	students life, worth, change students, life, student, difference, difference students, impact, just, students make
Children are the future	children future, future, children, believe, world, power, society, generation, care, voice
Defining the responsibility teachers have to their students	respect, encouraged, love students, open, students, responsibility, need, support, ensure, students make

(Continued on Next Page...)

Table B2

Descriptions of algorithm-derived "raw topics" (continued)

Algorithm-derived topic description	Top ten word combinations
Talking about children and believing in them generally	child, believe child, thinking, teaching children, unique, understand, comes, different, ability, childs
Want to impact future generations	generations, generation, future generations, future, leaders, impact future, shape, world, change world, want help
Want to make a difference in students' lives	lives students, impact students, difference, difference students, difference lives students, students lives, make difference, make difference students, make, lives
Want to impact future generations	generation, leaders, education, generations, future, education important, education want, future generations, want help, want
Enjoy helping or teaching	
Enjoy the "aha" or light bulb moment	finally, concept, seeing, moment, light, understand, finally understand, bulb, light bulb, face
Enjoy/love/cant imagine a better career	job, profession, career, imagine, rewarding, meant, calling, think, doing, feel
Enjoy working with or helping students	enjoy, working students, love, love able, helping students, students love, enjoy working, relationships, students, working
Teaching is a rewarding job/profession/career	rewarding, teaching rewarding, profession, teaching, job, professions, teaching profession, believe teaching, teaching just, challenging
Enjoy the "aha" or light bulb moment	light, bulb, light bulb, face, seeing, concept, finally, childs, understand, eyes
Enjoy helping people	helping, people, passion helping, helping people, person, relationships, help people, caring, naturally, passion
Teaching is a good fit for me	teaching, mind, career, teaching career, thought, careers, passions, career teaching, calling, came
"I fell in love with teaching when. . . "	love teaching, passion teaching, grown, teaching, passion, love, continued, fell love, fell, year
Love helping people	helping people, sharing, people, enjoy, helping, love helping, feeling, things, explaining, love
Describing fulfillment in aspects of teaching	feeling, joy, rewarding, student, makes, fulfilling, students succeed, growth, knowing, grow
Teaching is challenging but rewarding	challenges, rewarding, hard work, hard, comes, teaching, work, challenging, easy, worth
Impact of prior teachers	
Impact of teacher (masc.)	mister, saw, class, tell, told, proud, face, friend, said, student
Impact of teacher (plural, no gender)	taught, encouraged, cared, pushed, helped, role models, models, today, fun, showed
Impact of teacher (plural, no gender)	teachers, blessed, great teachers, fortunate, wonderful teachers, today, wonderful, teachers growing, growing, amazing

(Continued on Next Page...)

Table B2

Descriptions of algorithm-derived "raw topics" (continued)

Algorithm-derived topic description	Top ten word combinations
Impact of teacher (fem.)	grade teacher, grade, inspired, misses, second grade, inspired teacher, teacher, second, influenced, inspiration
Impact of teacher (plural, no gender)	teachers, impact life, impacted, influential, life teachers, life, remember, influenced, impact, school teachers
Impact of teacher (fem.)	inspired, gave, misses, impacted, dedication, inspiration, impact students, forward, impact, just like
Impact of teacher (plural, no gender)	teachers, great teachers, pay, impact, hope, teachers growing, life want, impact life, wonderful teachers, students teachers
Impact of teacher (fem.)	cared, fun, learning fun, misses, voice, went, showed, learning, creative, class
Impact of teacher (fem.)	difference life, showed, gave, helped, believed, inspired, encouragement, taught, misses, life
Impact of teacher (fem.)	told, asked, said, misses, college, questions, went, didnt, saw, going
Impact of teacher (plural, no gender)	teachers, inspired, teachers inspired, strong, helped, today, impact, honor, inspired teacher, reason want teacher
Enjoy working with children	
Love working with children	passion children, love children, children, heart, kids, passion, children love, interacting, love, love kids
Love working with children	working children, working, wanted work, passion working, children, work children, working kids, kids, work, passion
Love working with children	working children, working, working kids, enjoyed working, love working, kids, enjoyed, love working children, children, ages
Love working with children	love children, love kids, children, reason, love, kids, teaching children, reason decided, teacher love, say
Love working with children	working children, teaching children, children, working, wait, enjoyed working, passion working, teaching, passion, passionate
Love working with children	love working, love, helping, enjoy, children helping, helping children, kids, love helping, love working children, working
Describing enjoyment working with "them" (children, but not specified)	smile, enjoy, watching, love able, new things, faces, love, day, things, new
Love kids	love kids, children want, kids, love, children, use, strong, want help, want, want make
Passion for working with children	passion, passionate, passion children, children, helping children, helping, children helping, passion helping, kids, succeed
Enjoy watching kids grow and succeed	joy, rewarding, child, grow, watching, watch, opinion, true, children, exciting
Always wanted to teach	

(Continued on Next Page...)

