ABSTRACT

Title of dissertation: RECRUITING THE "BEST AND BRIGHTEST":
                             FACTORS THAT INFLUENCE ACADEMICALLY-
                             TALENTED UNDERGRADUATES' TEACHING-
                             RELATED CAREER DECISIONS

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        Although researchers have established a positive relationship between teachers'

academic skills and their students' achievement, evidence indicates that academically-

strong prospective teachers are less likely to progress through the teacher pipeline than

their peers. To date, initiatives to recruit academically-talented individuals to teaching

have been designed with an incomplete understanding of the factors that influence the

"best and brightest" prospective teachers' career decisions.

        Guided by a theoretical framework based on expectancy-value theory, this study

(a) examines the factors that undergraduate students with an interest in teaching (i.e.,

uncommitted prospective teachers) weigh when deciding whether to teach; (b) deciphers

how these factors affect high-achieving students; and (c) identifies promising recruitment

policies. This investigation employs a mixed methods design utilizing survey and focus

group data from undergraduate students at one large, Research 1, mid-Atlantic university.

Analytic methods include ordinal logistic regression and chi-square analyses for the

quantitative data and constant comparison analysis for the qualitative data.

The quantitative analysis identified three significant predictors of uncommitted prospective teachers' intentions to pursue a teaching career: SAT score, interest/ability/encouragement, and social utility. For higher-achieving students, interest/ability/encouragement, social utility, salary perceptions, and prior teaching and learning experiences were statistically significant predictors of teaching intentions.

Qualitative data identified dissuading messages about teaching as well as perceptions about teachers' salary, social status, and opportunities for professional growth in the field as the most influential factors in higher-achieving students' teaching decisions. Results also revealed complex relationships among these factors and students' perceptions of themselves as intelligent, high-achieving individuals.

Findings indicate that uncommitted prospective teachers may be deterred from undergraduate-level teacher preparation when they perceive it will extend their graduation time frame. High-achieving students may also be frequently dissuaded from teacher preparation because they perceive education to be an easy major that leads to a career with a low salary, minimal professional growth, and little social prestige. These findings provide justification for policymakers to continue efforts to develop career ladder and differentiated pay initiatives for teachers and for higher education administrators to offer rigorous education courses and effective degree planning initiatives.

RECRUITING THE "BEST AND BRIGHTEST": FACTORS THAT INFLUENCE
ACADEMICALLY-TALENTED UNDERGRADUATES' TEACHING-RELATED
CAREER DECISIONS

By

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Dissertation submitted to the Faculty of the Graduate School of the
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Dedication

This dissertation is dedicated to the collection of intelligent, enthusiastic, and motivating teachers and professors by whom I have been mentored throughout my educational career. Your passion for your work and investment in my development inspired my insatiable love of learning and commitment to public education. I am deeply grateful for the extra hours so many of you devoted to my academic growth and the growth of so many others. My hope is that this dissertation will play some small role in recruiting other exemplary educators like yourselves to careers in the classroom.

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Finally, words cannot do justice to the role my family has played in my doctoral journey. I am eternally indebted to my parents who, although they did not go to college themselves, instilled in me both an appreciation for the power of higher education and the work ethic necessary to complete a doctorate. Your sacrifices laid the foundation for my accomplishments: thank you for giving me roots and wings.

And to my husband Jim—my quiet rock and my "fixer": this dissertation would not exist without your unwavering support and encouragement. You have always believed in me even when I am not sure I believe in myself. Thank you for listening to me ramble about education policy and helping me work through the thorny logistics of this project. You are an exceptional partner.

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CHAPTER 1: INTRODUCTION

Statement of the Problem

Compared to other schooling resources, teachers have a strong influence on student achievement. Empirical research supports what many parents, administrators, and students intuitively know: the quality of the teacher in the classroom has a substantial impact on students' academic performance (Greenwald, Hedges & Lain, 1996; Sanders & Rivers, 1996; Goldhaber, Brewer & Anderson, 1999; Nye, Konstantopoulos & Hedges, 2004; Rivkin, Hanushek & Kain, 2005). Over the past decade, the highly-qualified mandate in the *No Child Left Behind* legislation of 2002 has sparked substantial public interest in the issue of teacher quality and has rendered the concept ubiquitous in today's education discourse. Despite the frequent discussion around teacher quality, however, the education community continues to debate what specific features define a "quality" teacher. Many of the skills or characteristics one might expect an effective teacher to possess—patience, creativity, and enthusiasm, for instance—are challenging, if not nearly impossible, to measure and compare on the scale necessary to establish a statistical relationship with the outcomes we value in students.

Consequently, researchers who seek to uncover an empirical link between specific teacher attributes and student success must examine measurable traits. To date, few of these attributes (e.g., teacher experience, certification, degrees and coursework) have yielded a consistently positive relationship with student achievement[1] (Rice, 2003). Findings from several studies, however, indicate that teachers' academic skills, as measured by their scores on standardized tests, are a notable exception (Strauss &

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[1] Although student performance on standardized tests is a narrow measure, researchers and policymakers commonly use test scores as an indicator of teacher effectiveness, performance and quality.

Sawyer, 1986; Ferguson, 1991; Ehrenberg & Brewer, 1994; Ferguson & Ladd, 1996).

That is, students of teachers who score higher on standardized tests tend to perform better

on achievement tests themselves than students of teachers who score lower.

Prospective teachers with strong academic backgrounds are desirable recruits not

only because of their potential to influence student achievement, but also for the symbolic

importance of their academic skills. Teaching has long combatted the perception that the

profession does not recruit the "best and brightest" professionals, and with standardized

test scores carrying increasing weight in the educational arena, recruiting teachers with

higher scores and stronger academic records might garner increased respect for the field.

Furthermore, bolstering academically-talented college students' enrollment in education

or pre-education undergraduate programs may communicate to their peers that K-12

teaching is an attractive profession for strong students and may have a multiplicative

effect on recruitment.

Despite these rationales for recruiting academically-talented teachers, the

profession still appears to attract fewer than its share of individuals with this attribute.

Findings from studies that examine the academic skills of the teaching force suggest that

by many measures (e.g., college entry exam scores, selectivity of undergraduate

institution, IQ), individuals who choose to teach have weaker academic qualifications, on

average, than those of the overall college graduate population[2] (e.g., Henke, Geis &

Giambattista, 1996; Henke, Chen & Geis, 2000; Alt, Henke & Perry, 2007). For example,

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[2] Undergraduate grade point average is an exception to this pattern: college students who consider teaching and graduates who become teachers earn higher undergraduate GPAs, on average, than their non-teaching peers (Henke et al., 1996; Henke et al., 2000; Goldhaber & Liu, 2003). As discussed in Chapter 2, however, Goldhaber and Liu (2003) argue that grades in education courses may be artificially higher than those in other disciplines due to grade inflation and/or lower standards.

one study examining data from 1992-1993 college graduates demonstrates that graduates who prepared to teach and taught had average SAT scores 65 points lower than those with no interest in teaching and 43 points lower than graduates who considered, but did not pursue, a teaching a career (Henke et al., 2000). In a follow-up survey conducted ten years after college graduation, 10 percent more graduates who scored in the bottom SAT quartile reported teaching than graduates from the top quartile (Alt et al., 2007). Researchers who examine indicators of academic skills other than SAT scores, including selectivity of undergraduate institution (Ballou, 1996; Goldhaber & Liu, 2003) and IQ scores (Murnane, Singer, Willett, Kemple & Olsen, 1991), report similar patterns with respect to a disproportionately low representation of teachers with the highest scores on the respective measure.

Findings from several studies also reveal that although the average academic skill of the teaching force as measured by teacher test scores has diminished only slightly over the past half century, the percentage of the most academically-talented teachers, especially female teachers, has dropped more precipitously (Murnane et al., 1991; Corcoran, Evans & Schwab, 2004; Corcoran, 2007; Bacolod, 2007). Corcoran's (2007) findings indicate an approximate 10 percentage point decline between the 1960s and the 1990s in the number of women predicted to teach who scored in the top decile on their high school achievement test. This trend is due, in large part, to the overrepresentation of females in the teacher labor market and the changing dynamics of the overall labor market for women. Whereas the teacher labor market once benefitted from a robust supply of women with strong academic credentials, these same talented women now have

a wider range of career opportunities, and many choose occupations other than traditionally female-dominated careers such as teaching (Goldin, 2006).

Though a disproportionately low percentage of high-achieving individuals ultimately teach, many consider a teaching career but choose other occupations prior to preparing for or entering the K-12 classroom. Survey data from a national sample of over 8,000 1992-1993 bachelor's-level graduates from 1,000 postsecondary institutions reveal that 37 percent of graduates who earned SAT scores in the top third of respondents considered, prepared for, or applied for a teaching position during their undergraduate years or in the ten years following graduation, but did not teach (Alt et al., 2007). These findings indicate that a sizeable contingent of academically-strong college graduates contemplate a career in teaching but ultimately select other occupations.

Few studies directly address how this population perceives a career in teaching and what factors attract them toward or push them away from the field. Two recent reports, one published by a management consulting firm (Auguste, Kihn & Miller, 2010) and the other by a think tank (Hiler & Hatalsky, 2014), examine high-achieving undergraduate students' perceptions of teaching. Each of these studies, however, reports results from a relatively small set of survey questions on the topic and focuses more intently on teacher recruitment policy recommendations than on empirical findings related to student perceptions. Two additional quantitative studies speak to the topic, but neither looks specifically at U.S. undergraduate students with strong academic skills. One of these studies was conducted in the United Kingdom (Kyriacou & Coulthard, 2000), which has a substantially different education policy context than the United States. The other is focused primarily on broader teacher pipeline issues, and its analysis of

uncommitted prospective teachers' career decisions is limited to only one survey item (Alt et al., 2007). A handful of qualitative and small-scale quantitative studies also explore students' perceptions of a teaching career, but these studies focus specifically on the views of ethnic minority students (Smith, Mack & Akyea, 2004; Ramirez, 2010; Graham & Erwin, 2011; Bianco, Leech & Mitchell, 2011). Though one of these studies investigates minority college students' views (Ramirez, 2010) and two explore the perceptions of high-achieving, minority high school students (Smith et al., 2004; Graham & Erwin, 2011), none concentrate on the high-achieving, undergraduate student population overall.

To date, we know very little about the factors and values that influence whether high-achieving, uncommitted prospective teachers (i.e., individuals who consider a career in teaching, but are uncertain whether they will teach after graduation) choose to teach. We also know little about whether these individuals find teacher recruitment policies or initiatives attractive, and if so, which policies are most appealing. Evidence indicates that in recent years, some alternative certification programs such as Teach for America have been successful in recruiting undergraduates with strong academic capabilities to at least short-term careers in teaching (Mathematica Policy Research, Inc., 2004). The recruitment success of these initiatives suggests that they may have qualities that are particularly attractive to the high-achieving population but have yet to be empirically identified. Further investigation into the factors that affect academically-talented prospective teachers' career decisions would inform the design of more effective initiatives aimed at recruiting these individuals to the classroom.

Study Purpose and Design

The purpose of this study is to begin to fill this gap in the literature by (a) examining the factors that uncommitted prospective teachers weigh when deciding whether to teach; (b) deciphering how these factors affect high-achieving students, in particular; and (c) identifying promising policies that may attract these individuals to teaching. Findings from the literature on students' and recent graduates' perceptions of teaching lay the empirical groundwork for the study, while an understanding of two common teacher recruitment policies—alternative certification programs and financial incentives—inform the policy context. The theoretical framework for this investigation is an adaptation of Eccles' and colleagues' expectancy-value model (Eccles [Parsons], Adler, Futterman, Goff & Kaczala et al., 1983) and is based largely on Watt and Richardson's (2007) work with preservice teachers. In the next section of this chapter, I introduce this study's theoretical framework and in Chapter 2, I review Eccles' and colleagues' model in more detail, including the model's constructs, the research supporting those constructs and studies that use the theory to frame occupation-related questions. Throughout this investigation, I also rely on a conceptual understanding of the teacher pipeline, which I detail later in this chapter.

This study employs a two-phased, mixed-methods design focusing on undergraduate students at one large, Research 1 university in the mid-Atlantic region. This university educates approximately 15 percent of the teacher candidates who earn their certification in the state. Data for the study come from a survey and focus group interviews. Subjects for the survey phase were undergraduate students with varying levels of interest in a teaching career and varying levels of academic achievement, as

demonstrated by performance on the SAT/ACT examinations. Subjects for the focus group phase of the study were survey participants who (a) had high SAT/ACT scores (see Chapter 3 for a complete definition of the term "high-achieving"), and (b) demonstrated interest in a teaching career on the survey but reported not being committed to teaching after graduation. Findings from the survey and focus groups work in concert to shed light on the issues that influence whether academically-talented undergraduates decide to teach.

Theoretical Framework: An Adaptation of Eccles' Expectancy-Value Model

One limitation of the existing studies that investigate students' perceptions of teaching is that they lack an explicit, empirically-tested theoretical framework for suggesting relevant factors and analyzing study results. Without a strong conceptual basis for understanding and analyzing the problem of recruiting high-achieving teachers, most published studies on the subject are unclear about the constructs they assess, the relationships among those constructs, and the measures they use to assess those constructs.

Eccles' and colleagues' expectancy-value theoretical model (Eccles [Parsons] et al., 1983) is relevant to inquiry into how and why individuals make choices about careers in teaching because it illuminates a broader range of psychological, sociocultural, and economic factors that might affect uncommitted prospective teachers' decisions than those explored in the extant literature or suggested by other theoretical models. In brief, Eccles' model contends that the educational, occupational, and leisure-time activities in which one chooses to engage are primarily determined by one's expectations for success

in the various options under consideration and the value individuals place on those options.

The model's empirically-supported dimensions of expectancies and subjective task values also prompt the researcher to consider a wider range of occupation-related factors than other theories that are more firmly rooted in one academic discipline. For instance, economics-based hedonic wage theory purports that individuals consider the pecuniary and non-pecuniary benefits associated with their various occupational options when making career decisions.[3] While perceptions of benefits are conceptually similar to the subjective task value constructs in Eccles' expectancy-value model, the hedonic wage theory falls short of accounting for the psychological factors (e.g., success expectancies) and social antecedent influences that affect subjective task values and career choices. Vocational psychology-based trait and factor theory (e.g., Parsons, 1909) and personality type theory (e.g., Holland, 1973), on the other hand, focus on one psychological aspect of career choice—namely, how stable personality traits can be matched to, and predict satisfaction in, certain occupations. These theories do not address how the individual's various dimensions of competence beliefs, career values, past experiences, or social influences affect career choice. Compared to these theories, expectancy-value theory offers a more comprehensive foundation on which to build the study of uncommitted prospective teachers' career choices.

A second advantage of using the Eccles' model as a theoretical foundation for this study is that although the theory was initially developed as a framework for explaining adolescents' achievement behaviors (Eccles [Parsons] et al., 1983), Eccles and her

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[3] See Goldhaber, Destler, and Player (2010) for a description of the hedonic wage model.

colleagues have operationalized the model to frame occupation-related research questions (Jozefowicz, Barber & Eccles, 1993; Frome, 1998; Eccles, Barber & Jozefowicz, 1999). Other scholars have used the model in studies of college students' course performance and future enrollment decisions (Bong, 2001; Battle & Wigfield, 2003); investigations of students' occupational aspirations (Watt, 2006); and examinations of college students' decisions about teaching careers (Watt & Richardson, 2007; Watt, Richardson, Klusmann, Kunter, Beyer et al., 2012; Parkes & Jones, 2012).

Most related to this study, Watt and Richardson (2007) adapted the model to frame their longitudinal investigation into what motivates preservice teachers (i.e., undergraduate and graduate students enrolled in a teacher preparation program) to pursue a teaching career. The theoretical framework for this study (see Figure 1) is based largely on Watt and Richardson's (2007) adaptation of the Eccles' model rather than the Eccles model itself. Although Watt and Richardson's (2007) framework is an appropriate model for this study given the framework's direct applicability to the teaching occupational context, their framework, as well as my own, are not without limitations. Most notably, both Watt and Richardson's and this study's theoretical models provide limited definitions for complex phenomena and do not incorporate the full range of expectancy-value factors identified in Eccles' and colleagues' model. Specifically, these two models do not include expectancies for success, attainment value, or the full range of psychological and sociological antecedent factors outlined in Eccles' and colleagues' work (Eccles [Parsons] et al., 1983).
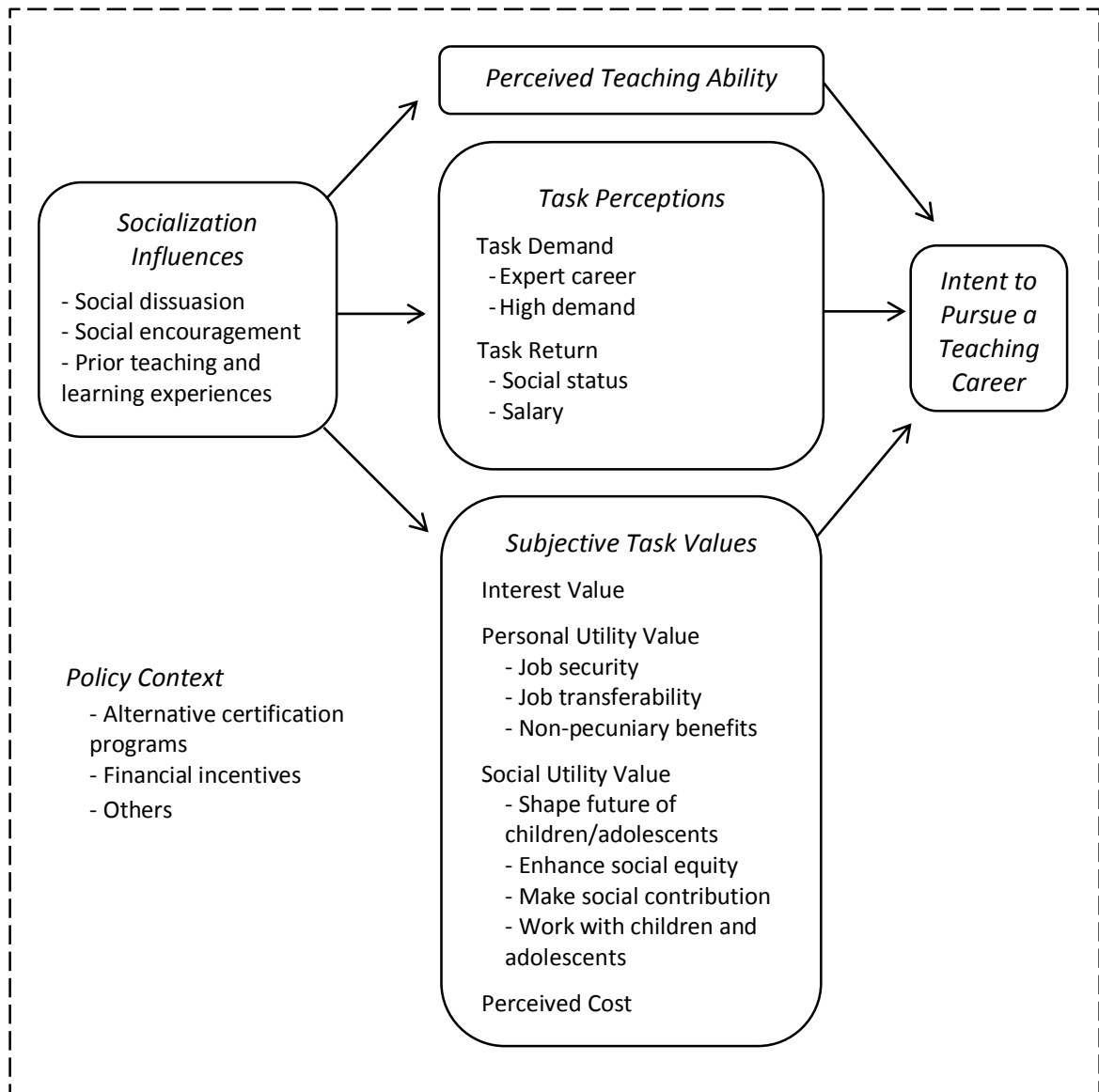
Figure 1. Theoretical Framework

Note. See Appendix A for a list of terms and definitions.

Broadly speaking, Watt and Richardson (2007) theorize that an individual's

teaching-related socialization influences (i.e., encouragement to teach, discouragement

from teaching, and prior teaching and learning experiences) affect his or her (1) *task*

perceptions (i.e., the extent to which one perceives a teaching career to be demanding and

rewarding), (2) *perceived teaching ability* (i.e., how successful one thinks he or she

would be at teaching), and (3) *subjective task values* associated with a teaching career (i.e., how interesting or personally or socially useful one believes a teaching career to be, or what one perceives to be the cost of teaching). These three factors, in turn, contribute to whether the individual intends to pursue a career in teaching.

Socialization Influences

Modeled after Watt and Richardson's (2007) study, my framework focuses specifically on three socialization influences: encouraging messages undergraduates receive about teaching careers, discouraging messages they receive about the career, and their prior teaching and learning experiences. A known limitation of this framework is that it does not address the broad array of sociocultural and psychological influences that Eccles and her colleagues purport affects an individual's occupational perceptions and values. These influences include, for example, gender and occupational stereotypes, among many others. To limit the scope of this study, I have not included measures for these influences.

Perceived Teaching Ability

Perceived teaching ability is one's belief about how well he or she would perform the general task of teaching (Watt & Richardson, 2007). Whereas the Eccles model differentiates between one's expectancy for future success with a task and self-concept related to one's current abilities (Eccles [Parsons] et al., 1983), this study adopts Watt and Richardson's convention of focusing only on self-concept of ability because at least one study has shown the two concepts to be empirically indistinguishable (Eccles & Wigfield, 1995).

Task Perceptions

According to Eccles' model, how difficult one perceives a task or career to be, or its *task demand*, affects whether or not one chooses to pursue that task or career (Eccles [Parsons] et al., 1983). Whereas the Eccles model focuses on the demand aspect of task perception, Watt and Richardson's (2007) framework includes both *task return* and *task demand* dimensions of task perception. To maintain consistency with Watt and Richardson's work, I adopted their convention of using both constructs. In my framework, task demand refers to one's assessment of the degree to which teaching is a highly demanding career that requires expert knowledge, a heavy workload, or high emotional demand. Task return pertains to the extent to which teaching is a career which affords high social status, high morale, and a competitive salary.

Subjective Task Values

Subjective task value refers to how a task meets different needs of a particular individual (Wigfield, Tonks & Klauda, 2009). My framework asserts that four subjective task values influence an individual's intent to pursue a career in teaching: *interest value, personal utility value, social utility value*, and *perceived cost*. These task value constructs parallel those in Watt and Richardson's (2007) model with the exception of *perceived cost*, which is present in Eccles' and colleagues' theoretical work but not Watt and Richardson's. I adopt Eccles' and colleagues' (1983) definitions for *interest value* and *perceived cost*, and Watt and Richardson's (2007) convention of differentiating between *personal* and *social utility value,* which are adaptations of Eccles' term *utility value*.

Put in the context of a teaching career, interest value is the enjoyment one expects to experience while engaged in teaching. Perceived cost, on the other hand, is the

anticipated financial, opportunity, or other personal costs of teaching as compared to entering into a different occupation. These costs might include, for instance, tuition expenses for a teaching credential, extra time and effort required to earn the teaching credential, lower wages than other career options, and/or less time for other valued activities. Utility value refers to the usefulness of a task or career option with regard to how well it fits into an individual's future plans (Eccles, 2009). Social utility value is the extent to which a teaching career allows an individual to meet his or her short- or long-term social goals (Watt & Richardson, 2007). For an individual with a goal of impacting the lives of at-risk children, for example, teaching in a low-income area might have a high social utility value. Similarly, personal utility value is the extent to which a teaching career allows the individual to meet his or her short- or long-term personal goals.[4] For instance, one might have a personal goal of earning a salary sufficient to live a particular lifestyle, or having vacation time to spend with family and friends. If an individual values ample vacation time and she perceives that teaching offers long summers off, she might attach a high personal utility value to teaching.

Teacher Certification and Recruitment Policy Context

The outer box in Figure 1 symbolizes the broader teacher certification and teacher recruitment policy context in which this theoretical framework exists. Teacher recruitment policies are designed to influence one or more of the constructs in the model. Although policymakers have created an array of recruitment initiatives, this study focuses

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[4] Watt and Richardson note that their personal utility value construct was developed to measure what they term "subjective attainment value" (p. 171). They labeled the construct personal utility value because they believe this term is a "more intuitively accessible label than subjective attainment value" (p. 171). I discuss Eccles' and colleagues' (Eccles [Parsons] et al., 1983) conceptualization of attainment value in Chapter 2.

on two prevalent efforts aimed at attracting academically-talented individuals to at least short-term careers in the classroom by reducing the perceived cost of teaching: financial incentives and alternative certification programs. Highly-selective alternative certification programs such as Teach for America may also aim to improve perceptions of teaching's task return by raising the social status of the career.