Table B2

Descriptions of algorithm-derived "raw topics" (continued)

Algorithm-derived topic description	Top ten word combinations
Always wanted to be a teacher	wanted teacher, remember wanted, wanted, remember, long remember, teacher wanted, long, teacher, girl, ive
Playing school	play school, play, playing, animals, cousins, sister, used, younger, played, little
Always wanted to be a teacher	known, known wanted, wanted teacher, knew wanted teacher, knew wanted, wanted, knew, teacher, girl, little girl
Always dreamed of being a teacher	dream, girl, little girl, teacher, elementary school, elementary, long remember, little, kindergarten, remember
Teaching is my calling	calling, believe teaching, called, teaching, believe, im, teaching profession, profession, feel, thats
Teaching has always been my dream	dream, teacher wanted, doing, lifelong, teacher, pursuing, little, teaching, imagine, wanted
Talking about "playing school"	animals, play, hours, home, plans, spend, room, learned, friends, brother
Prior teaching experiences	
Talking about experience in teaching or mentoring program	program, elementary, senior, high school, grade, high, leadership, placed, senior year, called
Reflecting on enjoying a prior teaching experience	loved, enjoyed, seeing, loved helping, stories, lesson, concepts, getting, spending, helping
Talking about experiences working with kids (e.g., babysitting, church)	babysitting, worked, working, working children, old, church, years, children, jobs, years old
Talking about experiences helping siblings or cousins (e.g., with homework)	younger, sister, siblings, brother, cousins, homework, family, friends, growing, little
Experiences at church, summer program, etc.	church, youth, school, worked, summer, high school, taught, high, program, involved
Experience as camp counselor	camp, summer, counselor, summers, past, worked, working, spent, girls, years
Talking about experiences as a tutor	tutor, tutoring, peers, test, high school, high, younger, started, school, began
Describing experiences working with children	working, discovered, children, older, passion working, passion children, work children, realized, working children, passion
Content areas	
Talking about math	math, love math, math science, mathematics, science, math teacher, subject, favorite, problem, loved
Talking about math	math, mathematics, love math, math teacher, math science, share, science, subject, want teach, want
Talking about reading	reading, love reading, read, literature, books, writing, book, love, words, want share

(Continued on Next Page...)

Table B2

Descriptions of algorithm-derived "raw topics" (continued)

Algorithm-derived topic description	Top ten word combinations
Talking about history or social studies	history, social studies, studies, social, courses, english, subject, subjects, study, passion
Talking about science	science, biology, world, interesting, showing, understanding, share, fun, amazing, inspire
Talking about math or math teacheres	math, math teacher, grade, classmates, class, year, got, taught, fun, went
Switched from something else	
Wasn't sure what they wanted to do [initially]	business, college, idea, career, wanted, path, career path, texas, graduated, major
Originally wanted to do something else (e.g., doctor)	doctor, major, thought, started, field, college, texas, year college, science, biology
Originally didn't want to be a teacher	didnt, did, wanted teacher, did want, teacher, wanted, actually, wanting, career, choice
Changed major	major, changed, education major, college, education, freshman, decide, decided, semester, freshman year
Switched from engineering	engineering, biology, major, texas, college, started, semester, degree, quickly, university
Own postitive experiences	
Enjoyed school	loved school, loved, school, enjoyed, going school, learning new, new things, grade, absolutely, going
I love learning	learning, love learning, passion learning, subject, learning new, subjects, new, new things, learn, knowledge
I have a passion for teaching/learning [that I want to share]	share, passionate, learning, love learning, want share, pass, love, education want, passion learning, education
Adversity (own or otherwise)	
Describing own adversity at school	struggled, school, easy, struggling, growing, did, smart, early, grades, didnt
Talking about adversity or challenges experienced by "classmates"	schools, saw, noticed, resources, school, classmates, coming, school teachers, classrooms, class
Talking about own disability or that of a sibling	struggled, brother, read, reading, younger, attention, learning, grade, difficult, hard
Family connection to teaching	
Family connection to education	family, mother, mom, educators, grandmother, parents, father, grew, teachers, come
Mom was a teacher	mother, mom, watching, dedication, love teaching, decision, inspired, father, joy, teacher
No super topic	