Many policymakers, practitioners and researchers operate under the assumption that high-achieving individuals pay a particularly steep opportunity cost with regard to salary in order to teach—that is, these individuals have occupational alternatives that offer substantially higher wages than teaching, and these alternatives may pull them away from the field. Financial incentives and alternative certification programs aim to reduce the time and monetary opportunity costs that may accompany teaching careers. Whereas financial incentives augment the pecuniary rewards of teaching, alternative certification programs either reduce the time and cost associated with preparing to teach or allow interested and talented candidates to make a short-term commitment to teaching before pursuing other career opportunities (e.g., Teach for America).

The Teacher Pipeline

Throughout this study, I use the notion of a teacher pipeline for modeling the path to becoming a teacher and organizing the discussion of teacher supply. The conceptual model of the typical public school teacher pipeline, as shown in Figure 2, portrays the multiple routes into the classroom and demonstrates some of the stages through which an individual may pass as he or she becomes increasingly committed to a teaching career. Figure 2 is not intended to capture the complexity of the various pathways through which one might enter or exit the teacher pipeline, but to clarify the definitions of and

relationships among terms used throughout the study. Although this figure models the

typical public school teacher pipeline, this study focuses on interest in a K-12 teaching

career in general, not specifically one in the public schools.

Uncommitted   Committed
←- →

Prospective Teachers

Preservice Teachers

Inservice Teachers

| Interest in Teaching Career | Engaged in Traditional Teacher Preparation | Certified to Teach, but Not Teaching | Currently Teaching |

Engaged in Alternative Teacher Preparation

Engaged in Alternative Teacher Preparation While Teaching and Working toward Full Teacher Certification

Figure 2. Model of the Typical Public School Teacher Pipeline

This conceptualization of the teacher pipeline includes three groups of

individuals: prospective teachers, preservice teachers, and inservice teachers. The

commitment arrow at the top of Figure 2 reflects the idea that these three groups of

individuals may vary with regard to their level of commitment to a teaching career, but

that, in general, individuals enrolled in a teacher preparation program or those currently

teaching are more committed to a teaching career than their counterparts who are also interested in the profession, but are not enrolled in a preparation program.

All would-be teachers start out as *uncommitted prospective teachers* who have an interest in the field, but are not fully decided on whether or not they will teach and are typically not engaged in a program of teacher preparation. Once they make an initial commitment to a career in teaching, most prospective teachers spend a substantial amount of time as preservice teachers. *Preservice teachers* are either enrolled in a program of teacher preparation and working toward their teaching certificate, or have already completed their program and earned their teaching certificate, but are not currently teaching. Uncommitted prospective teacher and preservice teacher are not mutually exclusive terms, because an individual might be enrolled in a teacher preparation program but still uncertain about whether they will complete the program or teach. To reflect this overlap, I empirically define uncommitted prospective teachers in this study using one survey item about respondents' level of interest in and commitment to a teaching career. By this definition, some participants labeled as uncommitted prospective teachers in the study were also preservice teachers who reported being uncertain about teaching after graduation.

Individuals who currently hold a teaching job are *inservice teachers*. Figure 2 demonstrates that some alternative certification programs (e.g., D.C. Teaching Fellows, Teach for America) allow interested prospective teachers a pathway into the classroom before they complete all the requirements for full teacher certification. Individuals in these types of alternative certification programs are employed as inservice teachers while they work toward full certification. Though these types of alternative certification

programs exist, the majority of new teachers enter the classroom after completing a traditional teacher preparation program and earning their teaching certificate (National Center for Education Information, 2011).

Given that the undergraduate years are a formative time for career decision making, this study's population of interest is undergraduate students who (a) demonstrate high levels of academic achievement[5] and (b) have an interest in a teaching career, but are uncertain whether they will teach after graduation (i.e., uncommitted prospective teachers). In other words, this investigation concentrates on high-achieving undergraduates who have thought about teaching in the past or are in the process of deciding whether to teach.

Research Questions

Guided by its theoretical framework and conceptual model of the teacher pipeline, this study uses qualitative and quantitative methods and data to investigate the following research questions:

1. To what extent are uncommitted prospective teachers' intentions to pursue a teaching career related to the following expectancy-value factors:
    a. Messages they receive about teachers and a teaching career and their previous teaching and learning experiences;
    b. Their perceived teaching ability;
    c. Their task perceptions of teaching (perceptions about task demand and task return);

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[5] High SAT/ACT scores, as defined in Chapter 3.

      d.   Their subjective task values for a teaching career (interest value, personal

          utility value, social utility value, and perceived cost).

2. How do the relationships between the expectancy-value factors outlined in

    question one and intent to pursue a teaching career affect higher-achieving,

    uncommitted prospective teachers, in particular?

3. What reasons do uncommitted prospective teachers give for not pursuing teacher

    certification while completing their bachelor's degree?

4. What types of policies and/or incentives might encourage high-achieving,

    uncommitted prospective teachers to become teachers?

Study Significance

This line of inquiry makes theoretical and empirical contributions to the teacher

recruitment literature and has implications for teacher recruitment policy and practice.

Empirically, this study produces evidence on how prospective teachers perceive a career

in teaching and which factors have the most impact on their teaching-related career

decisions. Study results also contribute to the theoretical literature on Eccles' and

colleagues' expectancy-value model (Eccles [Parsons] et al., 1983) and Watt and

Richardson's (2007) FIT-Choice framework by testing whether these models' constructs

apply with a new population in an unexplored occupational context: uncommitted

prospective teachers' intent to pursue a teaching career. Finally, this investigation has the

potential to influence teacher recruitment policy and practice by informing the design of

recruitment policies aimed at attracting academically-talented individuals to the

classroom. By knowing what these undergraduates find attractive and unattractive about a

teaching career, policymakers can more effectively tailor their initiatives to increase the likelihood that interested and talented prospective teachers will choose to teach.

Limitations

Though this study makes valuable contributions to research, policy and practice, it is not without limitations. First, the undergraduate, uncommitted prospective teacher population is challenging to isolate because students who have an interest in teaching do not necessarily enroll in a predictable pattern of courses or major in the same discipline. To reach this population, I targeted a convenience sample of students who enrolled in one of a subset of courses focused on teaching-related topics at one university. This university is a selective,[6] Research 1 institution located in the mid-Atlantic region of the United States, where the cost of living is high relative to other geographic regions. The majority of participants in both phases of the study were white females majoring in a discipline other than education with combined critical reading and mathematics SAT scores at or above 1200. I report additional demographic data about the survey and focus group samples in Chapter 3. Because this study does not employ a randomized sample representative of multiple types of institutions or of the uncommitted prospective teacher population, results may have limited generalizability beyond similar institutional contexts and student populations.

Second, though the survey sample is moderately sized ($n = 664$), fewer than half of those subjects were uncommitted prospective teachers and only about a fifth were high-achieving, uncommitted prospective teachers. The smaller numbers of subjects with

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[6] The middle 50 percent of admitted freshmen for fall 2014 at this university scored between 1260 and 1410 on the SAT.

these particular characteristics may have affected the results of some of the quantitative analyses.

A third limitation concerns the use of standardized test scores as a single measure of teacher and student academic achievement. The studies that link teacher academic skills to student achievement measure both of these constructs using standardized achievement tests (see Chapter 2). Standardized tests frequently suffer from limitations related to their correlations with demographic factors such as race and socioeconomic status, as well as their limited ability to measure complex subject matter knowledge and pedagogical skills. Teacher quality and student learning are too complex to be measured by standardized tests alone; to be clear, teacher test scores are not synonymous with teacher quality and student achievement scores are not synonymous with student learning. These tests do, however, provide useful and reliable information when used in accordance with their strengths and limitations. Because practitioners and policymakers commonly uses these scores as a measure of teacher and student achievement, I have elected to employ them as such in this study.

Fourth, a known limitation of this investigation is that it measures respondents' intentions to pursue a teaching career rather than their actual post-graduate career actions. Although this study captures many students' thoughts and perceptions while they are in the process of making career decisions, it does not employ a longitudinal design and consequently, does not investigate relationships among decision factors and entry into the K-12 classroom.

CHAPTER 2: REVIEW OF LITERATURE

In this chapter, I review three sets of literature that inform the study of high-achieving, uncommitted prospective teachers' perceptions of a teaching career and the factors that influence their career choices. The first set of literature speaks to issues related to inservice teachers' levels of academic achievement, as measured by standardized tests, institutional selectivity, and undergraduate grade point average. This section reviews what we know about the empirical relationship between teacher academic achievement and student achievement and summarizes findings on how prospective and inservice teachers' achievement levels compare with those of the general college graduate population and how the achievement levels of the teacher workforce have changed over time. Findings from this set of literature demonstrate that teachers' academic achievement, as measured by their standardized test scores on particular assessments, predict student achievement and that over the past half century, higher-achieving individuals are choosing to teach.

The second set of literature suggests factors that may influence uncommitted prospective teachers' career decisions. This section begins by examining findings on college and high school students' teaching-related perceptions and then turns to reasons why prospective teachers, especially those with strong academic abilities, exit the teacher pipeline. These studies illuminate what students and prospective teachers think about a career in teaching and what issues or experiences may discourage them from teaching. In the second half of this section, I discuss two of the most common recruitment policies targeted at bringing academically-talented individuals to careers in teaching: alternative certification programs and financial incentives.

As described in Chapter 1, the theoretical framework for this study is an adaptation of Watt and Richardson's (2007) version of Eccles' and colleagues' expectancy-value model of achievement motivation (Eccles [Parsons] et al., 1983). This framework serves to suggest factors that might influence uncommitted prospective teachers' career decisions. It is also a useful analytic tool for interpreting and organizing data and developing themes that emerged throughout the study. With these purposes in mind, the third section of this chapter provides a more detailed description of the Eccles model by defining its key constructs and reviewing empirical evidence supporting the model. It also discusses findings from studies that have used the model to frame occupation-related research questions similar to those for this study.

Together, the three sets of literature summarized in this review serve three key purposes. The first section defines the problem as a decline in the number of high-achieving individuals who choose to teach, and the second section suggests a range of perception-related and policy-related factors that might influence these individuals' teaching-specific career decisions. The third section of the review highlights yet additional factors—as modeled by expectancy-value theory—that are unexplored in the empirical literature and that might affect the decisions of high-achieving, uncommitted prospective teachers.

Given the breadth of literature included in this review, as well as the depth of particular strands, I selected studies that represent the overall findings in each domain. I located the empirical work presented in this chapter through a process of searching (a) the EconLit, Education Index Retrospective, Education Research Complete, PsycARTICLES, Psychology and Behavioral Sciences Collection, and PsycINFO online

databases; (b) relevant books and book chapters; and (c) the reference lists of important studies. In domains with a robust literature base (e.g., teachers' academic achievement, expectancy-value theory), I selected studies that were cited frequently in the literature and were empirically rigorous. In areas where the literature was more sparse (e.g., college and high school students' perceptions of teaching), I included all relevant studies. The following review represents a synthesis of the findings gleaned from these search and inclusion strategies.

Teacher Academic Achievement

The population of interest in this study is uncommitted prospective teachers, especially those with high levels of academic achievement compared to their national peers. I define *academic achievement* as a broad concept referring to one's capacity to successfully perform educational tasks. These tasks are often cognitive in nature, meaning they draw on perception, memory, acquisition of knowledge and expertise, comprehension and production of language, problem solving, creativity, decision making, and reasoning (Kellogg, 1995). Academic achievement is frequently measured in a school or collegiate setting by written assessments such as standardized tests or cumulative measures of performance such as teacher-assigned grades or grade point averages. Researchers use several measures for academic achievement, including standardized tests (e.g., college entry exams, IQ, high school and other achievement tests, teacher licensure exams), institutional selectivity, and undergraduate grade point average.

Throughout this study, the modifier "high-achieving" refers to academic achievement as measured by the individual's composite critical reading and mathematics SAT/ACT score; thus, the literature reviewed in this section focuses, where possible, on

findings from studies that analyze this particular measure. Though SAT/ACT tests do not capture academic skills individuals might gain while completing their bachelor's degrees or those they acquire from additional postsecondary training or occupational experience, they are a valuable analytical tool because (a) evidence links these scores to improved student achievement (Ferguson & Ladd, 1996); (b) the scores are standardized, which allows for comparisons among groups; and (c) unlike most other achievement indicators, SAT/ACT scores are available for most study participants.

The sections below review findings from studies that examine the relationship between teachers' test scores and student achievement. They also summarize what cross-sectional and longitudinal studies tell us about how prospective, preservice, and inservice teachers' academic achievement levels compare with their non-teaching peers.

Teacher Academic Achievement and Student Achievement

Of the specific, measurable attributes researchers have examined, teachers' test scores emerge as one of the strongest, positive predictors of student achievement. Meta-analyses of extant studies that examine teachers' scores on various standardized tests, such as college entry exams and teacher certification exams, reveal that compared with other teacher attributes, teachers' test scores have a relatively consistent, albeit small, positive effect on student achievement (Greenwald et al., 1996; Hanushek, 1997; Wayne & Youngs, 2003).

Results from several empirical studies demonstrate that, in general, students of teachers who score highly on standardized tests perform better than students of teachers on the lower end of the test score distribution (Ferguson, 1991; Ehrenberg & Brewer, 1994; Ehrenberg & Brewer, 1995; Ferguson & Ladd, 1996; Rowan, Chiang & Miller,

1997; Clotfelter, Ladd & Vigdor, 2007; Clotfelter, Ladd & Vigdor, 2008). For instance, Ferguson (1991) studied the relationship between Texas teachers' recertification exam score (TECAT), which measured basic literacy skills, and their students' reading and mathematics achievement scores in nearly 900 school districts with a total of 150,000 teachers. Study results demonstrate that after controlling for a range of student, teacher and school factors, the district's average teacher TECAT scores explained between one fifth and one quarter of all variation in students' average reading achievement across districts for third, fifth, seventh, ninth, and eleventh grades.

Ferguson and Ladd (1996) also found evidence of a positive relationship between teachers' ACT scores and student achievement using data from Alabama. The researchers conducted two sets of analyses: A student-level, value-added analysis of a single cohort of almost 30,000 fourth grade students in 690 schools in 1990-91; and a district-level analysis of student learning gains between the fourth and ninth grades in 127 public school districts. Results from their student-level analysis demonstrate that after controlling for several school, teacher, and student factors, a one standard deviation increase in a teacher's ACT score would have resulted in one-tenth of a standard deviation increase in student reading scores from third to fourth grade. Though seemingly small, the authors note that this predicted increase could have accounted for about half of the black-white test score gap in urban areas at the time of the study. Findings from the student-level analysis indicate a positive, but statistically insignificant, relationship between teacher ACT scores and student achievement in mathematics for fourth graders.[7]

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[7] After controlling for a similar set of school, teacher and student factors in their district-level analysis, Ferguson and Ladd (1996) found a positive relationship between the average teacher test score in the

More recently, Clotfelter, Ladd and Vigdor (2007) used value-added modeling to analyze longitudinal data from 1995-2004 for all North Carolina third, fourth, and fifth grade students who could be matched with their reading and math teachers. Controlling for fixed-effect and variable student and teacher characteristics and variable classroom characteristics, the researchers identified a positive, statistically significant relationship between teacher and student test scores, but the effect was much smaller than the classroom-level effects identified in Ferguson and Ladd's (1996) study a decade earlier. Clotfelter and colleagues' findings indicate that an elementary teacher who scored one standard deviation above the average on an exam that tested elementary curriculum, instruction and assessment would increase student achievement scores by between 0.011 and 0.015 standard deviations. Contrary to Ferguson and Ladd's (1996) findings, the effects in Clotfelter and colleagues' study were more pronounced for student achievement in mathematics than in reading. Their results indicate a non-linear relationship between teacher test scores and student math achievement. Teachers who scored two or more standard deviations above the average increased student math scores by 0.068 standard deviations above the average teacher, and teachers who scored two or more standard deviations below the average reduced achievement gains by 0.062 standard deviations.

In a similar investigation at the high school level, Clotfelter, Ladd and Vigdor (2008) used data from statewide North Carolina end-of-course tests to investigate the relationship between teacher credentials and student achievement. Their sample included

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district and the average mathematics achievement gain in the district for both fourth and ninth grade students.

four cohorts of students who were in the tenth grade between 1999 and 2003. Controlling for a variety of student, classroom, and teacher characteristics, the authors found a relationship between teachers' Praxis II scores and students' overall achievement scores that was similar in magnitude to the relationship between test scores and student achievement identified in their elementary study (Clotfelter et al., 2007). As noted by the researchers, the teacher test score coefficient for the model in the high school study was 0.010 and similar coefficients in the elementary study were 0.011 and 0.015. In addition, the authors' high school results indicate that teachers' math Praxis scores were particularly influential in predicting students' algebra and geometry scores.

The standardized tests used to assess teachers' academic achievement in the aforementioned studies differ, and though they are all associated with gains in particular student groups' reading or mathematics standardized test scores, it's not clear whether they assess specific academic skills, general cognitive ability (i.e., general intelligence),[8] or some other latent factor. It is clear, however, that these tests are tapping an influential concept. As Corcoran (2007) notes, although teacher standardized tests are unable to capture valuable aspects of teacher quality beyond academic and cognitive skills, it's reasonable to expect that teachers should have moderately strong academic skills given that those are the skills they work to develop in students.

Academic Achievement and the Teacher Pipeline

Over the last several decades, researchers have employed a number of large, longitudinal datasets to explore how individuals within and outside the teacher pipeline

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[8] The ACT is an exception to this statement. Koenig, Frey and Detterman (2008) have demonstrated that the ACT is associated with *g* (general intelligence).

compare on various indicators of academic ability/achievement (e.g., IQ, teacher test scores, selectivity of undergraduate institution, undergraduate grade point average). Findings from these analyses demonstrate that by most indicators,[9] individuals who are interested in teaching, prepare to become teachers, or assume teaching positions have lower measured academic achievement, on average, than their counterparts who are less attracted to careers in teaching. Evidence also indicates that though the average academic achievement of female teachers, who make up the majority of the teaching force, has declined only slightly over the last half century, the likelihood that the highest-achieving women will teach has dropped more dramatically (Corcoran et al., 2004; Corcoran, 2007).

The teacher pipeline literature makes comparisons among individuals at various stages in and outside the pipeline. Because some of these groups (e.g., individuals who do not enter the teacher pipeline) never take teacher licensure exams like the Praxis or the TECAT, researchers often examine differences in scores on college entry exams. In the following sections, I review what the literature tells us about individuals' college entry exam scores throughout the teacher pipeline and then briefly discuss how these individuals differ on other measures of academic ability/achievement. I conclude the section by reviewing evidence on how teachers' academic achievement, as measured by their standardized test scores, has changed over time.

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[9] Undergraduate grade point average is an exception to this pattern: college students who consider teaching and graduates who become teachers earn higher undergraduate GPAs, on average, than their non-teaching peers (Henke et al., 1996; Henke et al., 2000; Goldhaber & Liu, 2003). As discussed later in this chapter, however, Goldhaber and Liu (2003) argue that grades in education courses may be artificially higher than those in other disciplines due to grade inflation and/or lower standards.

College entry examination scores and other indicators of academic skills. Of the studies that examine differences in the academic skills of individuals throughout the teacher pipeline, the majority use large, national datasets that include college graduates' SAT or ACT scores and their occupations. Two of these studies use data from the National Longitudinal Study of 1972 High School Seniors (NLS72) (Vance & Schlechty, 1982; Manski, 1987) and three employ more recent data from the Baccalaureate and Beyond Study of 1992-1993 college graduates (B&B:93) (Henke et al., 1996; Henke et al., 2000; Alt et al., 2007). One study uses Missouri state administrative data to make college entry exam comparisons within one state (Podgursky, Monroe & Watson, 2004).

Results from two analyses of the NLS72 dataset indicate that in the late 1970s, the choice of teaching as an occupation was inversely related to individuals' SAT scores (Vance & Schlechty, 1982; Manski, 1987). One study found that although a proportionate number of respondents who taught after graduation scored in the middle quintile on the SAT for verbal achievement (21%) and mathematical reasoning achievement (20%), substantially fewer scored in the top quintile on the SAT verbal (9%) and math reasoning (7%) sections (Vance & Schlechty, 1982).

Analyses of data collected two decades later in the Baccalaureate and Beyond longitudinal survey of 1992-1993 college graduates reveal similar, yet less pronounced, patterns with regard to college entry exam scores. Results from the 1994 follow-up to the B&B survey (B&B:93/94) indicate that fewer college graduates with the highest SAT/ACT composite verbal and mathematics scores demonstrated interest in or took steps to pursue a teaching career (Henke et al., 1996). Henke and colleagues (1996) found that a representative proportion of the graduates who reported *considering* a career in

teaching (but not preparing to teach[10] or teaching) scored in the top SAT quartile (25%), whereas smaller proportions of the respondents who reported *preparing* to teach (but not teaching) (18%) and of the respondents who reported *teaching* (18%) scored in the top quartile.

Findings from analyses of data from the B&B:93/97 suggest discrepancies in the SAT scores of respondents who were more inclined toward a teaching career and those who were less inclined. Results from Henke and colleagues' (2000) study reveal that college graduates who had prepared to teach and taught had lower SAT mathematics, verbal and composite scores than their peers who had (a) not entered the teacher pipeline (i.e., had not considered teaching, applied for a teaching position or taught); (b) considered teaching or had applied for a teaching job but had not taught; and (c) taught but had not prepared to teach. Notably, graduates who taught but had not prepared to teach had higher verbal, math and composite scores than any other group. This finding may be a result of the propagation of alternative certification programs that recruit and select for individuals with strong academic qualifications.

In addition to college entry exam scores, researchers have used a variety of other indicators to approximate academic achievement and ability. These indicators include IQ (Murnane et al., 1991; Bacolod, 2007), high school and other achievement tests (Murnane et al., 1991; Hanushek & Pace, 1995; Bacolod, 2007), teacher licensure exams (Murnane et al., 1991), institutional selectivity (Ballou, 1996; Goldhaber & Liu, 2003), and undergraduate grade point average (Henke et al., 1996; Henke et al., 2000; Goldhaber &

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[10] Throughout the Baccalaureate and Beyond reports (Henke et al., 1996; Henke et al., 2000; Alt et al., 2007), "preparing to teach" is defined as having either completed student teaching at a National Postsecondary Student Aid Study (NPSAS) institution or having earned provisional, regular, or advanced certification to teach.

Liu, 2003). Findings from these studies parallel those of studies that analyze college entry

exam scores: results indicate that, on average, individuals who become teachers have

lower academic achievement or ability levels than their counterparts who choose to

pursue other occupations. Undergraduate grade point average is an exception to this

pattern. Findings from several studies reveal that college students who consider teaching

and graduates who become teachers often earn higher undergraduate GPAs than their

non-teaching peers (Henke et al., 1996; Henke et al., 2000; Goldhaber & Liu, 2003).

Goldhaber and Liu (2003) purport that one possible explanation for why

prospective, preservice and inservice teachers have higher undergraduate GPAs but lower

college entry test scores than their peers is that a substantial portion of these students

major in education, which they suspect may be associated with inflated grades. Henke

and colleagues' (1996; 2000) data demonstrate that with the exception of humanities

majors, education majors earn higher cumulative and major GPAs than their counterparts

in other fields of study. Although not everyone who prepares to teach majors in

education, many do. At least in the mid-1990s, the majority of elementary-level teachers

(76%) majored in education, whereas just under half (47%) of secondary-level teachers

did so (Henke et al., 1996). These percentages may be decreasing at least slightly,

however, due to increases in subject-specific preparation requirements for secondary-

level teachers. Though students who major in education may earn higher grades than

those who specialize in other disciplines, it is difficult to disentangle whether these

grades reflect academic achievement, cognitive ability, effort, or one or more of many

other possible factors. Because grade point average is a relative measure that differs

across disciplines and instructors, I have elected not to use it as an indicator of academic achievement in this study.

Academic achievement of the teaching force over time. Evidence from two longitudinal studies indicates that the average achievement level of the teaching force, as measured by teachers' standardized tests scores, has declined at least slightly over the past fifty years (Murnane et al., 1991; Bacolod, 2007). Moreover, individuals who score highest on these measures, especially women, are less likely to become teachers than they were in previous decades (Corcoran et al., 2004).