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Table B2

Descriptions of algorithm-derived "raw topics" (continued)

Algorithm-derived topic description	Top ten word combinations
Unclear	teachers, school, teaching, teacher, students, education, life, passion, love, children
"I decided to become a teacher when..."	wanted teacher, decided wanted teacher, decided wanted, wanted, knew, knew wanted teacher, decided, knew wanted, year, teacher
I want to be the teacher that... [makes an impact]	want teacher, teacher students, want, teacher, remember, helps, students want, makes, type, students
"Being a teacher is more than content"...	content, curriculum, means, teaching, teaching just, just, teacher just, believe teaching, teaching students, believe
"These were the experiences that led me to be a teacher"	experiences, experience, educator, decision teacher, decision, led, desire teach, opportunities, desire, past
"I look forward to" or "I am excited to"	forward, look forward, look, wait, excited, classroom, having, looking, ready, day
I decided to become a teacher because...	decided teacher, decided, chose, chose teacher, teacher want, teacher, chosen, teacher love, teacher wanted, teaching career
Talking about parents/family experiences	parents, family, mom, grew, graduated, siblings, growing, support, college, education
Unclear	true, feeling, thought, told, right, thing, inside, answer, moment, felt
Being a teacher will allow me to...	allow, teacher able, teacher, opportunity, lives, gives, teacher teacher, teacher opportunity, chance, effect
"There are many reasons..."	reasons, reasons decided, reasons decided teacher, decided teacher, decided, reasons want, reason, chose, teacher, main
Unclear	want teach, teach, teaching, want make, make difference, want make difference, want, difference, make, future
"Teaching gives me the opportunity to..."	gives, teaching, opportunity, allow, ability, chance, shape, personally, lives, educator
"That is why I decided to become a teacher."	decided teacher, decided, reason, want teacher, teacher want, teacher, reason want, decided wanted, want teach, life teacher
Texas	texas, texas university, university, education, learned, degree, program, prepared, classroom, realized
"This is the moment I knew I wanted to be a teacher."	knew, moment, wanted teach, realized, meant, fell love, knew wanted, fell, wanted, knew wanted teacher
"My goal as a teacher is to..."	goal, goal teacher, educator, best, teacher help, main, goals, impact students, provide, help students
"I cannot wait to be a teacher"	wait, student teaching, excited, begin, semester, forward, look forward, student, im, start
"A good teacher is..."	good teacher, great teacher, good, role, mentor, teacher, order, students teacher, great, teacher just

(Continued on Next Page...)

Table B2

Descriptions of algorithm-derived "raw topics" (continued)

Algorithm-derived topic description	Top ten word combinations
I want to teach because...	want teach, teach want, teach, want, students want, critical, want make difference, challenge, influence, want make
"it is where you can..."	walk, mold, allows, imagine, adults, opportunity, learn, place, people, created
"I want to be a teacher to..."	want teacher, teacher help, teacher make, want, students want, teacher want, teacher, make difference, students lives want, lives
"I want them [students]"...	want, lives want, want able, future want, want help, help succeed, make difference lives, want make, positive, want positive
Unclear	learned, week, understand, helping, realized, community, classroom, enjoyed, finally, began
"I want to be a teacher because..."	want teacher, teacher want, want, teacher, overall, science, teacher love, math science, students need, simply
"As a teacher I will have the opportunity to..."	teacher opportunity, teacher able, opportunity, educator, successful, students successful, foster, lives students, students help, teacher
"My reasons are..."	reasons want, reasons, school want, want, young age, freshman year, freshman, year, texas, sophomore year
"I want to be a teacher to..."	want teacher, ultimately, teacher help, teacher make, reading, want, overall, teacher, helps, teacher students
"I want to be a teacher because..."	wanted teacher, wanted, want teacher, teacher, teacher help, positive, positive difference, enjoy learning, difference, help shape
"I became a teacher because..."	teacher want, teacher wanted, teacher, teacher love, decided teacher, teacher make, decided, want provide, deserve, sharing