Results from two analyses of NLS-YM, NLS-YW, and NLS-Y79 data[11] reveal that teachers' scores on an IQ test and the Armed Forces Qualifying Test (AFQT) declined in the second half of the twentieth century (Murnane et al., 1991; Bacolod, 2007). Among respondents who were in their late 20s in 1970, 30 percent of those who scored above the 80th percentile on IQ and AFQT tests became teachers (Bacolod's, 2007), but this percentage declined to just 8-9 percent among similar respondents who were in their late 20s in 1990. Results from Murnane and colleagues' (1991) analysis demonstrate a similar pattern. They found that in 1967, college graduates with IQ scores of 100 and 130 were almost equally as likely to enter teaching, but by 1980, a graduate with an IQ score of 100 was more than four times as likely to become a teacher as a graduate with a score of 130.

Using data from five longitudinal surveys of high school graduates from the classes of 1957 through 1992, [12] Corcoran, Evans and Schwab (2004) found that the

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[11] NLS-YM = National Longitudinal Survey of Young Men; NLS-YW = National Longitudinal Survey of Young Women; NLS-Y79 = National Longitudinal Survey of Youth-79.
[12] These surveys included: Wisconsin Longitudinal Survey (WLS) for the class of 1957, Project Talent for the classes of 1960-64, The National Longitudinal Survey of the High School Class of 1972 (NLS-72),

average academic achievement of new female teachers,[13] as measured by centile rank in the distribution of high school graduates on a test of verbal and mathematical aptitude,[14] fell by only three percentage points during this time period. More remarkably, the researchers found a sharp decline between 1960 and 2000 in the propensity for women with the highest achievement test scores to choose teaching. Whereas in the 1960s, 15-17 percent of women who scored in the top decile could be predicted to teach, this figure fell to 6-8 percent by the 1990s (Corcoran, 2007). In the 1960s, top-scoring women were more than twice as likely to teach as the average female high school graduate; by 2000, these high-scoring women were only slightly more likely to teach than the average high school graduate (Corcoran, 2007). Interestingly, Corcoran and colleagues (2004) found an opposing pattern among men; their findings indicate that male teachers' average relative test score ranking rose 6.6 percent between 1964 and 2000. Caution should be used when interpreting these results, however, due to small sample sizes of male teachers.

Summary

The studies in this section provide evidence for three arguments that form the foundation of the proposed study. First, teacher academic achievement, as measured by standardized test scores including the ACT, is one dimension of teacher quality that has been empirically linked to improved student achievement. Second, college graduates who

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High School and Beyond (HSB) for the class of 1982, and the National Education Longitudinal Survey (NELS) for the class of 1992 (Corcoran et al., 2004).

[13] The authors do not specify how they define "new teachers."

[14] The tests or batteries of tests administered to each of the five longitudinal cohorts differed, but Corcoran and colleagues (2004) argue that the content of each test was similar to standardized exams like the SAT and ACT. In fact, for students who had both a test score and an ACT/SAT score, the correlation between the two measures was over 0.80.

consider a career in teaching tend to have higher achievement levels, as measured by college entry exam scores and other indicators, than those who prepare for teaching or become teachers. In other words, at some point in their career decision-making process, a substantial proportion of high-achieving individuals who are interested in teaching choose other careers. Third, the proportion of individuals, especially women, with the highest achievement levels who elect to teach has been declining rather precipitously over the past half century.

Factors that May Influence Uncommitted Prospective Teachers' Career Choices

I now turn to two strands of literature that shed light on the factors that undergraduates who consider a career in teaching (i.e., uncommitted prospective teachers) might weigh when deciding whether to teach. First, I summarize what we know about college and high school students' perceptions of a teaching career and why these individuals might choose not to teach. Second, I present two common policies aimed at recruiting academically-talented prospective teachers—alternative certification programs and financial incentives—as additional factors that may affect teaching career decisions.

Students' Perceptions of Teaching

Over the past half century many researchers have investigated what motivates preservice teachers (i.e., those who are preparing to teach) to pursue a career in teaching (e.g., Haubrich, 1960; Richards, 1960; Fox, 1961; Jantzen, 1981; Brookhart & Freeman, 1992; Serow, Eaker & Ciechalski, 1992; Young, 1995; Moran, Kilpatrick, Abbott, Dallatt & McClune, 2001). Few, however, have explored what individuals who are considering a career in the field find attractive or unattractive about the occupation. In fact, I was able to locate only four studies that examine this particular topic with the general

undergraduate or recent college graduate populations (Kyriacou & Coulthard, 2000; Alt et al., 2007; Auguste, Kihn & Miller, 2010; Hiler & Hatalsky, 2014). Several qualitative studies add to our understanding in this domain by identifying factors that ethnic minority college and high school students find attractive and unattractive about teaching (Smith, Mack & Akyea, 2004; Ramirez, 2010; Graham & Erwin, 2011; Bianco, Leech & Mitchell, 2011).

College students and graduates. A policy recommendation piece published by management consulting firm McKinsey & Company provides the most relevant information about high-achieving undergraduate students and how they view a teaching career (Auguste, Kihn & Miller, 2010). To inform their policy recommendations, the firm surveyed 900 "top-third" college students as defined by their SAT and ACT scores and grade point averages.[15] The survey asked respondents what they look for in a career and how they rank attributes of teaching compared to the career they plan to pursue.

Results indicate that the career attributes top-third students most value are: (1) the quality of co-workers, (2) prestige, (3) a challenging work environment, and (4) high-quality training. When asked to compare teaching with their planned profession, students rated teaching lower on every item reported in the analysis. Respondents reported gaps of 38-48 percent between teaching and their planned profession on several prestige items such as the strength of students the field attracts, whether people in the field are considered successful, and whether the field attracts the type of people with whom they would want to work. These findings demonstrate that many students in the top third of

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[15] Though the authors note that they surveyed students across "subject majors, race and ethnicity, gender, and geographies" (p. 26), they do not discuss how they identified their sample other than that it was part of "market research."

the achievement distribution find teaching to be deficient in prestige, an occupational trait they highly value. Gaps between teaching and their planned profession were smallest for items such as "My supervisor in this job would create a positive work environment" (16 percent gap) and "My family would be proud to tell people I had this job" (23 percent gap).

While respondents rated salary as less important than some other career attributes, the largest gaps between perceptions of teaching and their chosen occupations were with regard to financial rewards. For instance, whereas three-quarters of respondents agreed that they would be financially rewarded in their preferred occupation if they did well in the job, only 13 percent agreed with the item with regard to teaching. Results also revealed gaps of 48-55 percent between teaching and respondents' preferred occupations on salary-related statements pertaining to appropriate pay for the respondent's skills and effort, salary increases over time, and the ability to support a family. Respondents rated teaching equally poorly with regard to opportunities for professional advancement and promotion, and for being a "well resourced, professional environment."

For a policy piece similar to Auguste and colleagues' McKinsey & Company report, U.S. think tank Third Way recently polled 400 undergraduate students with a B+ or higher GPA who were not education majors[16] about their interest in and perceptions of teaching (Hiler & Hatalsky, 2014). Though 60 percent reported being "somewhat" or "very" interested in teaching, respondents overall rated education as the top profession "average" people go into, and half agreed that teaching "has gotten less prestigious in the last few years." When asked which education reforms would make them consider

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[16] The report does not specify the population the authors sampled.

teaching, respondents most frequently rated "paying all teachers more," "paying high performing teachers more," "encouraging more effective school leadership," and "offering student loan repayment to teachers" most highly.[17]

Though a decade older and set in the context of one post-secondary institution in the United Kingdom, results from Kyriacou and Coulthard's (2000) study also provide insight into some of the factors U.S. undergraduate students might consider when thinking about a teaching career. The study's survey assessed respondents' interest in teaching, their views on a variety of factors that might affect their career decisions, and their perceptions of the teaching profession. Findings suggest that the most influential career choice factors differ for undergraduates depending on their reported interest in teaching. Respondents who reported *seriously* considering teaching as a career rated the following five factors as most influential in their career decisions: (1) job enjoyment; (2) the ability to make a social contribution; (3) job security; (4) a pleasant working environment; and (5) intellectual challenge. Respondents who reported *not seriously* considering teaching rated some of the same factors highly, but their top five differed, and included: (1) job enjoyment; (2) getting along with colleagues; (3) good promotion prospects; (4) job security; and (5) a pleasant working environment. These findings, though not specific to high-achieving students, suggest that careers that offer intellectual challenge and the opportunity to contribute to society may be more attractive to individuals who consider teaching than careers with strong promotion prospects and congenial colleagues.

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[17] The report does not specify which other policies respondents were asked to rate.

Kyriacou and Coulthard's survey also asked respondents to rate how influential each of 14 factors might be in their career decisions about teaching, as well as how much each of 13 specific policy measures might encourage them to teach. Of the teaching factors, respondents most frequently indicated that long holidays, a desire to share knowledge with others, and no fees for teacher certification[18] would encourage them to consider teaching. On the other end of the spectrum, they identified disruptive pupils, bureaucratic tasks, and the amount of school funding as the three most discouraging factors. Of the policy initiatives presented on the survey, respondents rated an increase in the quality of resources for teaching, higher top salaries for teachers, and improvements in the working environment as most likely to encourage them to go into teaching. They rated two commonly-discussed U.S. policy initiatives, a higher starting salary and a reduction in class size, fourth and fifth (respectively).

Results from Alt and colleagues' (2007) analysis of the 2003 follow-up to the B&B:93 survey speak to how many individuals consider a career in teaching but ultimately pursue other occupations, and the reasons why these individuals decide not to teach. Their findings indicate that a substantial portion of college graduates who reported considering and/or preparing to teach do not end up teaching. Specifically, ten years after college graduation, 30 percent of the B&B survey sample of 1992-1993 college graduates had either considered teaching or applied for a teaching position at some point, but had not prepared to teach[19] and had not taught. A slightly higher percentage of the

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[18] It is unclear how the authors decided which items would be placed among the 14 factors that might influence career decisions about teaching and which would be placed among the 13 specific policy measures. For example, though the response option "fees are not charged for PGCE courses" appears to be a policy measure, it is included among the factors that might influence teaching items.

[19] Throughout the Baccalaureate and Beyond reports (Henke et al., 1996; Henke et al., 2000; Alt et al., 2003), "preparing to teach" is defined as having either completed student teaching at a National

respondents with SAT/ACT composite scores in the top third of survey respondents (33%) reported considering teaching or applying for a teaching position at some point, but not preparing to teach or teaching.

Data from the B&B:93/03 also provide some preliminary evidence for why individuals who are interested in teaching might not teach. One multiple choice item on the 2003 survey asked respondents who had reported that they were considering teaching or had prepared to teach but had not done so in the ten years following graduation to indicate why they had not applied for a teaching position. Among those with SAT/ACT scores in the top third of all respondents, 39 percent said they were not interested in teaching; 34 percent reported already having another job[20]; and 31 percent said they wanted a higher salary (Alt et al., 2007). Between three and six percent more of these top-scoring students than respondents overall indicated that each of these reasons contributed to their decisions not to apply for a teaching position.[21] Although the survey provided eight possible reasons for not applying for a teaching position,[22] 18 percent of respondents who had SAT/ACT scores in the top third of the sample and who at one point considered teaching reported having an "other reason" for not applying to teach. Though these B&B findings suggest some preliminary reasons why so many college

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Postsecondary Student Aid Study (NPSAS) institution or having earned provisional, regular, or advanced certification to teach.

[20] The response option "already in other job" does not specify whether the respondent was in another job during the time when they would have applied for a teaching position or is in another job at the time of the survey.

[21] Alt and colleagues (2007) did not test whether these differences were statistically significant.

[22] Other response options included: not yet certified, have not taken tests, teachers' working conditions, received better offer, and have not passed tests.

graduates consider teaching but choose other career options, the full range of influential

factors, values and perceptions remains unknown.

Minority students. While the literature on college students' and recent graduates'

perceptions of teaching careers is thin, due to a push to recruit and retain more minority

teachers, a growing literature base examines minority students' views. Though results

from these studies may represent the unique experiences of minority students, their

findings are informative insofar as they illuminate the teaching-related perceptions of a

subset of the general undergraduate or high school student population. Overall, results

from these studies indicate that while minority students perceive that teaching offers a

number of benefits, they also report a variety of barriers that discourage them from

entering the field.

For instance, Ramirez (2010) conducted focus groups with 76 ethnic minority

college students from several California university campuses to examine their views on

careers in teaching. Findings reveal that study participants were knowledgeable about

issues related to teacher preparation, education policy, and the career in general. Students

in Ramirez's study perceived three major benefits to being a teacher: the opportunity to

give back to the community, time off, and employment benefits (e.g., health insurance,

retirement program). They reported many more drawbacks, however, including: the time

and cost required to earn a credential; inadequate salary; low respect for the profession;

not being able to teach in their desired community; and government regulations (e.g.,

licensure tests, standards-based accountability, a narrowing curriculum). Results also

indicate that these students received negative messages about teaching from their

teachers, college counselors, and family members.

Despite the negative perceptions and messages, students noted a number of financial incentives that might encourage them to become teachers, some of which highlight the financial burden preservice teachers face when completing required teacher preparation credentials. Among these incentives were scholarships for teacher preparation courses; the ability to earn money as a teacher's assistant during student teaching; low interest rate home loans for teachers in low-socioeconomic communities; incentives for completing a master's degree; and increased pay for teachers who work with disadvantaged or low-performing students or schools (Ramirez, 2010).

Several teams of researchers have also investigated male, African American, high school students' perceptions of teaching careers (Smith et al., 2004; Bianco et al., 2011; Graham & Erwin, 2011). Two of these studies examine the views of high-achieving students within this population[23] (Graham & Erwin, 2011; Smith et al., 2004). In general, these studies focus less on policy issues than Ramirez's study and more on students' personal and social experiences in school. Findings indicate that high-achieving, African American, male high school students may be less interested in teaching careers than careers in computer science, engineering, medical/health, or business (Smith et al., 2004). Their low levels of interest in teaching may be due to a number of negative perceptions these students hold about teachers and teaching careers, such as the perception that teaching is a career with little respect in their communities (Bianco et al., 2011), and that teachers earn low salaries, have poor job satisfaction, and face student disciplinary

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[23] Smith and colleagues' sample was made up of African American male honors students; the study does not specify the criteria for being labeled "honors." Graham and Erwin's sample included students who (a) had an 11th grade academic classification; (b) had a weighted grade point average of 3.00 or higher; (c) had a minimum combined math and verbal SAT score of 1000; and (d) were currently enrolled in at least one Honor's, Advanced, Advanced Placement (AP), International Baccalaureate (IB), or four-year institution of higher education course.

problems in schools (Smith et al., 2004). Some students were deterred from teaching careers by their own negative experiences in school (Smith et al., 2011; Graham & Erwin, 2011) and/or by their teachers' negative talk about the occupation's pay and working conditions (Bianco et al., 2011).

Teacher Recruitment Policies

Policymakers at the national, state, district and school levels have responded to pressures to improve the quality of the teaching force by designing and implementing a range of policies and initiatives to address the issue. These policies aim to tackle the challenge of staffing every classroom with a qualified teacher, a task which Rice, Roellke, Sparks and Kolbe (2009) describe as "a multidimensional problem requiring a multidimensional policy response" (p. 521). According to Rice and colleagues, the teacher quality problem comprises four overlapping, but conceptually distinct challenges, including: (1) ensuring an adequate supply of quality teachers; (2) recruiting teachers to the schools and districts where they are most needed; (3) distributing teachers efficiently and effectively; and (4) retaining teachers in their classrooms and in the profession.

This study focuses on the first challenge—recruiting an adequate supply of quality prospective teachers to the profession, namely those with strong academic talents. When the demand for teachers exceeds the supply, a teacher shortage occurs. Shortages of high-achieving teachers are often a result of broader labor market forces in that academically-talented individuals may have more attractive employment opportunities outside teaching. To this point, some evidence suggests that non-teacher labor markets offer higher financial returns to academic qualifications (i.e., SAT scores, college selectivity, and technical academic majors) than teacher labor markets (Goldhaber & Liu,

2003). This means that in many markets, high-achieving individuals may pay a higher financial opportunity cost to teach than others without these qualifications.

Although evidence indicates that prospective and preservice teachers consider wages when choosing careers and/or jobs (Bacolod, 2007; Painter et al., 2007; Auguste, Kihn & Miller, 2010), hedonic wage theory, which undergirds most research on the teacher labor market, asserts that people care about both their job's monetary rewards and the various characteristics of their work environment. This theory suggests that when faced with occupational alternatives, individuals select the option that provides the combination of these non-pecuniary and pecuniary rewards that maximizes their personal utility (Chambers, 1981). What we do not know, and what this study begins to uncover, are high-achieving, uncommitted prospective teachers' financial and non-financial job preferences. If these individuals place a high value on salary, for instance, then the reduced financial reward in the teacher labor market for academic qualifications may be an influential factor in whether they decide to teach.

Assuming that high-achieving prospective teachers value financial rewards, policymakers have designed a variety of programs and initiatives to recruit these individuals into teaching by reducing the opportunity costs associated with preparing for a teaching career (e.g., lost wages, increased time and effort) and teaching (e.g., lower salary than in some fields). Two of the most common types of policies aimed at recruiting high-achieving individuals to the teaching profession are alternative certification programs and financial incentives. Alternative certification programs are designed to shorten the time it takes for preservice teachers to earn their licensure and assume a

teaching position, and financial incentives increase the pecuniary rewards individuals can earn while teaching.

Alternative certification programs attempt to offer shorter, more-convenient, less-costly, and more practically-oriented teacher preparation than traditional, university-sponsored programs (Johnson, Birkeland & Peske, 2005). Although the design, implementation, and effectiveness of alternative certification programs vary widely, these programs typically take one of two general, post-baccalaureate forms. The first form is designed for mid-career entrants to teaching. These programs often allow teachers to enter the classroom sooner than traditional, university-based preparation programs while still seeking to provide a comparably rigorous curriculum and training experience (Hirsch, Koppich & Knapp, 2001). The second type of alternative certification program is shorter (often 9-18 month) and more experience-based. These programs often provide a minimal level of training, typically a relatively short summer training experience, and expect that students will acquire necessary skills on the job (Hirsch et al., 2001). Alternative certification programs of both types attempt to limit the costs associated with teacher preparation by charging less than traditional, university-based programs and placing students into paid teaching jobs earlier, thereby reducing foregone wages. Highly-selective alternative certification programs such as Teach for America also aim to recruit academically-strong prospective teachers by requiring only a short-term commitment to the teaching profession.

Financial incentives are a second policy lever targeting academically-talented prospective teachers. The theory of action behind financial incentives is that prospective teachers care about money and that more money will reduce the financial opportunity

costs of teaching and/or compensate for some of the less-attractive, non-pecuniary aspects of teaching jobs (Rice et al., 2009). The goal of these incentives is to augment the supply of teachers with desirable characteristics, such as strong test scores, in the short term. In the long term, some financial incentives such as performance pay and merit pay aim to change the composition of the teaching force by retaining the most effective teachers and attracting new talent into the field (Hanushek & Lindseth, 2009).

Financial incentives come in many forms and vary along several dimensions such as size, duration, and eligibility criteria, among others. Policymakers have designed four types of financial incentives to attract prospective teachers to the profession, including: (1) salary schedule modifications; (2) salary enhancements; (3) limited-duration incentives; and (4) education- and training-related incentives.[24] Salary schedule modifications comprise policies such as state-mandated minimum salaries; across-the-board salary increases for all teachers or for teachers with particular qualifications in a state; alternative salary schedules for teachers with select qualifications; and "front-loaded" salary schedules that offer a disproportionately larger pay increase to teachers early in their career. Financial incentives also come in the form of salary enhancements, which provide additional pay for teachers in geographic or subject shortage areas or with particular certifications or credentials without modifying the salary schedule. Some states, districts, or schools offer limited-duration incentives such as signing bonuses, relocation assistance, credential or certification bonuses, performance-based awards, loan forgiveness, and/or home ownership assistance (Hirsch et al., 2001). Finally, financial incentives also include education- and training-related incentives such as preservice

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[24] These categories are based on Kolbe and Strunk's (2012) typology of economic incentives, but are slightly modified to reflect policies aimed only at prospective teachers.

teacher scholarships or stipends, grants to cover lost income during teaching internships, financial assistance for alternative certification programs, and tuition tax credits (Kolbe & Strunk, 2012).

Evidence on the ability of both alternative certification programs and financial incentives to recruit academically-talented individuals to the teaching force is complicated and inconclusive, due in large part to the diversity of alternative certification programs and the variety of financial incentives; thus, a full review of the comparative effectiveness of these recruitment policies is beyond the scope of this chapter.

Summary

The empirical research summarized in this section identifies a set of preliminary factors that may influence whether high-achieving, uncommitted prospective teachers choose to teach. Findings from the first literature base, college and high school students' perceptions of teaching, reveal what these students perceive to be attractive and unattractive features of teaching careers. Findings from two studies (Kyriacou & Coulthard, 2000; Ramirez, 2010) indicate that some undergraduate students perceive that teaching provides an opportunity to contribute to society, intellectual challenge, time off, and other attractive employment benefits (e.g., health insurance, retirement benefits). These and other studies also point to a series of factors that might deter prospective teachers from the field, including perceptions relating to: inadequate teaching salaries; the time and financial costs to earn a teaching credential; low social respect for the profession; low professional prestige; government regulations (e.g., licensure tests, standards-based accountability, a narrowing curriculum); lack of teaching jobs in one's desired community; disruptive pupils; bureaucratic tasks; and low school funding

(Kyriacou & Coulthard, 2000; Smith, Mack & Akyea, 2004; Ramirez, 2010; Auguste, Kihn & Miller, 2010; Bianco, Leech & Mitchell, 2011; Hiler & Hatalsky, 2014). Evidence also suggests that negative messages about teaching careers from previous teachers, college counselors, and/or family members shape some high school and college students' perceptions of teaching (Ramirez, 2010; Bianco et al., 2011).

The second half of this section discussed how teacher recruitment policies may also be factors that influence uncommitted prospective teachers' career decisions. This section introduced the hedonic wage theory, which asserts that individuals consider both pecuniary and non-pecuniary characteristics when deciding among career and job options, and emphasized that we know very little about the teaching-related preferences of high-achieving, uncommitted prospective teachers. Despite a lack of evidence on these individuals' preferences, two sets of policies—alternative teacher certification programs and financial incentives—have proliferated in an effort to augment the supply of teachers with desirable attributes such as high academic achievement by reducing the costs associated with teaching. These two recruitment initiatives, in addition to the various factors identified in the paragraph above, may be among the considerations high-achieving, uncommitted prospective teachers weigh when deciding whether to teach.

Eccles' Expectancy-Value Model: A Theoretical Foundation

As described in Chapter 1, the theoretical framework for this study is a close adaptation of Watt and Richardson's (2007) model for their Factors Influencing Teaching as a Career Choice (FIT-Choice) scale, which the researchers developed from constructs in Eccles' and colleagues' expectancy-value model. This study's theoretical framework is modeled after Watt and Richardson's (2007) adaptation because (a) they operationalized

Eccles' and colleagues' expectancy-value theory to relate to occupation-related questions pertaining to teaching and (b) they conducted a series of factor analyses to validate a scale that I adapted for use in this study. In order to set the stage for the constructs that undergird Watt and Richardson's scale, this section describes the history from which Eccles' and colleagues' model emerged, defines the model's theoretical constructs in more detail, and summarizes some of the research that supports those constructs. An understanding of Eccles' and colleagues' model sheds light on the various ways in which Watt and Richardson adapted the original theory's terms for the FIT-Choice scale. Throughout the first half of this section, I define Eccles' and colleagues' terms and highlight where Watt and Richardson's terms diverge. In the second half of the section, I review findings from studies that have used Eccles' model as a theoretical framework for answering occupation-related research questions.

Expectancy-value theory is one of the most influential theoretical perspectives on achievement motivation, which is an individual's desire to demonstrate competence in effortful activities (Elliot & Church, 1997). Achievement motivation theorists, in general, attempt to explain the factors that influence an individual's achievement behavior choices, as well as their persistence and performance on the tasks associated with those choices (Wigfield, Eccles, Schiefele, & Davis-Kean, 2006).

Atkinson and his colleagues developed the first systematic expectancy-value model of achievement motivation (Atkinson, 1958; Atkinson & Feather, 1966; Atkinson & Raynor, 1974). They asserted that achievement behavior was a function of (a) one's expectancy of attaining a particular outcome contingent on performing certain behaviors and (b) the value one placed on that outcome (Wigfield et al., 2006).

Although researchers continued to develop and refine Atkinson's expectancy-value theory through the 1980s (Crandall, Katkovsky, & Preston, 1962; Battle, 1965; Crandall, 1969; Feather, 1982, 1988, 1992), the most substantive extension was Eccles' and colleagues' expectancy-value model of achievement choice, which incorporates competence beliefs along with expectancy beliefs, among other constructs, and differentiates among varying aspects of achievement values (Eccles [Parsons] et al., 1983). Eccles and her colleagues also identified a variety of social and cultural influences on individuals' expectancies and values. Researchers have devoted significant empirical attention to Eccles' and colleagues' expectancy-value model over the last three decades, and findings have substantiated the validity of the theory and expanded the contexts in which it has been tested.

Defining Expectancy-Value Constructs in the Eccles Model

Eccles' and colleagues' expectancy-value model purports that the educational, occupational, and leisure-time activities in which an individual chooses to engage are primarily determined by two sets of beliefs: the individual's expectancies for success and the value the individual places on his or her perceived options (Eccles et al., 1999).

Expectancies for success and self-concept of ability. *Expectancies for success* are beliefs about how well one will perform on an upcoming task or in a specific career (Wigfield, Tonks & Klauda, 2009). These expectancies are influenced by many factors, including, among others, one's *self-concept of ability* in the domain (as defined below); his or her estimate of the difficulty of the task or the career; the individual's short- and long-term goals; his or her past experiences of success and failure in the domain; and

cultural factors, such as gender role stereotypes, cultural stereotypes of occupational

options and family demographics (Eccles, 2011).

One's *self-concept of ability* is a primary psychological predictor of one's

expectancies for success, which directly influence behavioral outcomes (Eccles, 2009).

Self-concept of ability is defined as an individual's perception of his or her *current*

competence in a domain, and expectancies for success are more specific beliefs about

one's *future* performance on a particular task (Eccles [Parsons] et al., 1983; Wigfield,

1994; Wigfield & Eccles, 2000). Though they are conceptually distinct, evidence

indicates that, thus far, expectancies for success and ability self-concepts are empirically

indistinguishable (Eccles & Wigfield, 1995; Wigfield & Eccles, 2000).

Eccles and her colleagues (Eccles [Parsons] et al., 1983) proposed that both

psychological and social factors contribute to one's self-concept of ability. These

psychological factors include one's previous experiences with the task or activity, his or

her aptitude in the task domain, as well as the amount of effort one must expend to

complete the task in comparison to his or her peers. An individual's causal attributions

about his or her performance also influence ability beliefs. For instance, individuals who

attribute difficulties to lack of effort or inadequate instruction, as opposed to lack of

talent or aptitude, are able to maintain higher self-concepts of ability and expectancies for

future success in the domain and are more likely to persist with the activity (Eccles,

2009).

Social factors also contribute to an individual's self-concept of ability. Among

these factors is one's cultural milieu, which is made up of gender role stereotypes and

cultural stereotypes of particular occupational characteristics (Eccles, Barber &

Jozefowicz, 1999). In addition, individuals who play an important socializing role, such as parents, teachers, and peers, influence one's self-concept of ability by sending messages about areas in which one is more or less competent. Eccles (2009) argues that these messages are often based less on direct information than on stereotypes and other socially-constructed belief systems. Socializers also have the potential to influence an individual's ability beliefs by suggesting causal attributions for that person's performance, which may influence the individual's own attributions over time.

Task perceptions. Eccles asserts that an individual's perceptions of a task, specifically perceptions related to how difficult or demanding a task might be, also influence behavioral outcomes and occupational choices. Though evidence indicates that self-concept of ability appears to be a more influential construct than perceived task difficulty, perceptions of task difficulty have the potential to influence self-concept of ability and hence, behavioral choices (Eccles et al., 1983). Over time, individuals develop lower estimates of their abilities for specific subjects, tasks, or activities that they perceive to be difficult. In this respect, perception of task difficulty may mediate the relationship between self-concept of ability and success expectancies.

Eccles and Wigfield (1995) examined correlations among expectancy and value factors identified through exploratory and confirmatory factor analyses in a longitudinal study of adolescents' achievement-related beliefs and self-perceptions. Their results identified a strong correlation between perceived task difficulty and amount of effort required to do well on a task (two dimensions of task perceptions). This finding suggests that for adolescents, the perceived difficulty of a task and the amount of effort required to do well on the task are closely related. They also found a positive correlation between

ability perception and task value factors (to be discussed further in the next section), and a negative correlation between both of these factors and perceived task difficulty. These results suggest that (a) adolescents tend to value activities for which they have a high self-concept of ability; (b) they are less likely to believe they are good at tasks they perceive to be difficult; and (c) they devalue activities they perceive to be difficult (Eccles & Wigfield, 1995). If generalizable to college students, each of these findings has implications for how students' perceptions of occupational difficulty and their abilities in occupational domains might contribute to their valuation of, and decisions regarding, particular occupational options.

      Subjective task values. The ways in which an individual values particular tasks or activities are among the most important motivational predictors of educational and occupational choices. In Eccles' and colleagues' model, subjective task value is defined as how a task meets an individual's different needs (Wigfield, 1994). Subjective task values are influenced by the individual's previous experiences with the task or similar tasks and his or her interpretations and memories associated with those experiences. One's short- and long-term goals, self-concept of ability in the domain, and self-schemata also influence task value, as do social influences such as cultural or social stereotypes of the task and influences from parents, teachers, and peers about the importance of, and difficulty involved with, the task (Eccles [Parsons] et al., 1983; Eccles & Hoffman, 1984; Eccles, 2009; Eccles, 2011). Subjective task value is defined in terms of four major subcomponents: (1) *interest value*; (2) *utility value*; (3) *attainment value*; and (4) *perceived cost*. Interest value, utility value, and attainment value affect the positive valence of the task and perceived cost affects its negative valence.

Interest value. Interest value is the enjoyment one anticipates experiencing while engaged in a particular activity or behavior (Eccles, 2009). Over time, individuals may develop increased competence at tasks for which they have high interest value and success with those tasks may then become integrated into their personal identity (Eccles, 2009). Through classical conditioning, the person may begin to value this new aspect of their identity because of their growing competence and enjoyment with the task. Ultimately, a task initially valued out of interest may become appreciated primarily because of its ability to affirm valued characteristics of oneself (i.e., because of its attainment value, as defined below) (Eccles, 2009).

Utility value. The utility value of a task, activity, or occupational option lies in its ability to facilitate one's short- or long-term goals or to allow one to acquire desired immediate or long-range external rewards (Eccles, 2011). This subcomponent of subjective task value is determined by the utility the task has for a future goal that may be somewhat unrelated to the present task (Eccles [Parsons] et al., 1983). For instance, a graduate student in a teacher education program may have a low interest value for completing a statistics course but a high utility value for the task if the course is required to earn her master's degree and receive her teaching certificate. Even if an individual is not interested in a task for its own sake, therefore, he or she can still have a high positive value for it because it enables important future goals (Eccles & Wigfield, 2002). The distinction between interest value and utility value parallels the contrast between intrinsic and extrinsic motivation, or the distinction between "means" versus "ends" motivation (Eccles [Parsons] et al., 1983, p. 90).

Attainment value. Attainment value is the importance one ascribes to doing well on a task (Eccles [Parsons] et al., 1983). From the theory's first iteration, Eccles and colleagues conceptualized this aspect of task value to incorporate a variety of dimensions, including "perceptions of the task's ability to confirm salient and valued characteristics of the self (e.g., masculinity, femininity, competence), to provide a challenge, and to offer a forum for fulfilling achievement, power, and social needs" (Eccles [Parsons] et al., 1983, p. 89). The attainment value of educational and occupational options is influenced by the aspects of one's self-image that are most critical to one's definition of self (Eccles, 1994).

I elected not to assess attainment value in this study because teaching is not a task all survey respondents have engaged in or will be required to engage in personally or professionally. It may not be appropriate to ask some of the respondents how much they value doing well on teaching-related tasks or achieving teaching-related goals when many undergraduates have not been in a formal or informal teaching role.

Perceived cost. The fourth subcomponent of subjective task value is the perceived cost of success or failure for participating in a given activity. Building on exchange theory (Thibaut & Kelley, 1959), Eccles and colleagues describe the influence of the cost to carry out an activity as a cost/benefit ratio. To the extent that an individual is aware of the costs and benefits of engaging in the available behavioral options, the value of each option should be inversely related to the cost/benefit ratio (Eccles [Parsons] et al., 1983).

Participating in an activity can have direct financial, emotional or opportunity costs that result in a loss of time, energy or resources available to devote to other tasks. One can also conceptualize the cost of an activity in terms of the potential for the behavior to either disconfirm a salient aspect of one's identity or prevent the individual

from engaging in other behaviors that are key to confirming an important identity characteristic (Eccles, 2009). A variety of factors can influence perceived cost, including available resources, the amount of effort needed to succeed at the activity, anticipated anxiety, fear of failure, and fear of the social consequences of success (Eccles [Parsons] et al., 1983; Eccles, 2009).

Application of Model to Occupational Contexts

Though initially developed as a framework for explaining adolescents' academic choices, researchers have also used Eccles' and colleagues' model in studies of individuals' occupational and leisure-time choices. At least six studies investigate how the motivational constructs in the Eccles expectancy-value model influence career aspirations and/or career decisions. In this section, I summarize findings from three studies that use the model to frame occupation-related questions that do not focus on teaching (Eccles et al., 1999; Frome, 1998; Watt, 2006), and three additional studies that use the model to address research questions related to prospective or preservice teachers' career choices (Watt & Richardson, 2007; Watt et al., 2012; Parkes & Jones, 2012). Results from the former studies elaborate on the relationships among the constructs in the expectancy-value model and occupational choice, and the latter studies demonstrate how expectancy-value constructs can be operationalized to answer research questions similar to those of this study.

Utilizing data from their longitudinal Michigan Study of Adolescent Life Transitions (MSALT), Eccles and colleagues' (1999) found that adolescents' expectancies and values predict occupational aspirations. They assessed approximately 2,000 high school seniors along four dimensions of values and beliefs, including (a) their

values regarding work, future success, relationships, and leadership (*lifestyle values*); (b)

specific job characteristics they might desire in a future occupational setting (*valued job

characteristics*); (c) estimates of future success in different categories of occupations

(*expected efficacy in jobs*); and (d) self-ratings of job-related skills (*self-perception of

skills*). The researchers used separate discriminate function analyses for male and female

participants to determine which values, job characteristics, skills, and efficacy

expectations best discriminated amongst adolescents who aspired to each of nine

different occupational categories. Results indicate that for every occupational category,

the relevant dimension of expected efficacy in the job (i.e., expectation for success) was

an important predictor of occupational plans. For example, efficacy for health-related

occupations was a strong predictor of plans to enter a health-related profession; similarly,

efficacy for working with people was a strong predictor of plans to enter a human service

occupation.

   As predicted, the values individuals attached to relevant job characteristics were

significant predictors of occupational aspirations (Eccles et al., 1999). Findings for

values, however, were more complex than those for expectancies, in the respect that

values had both positive and negative predictive power. As expected, for any given

occupational category, an individual's value for the characteristics of the occupation

predicted his or her plans to enter that occupational category. For example, valuing

creativity predicted respondents' plans to become artists or writers. Valuing the

characteristics of one occupation, however, also predicted that an individual would not

aspire to an occupation with unrelated characteristics. For instance, valuing helping

others predicted not aspiring to either a physical science profession or a business/law

profession. Similarly, valuing occupational prestige predicted not aspiring to a human service occupation.

Results from this study indicate that success expectancies may be necessary but insufficient predictors of occupational choice (Eccles, 2009). Belief that one can succeed at a given occupation is critical to an individual's decision to enter that field, but occupational choice also depends on the value one attaches to the various characteristics associated with that occupation (Eccles et al., 1999; Eccles, 2009). Eccles (2009) argues that her findings support the hypothesis that individuals choose the occupation that best aligns with their "hierarchy of occupationally-relevant values" (p. 84).

In her doctoral dissertation, Frome (1998) also used data collected for the longitudinal MSALT study. Samples for her various analyses comprised between 265 and 630 female MSALT participants. Using structural equation modeling, Frome tested the relations among gender role beliefs, self-concepts, task-concepts (i.e., task perceptions), values, expectations for future responsibilities, and achievement-related choices (including occupational aspirations and choices). With regard to the occupation-related results of the study, Frome found that girls' self-concepts and task-concepts of math and physical sciences in sixth grade predicted aspiring to a math/physical science occupation and choosing a math/physical science college major, but not holding a math/physical science occupation at age 20. Results were parallel in the domain of English, except that the number of women who held occupations in the English field was too small to test for relationships with the aforementioned variables and occupational choice. Frome also found that girls' expectancies for success in helping/service-related careers predicted

aspiring to a helping/service-related occupation, choosing a helping/service-related college major, and holding a helping/service occupation at age 20.

In a more recent study, Watt (2006) examined the relationships among expectancy-value constructs, gender, and educational and occupational achievement and career trajectories in mathematics in a sample of 459 Australian adolescents in grades 9-11. Watt's results indicate that math-related self-perceptions (i.e., self-concept of ability) and interest value[25] were major influences on gendered educational participation in higher-level math courses, which, in turn, predicted math-related career intentions, after controlling for math achievement. Watt's findings also indicate an interaction between gender and math utility value. Girls with the highest utility value for math were more likely to plan for highly math-related careers than girls with mid or lower math utility, whereas boys with mid or high math utility value planned for similarly highly math-related careers. Results from this study attest to a relationship between utility value and career plans, at least within the context of adolescents' math-related career plans.

Occupational choice in teaching. Watt and Richardson's (2007) research extends Eccles' and colleagues' expectancy-value model (Eccles [Parsons] et al., 1983) to incorporate adults' career choices, specifically in the domain of decisions regarding careers in teaching. The researchers and their colleagues are engaged in an ongoing, longitudinal project centered in Australia and designed to determine the motivational factors that influence preservice teachers' decisions to pursue careers in teaching. Watt and Richardson (2007) utilized Eccles' and colleagues' expectancy-value model as the

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[25] In their studies, Watt (2006), Watt and Richardson (2007) and Watt and colleagues (2012) term this concept "intrinsic value," but to maintain consistently in language throughout this review, I refer to it as "interest value," which is the term other expectancy-value researchers most frequently use. Parkes and Jones (2012) refer to the concept as "intrinsic interest value."

theoretical framework underpinning the development of their Factors Influencing Teaching as a Career Choice (FIT-Choice) scale. The researchers surveyed three cohorts of preservice teachers in Sydney, Australia. Two cohorts were in their first year of teacher education studies at the bachelor's level and the third comprised candidates enrolled in a two-year graduate master of teaching program. The researchers validated the FIT-Choice scale using exploratory and confirmatory factor analysis.

Watt and Richardson (2007) developed the FIT-Choice factors from themes they drew from the literature investigating preservice teachers' motivations for pursuing a teaching career and from key expectancy-value constructs in the Eccles model. The scale contains items assessing: (1) *antecedent socialization influences* (prior teaching and learning experiences and social influences); (2) *task perceptions* (*task demand*— perceptions about whether teaching is an expert career or a highly-demanding career; *task return*—perceptions about the social status associated with teaching, teacher morale, salary); (3) *self-perceptions* (perceived teaching ability); (4) *values* (interest value, personal utility value, social utility value); and (5) the degree to which individuals view teaching as a *fallback career*.

Results suggest that interest value, social utility value (i.e., the ability to make a social contribution or give back to society in meaningful ways), and perceived teaching ability are the strongest influences on the choice of a teaching career for preservice teachers, followed by positive prior teaching and learning experiences and personal utility value (Watt & Richardson, 2007). Although the authors have not yet assessed whether their respondents assume or are retained in teaching positions after graduation, their analyses indicate that the aforementioned motivations are positively correlated with

future-oriented outcome factors such as planned teaching engagement[26] (i.e., the amount of effort the individual plans to exert in their teaching career and their planned persistence in teaching) and career development aspirations (i.e., the individual's plans for continuing to develop their teaching skills and to assume leadership responsibility in their school).

Watt and colleagues (2012) recently studied the validity of the FIT-Choice scale in countries other than Australia, including the United States. Results provide support for strong factorial invariance across samples, meaning that the scale's constructs are essentially the same across settings and are, therefore, comparable. Although findings indicate a number of statistically significant differences among motivations for teaching across the international samples, within each sample the relativity of mean ratings appeared similar. The same five motivations were rated highest across samples: (1) interest value; (2) perceived teaching ability; (3) the desire to make a social contribution; (4) the desire to work with children/adolescents; and (5) previous positive experiences with teaching and learning.

In a smaller-scale study which also used Eccles' and colleagues' (1983) expectancy-value model as a theoretical framework for investigating college students' career choices, Parkes and Jones (2012) found that attainment value, interest value, and perceived teaching ability in music[27] predicted 74 percent of the variance in whether

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[26] This finding was not consistent for the personal utility factors, which mostly indicated no relationship with measured outcomes and in two cases, indicated negative relationships. The authors note that these findings support previous suggestions that such personal utility motivations may be detrimental to careers in teaching (see Watt and Richardson, 2007 for references).

[27] Parkes and Jones (2012) refer to this concept as "expectancy," but I have termed it "perceived teaching ability in music" to parallel Watt and colleagues' "perceived teaching ability" concept. The two terms are assessed with similar items on their respective surveys.

college students majoring in music intended to pursue a career teaching music. These findings parallel those of Watt and Richardson (2007) and Watt and colleagues (2012), which also indicate that interest value and perceived teaching ability are among the top three predictors of teaching career choices.

Conclusion

The literature reviewed in this chapter points to several conclusions that illustrate the importance of this study and inform its focus and design. The first section of the review demonstrates that teachers' academic achievement levels, as measured by their standardized test scores, are one important predictor of student success. Though evidence suggests that teachers with strong test scores may have the potential to improve student achievement in some contexts among some student groups, findings from many studies published over the last several decades establish that the teaching profession attracts a disproportionately low number of high-scoring college graduates and that this pattern has intensified over time, especially among women with the strongest academic skills. Although it is commonly assumed that perceptions of low teaching salaries and more attractive occupational options for women are among the main reasons academically-talented individuals choose not to teach, the full range of factors these individuals consider when making their career decisions remains underexplored.

Despite the lack of inquiry into why many high-achieving individuals who are interested in teaching choose not to teach, the literature on college and high school students' perceptions of teaching and teacher recruitment policies identifies a range of factors that might influence these individuals' career decisions. Findings indicate that high school and college students and recent college graduates have a mix of positive and

negative perceptions about teaching. For instance, while some perceive that teaching

offers an opportunity to contribute to society, intellectual challenge, and other attractive

non-pecuniary benefits, they also perceive that preparing to teach is expensive and that

teachers make low salaries, have low morale, receive inadequate school funding, and

must deal with disruptive pupils and unappealing bureaucratic tasks (Kyriacou &

Coulthard, 2000; Smith, Mack & Akyea, 2004; Ramirez, 2010; Bianco, Leech &

Mitchell, 2011). Policymakers have designed a variety of recruitment initiatives to

combat negative perceptions and attract high-achieving individuals to teaching careers.

Two common, increasingly-employed initiatives—alternative certification programs and

financial incentives—aim to reduce the opportunity costs associated with teaching and

make the occupation more attractive to academically-talented individuals. To the extent

that high-achieving, uncommitted prospective teachers find these initiatives attractive,

they may also be among the considerations these individuals weigh when deciding

whether to teach.

      The final section of this literature review takes a closer look at Eccles' and

colleagues' (1983) expectancy-value model of achievement motivation, which serves as

the foundation for this study's theoretical framework. In this section, I define the

constructs of the model in greater depth, summarize the research supporting those

constructs, and review studies that have used the model to frame research questions

related to career decisions. In brief, Eccles' and colleagues' expectancy-value model

asserts that individuals' occupational choices are influenced by their expectancies for

success in various career options, the values they assign to those options, and a number of

other psychological and social antecedent factors. Among the expectancy-value factors

that may determine if an individual chooses to teach are: (a) messages he or she has received from important others about teaching and his or her past experiences with teachers and/or teaching (i.e., socialization influences); (b) whether the individual believes he or she would be good at teaching (i.e., expectancy for success in teaching, perceived teaching ability); (c) his or her perception of how demanding teaching is (i.e., task demand); (d) whether he or she enjoys the process of teaching, finds the work personally and socially useful, and does not perceive the costs to teach unduly high (i.e., interest value, utility value, perceived cost); and (e) whether teaching aligns with his or her short- and long-term goals and self-schemata (i.e., attainment value).

These theoretical factors, coupled with the perception-related and policy-related factors identified in section two of the literature review, inform the design of this study's data collection instruments (survey and focus group protocol). Having established a need for further inquiry on this topic and presented an empirical and theoretical basis from which to move forward, Chapter 3 describes the research design, data collection methods, and analytic procedures employed in this investigation.

CHAPTER 3: METHODOLOGY AND PROCEDURES

This study examines an underexplored topic; therefore, I selected a mixed methods research design that provides multiple sources of data with which to address the research questions. The first phase of this two-phased study involved a survey of undergraduate students enrolled in select courses throughout the 2013-2014 academic year at one large, Research 1 university in the mid-Atlantic region of the United States. The second phase consisted of focus groups with a subset of survey participants each term who (a) demonstrated interest in a teaching career on the survey, but were uncertain whether they would teach after graduation, and (b) were of high-achieving compared to their national peers (i.e., had high SAT/ACT test scores, as defined in the *Subjects and Participant Recruitment* section below).

This chapter describes the methods and procedures used throughout the study. I begin by discussing the specific mixed methods research design and explaining the advantages of employing survey and focus group data to answer the research questions. Next, I detail the study's data sources and describe how the survey items and focus group protocol link to the research questions and theoretical framework. Third, I introduce the study subjects and the recruitment procedures. In the fourth section, I address data collection procedures, and in the fifth, I describe data analysis techniques and the validity and reliability of study results. The sixth section discusses ethical and confidentiality considerations, and Chapter 3 concludes with a section pertaining to design-related limitations and a chapter summary.

Research Design

For this study, I used what Leech and Onwuegbuzie (2009) term a sequential, equal-status mixed methods design. Data collection was sequential because the survey was administered prior to the focus groups during each academic term. The design was equal status because I gave equal priority to each method throughout data collection, analysis, and interpretation of findings.

Using Greene, Caracelli and Graham's (1989) terminology, the primary purpose for employing a mixed methods design for this study was *triangulation*. Greene and colleagues describe triangulation as "seeking convergence, corroboration, or correspondence of results from the different methods" (p. 259). My secondary purpose for using mixed methods was *development*, or "seeking to use results from one method to help develop or inform the other method" (Greene et al., 1989).

By utilizing both the survey and focus groups as data collection methods, I aimed to increase the interpretability, meaningfulness, and validity of constructs and study results by capitalizing on the strengths of each method to counterbalance the weaknesses of the other. I employed both methods in investigating similar conceptual phenomena and then triangulated findings by seeking convergence of results. Convergent findings between methods triangulated results and strengthened the validity and credibility of study conclusions, whereas instances of divergent findings highlighted opportunities for further investigation.

I selected a survey and focus groups as the two methods for this investigation because they complement one another in two key ways —first and most importantly, by generating both broad and rich data. The survey was a relatively efficient data collection

instrument which yielded information on a broad range of topics from a large number of participants but was limited by the close-ended nature of the survey items and the researcher's inability to interact with survey-takers to clarify questions and probe answers. The focus groups balanced this disadvantage by permitting open-ended exploration of the perceptions and decision-making experiences of the target population—high-achieving students. Focus groups also added depth to the data by allowing participants to interact with one another, which often created a "synergistic effect" that encouraged respondents to "react to and build on" one another's comments (Stewart, Shamdasani & Rook, 2007, p. 43). By listening to the focus group discussion, some participants were able to identify how their experiences compared with others' and thus shared feelings and experiences they may not have recalled in a one-on-one interview. Morgan and Krueger (1993) refer to this aspect of focus groups as a "cuing phenomenon" that may extract more valuable data than other methods (p. 17).

Though interaction in focus groups offers advantages, it also has the potential to limit this method in several ways. For instance, focus group data might be biased toward conformity because some participants might withhold comments they would be more willing to share in private (Morgan, 1997). Due to the power and influence of other participants in the group, some individuals might be hesitant to express their views or share their experiences out of fear of others' judgments. Conversely, group interaction might prompt some participants to express more extreme views in the group than they would in private, eliciting "polarized" data (Sussman, Burton, Dent, Stacy, & Flay, 1991). Focus group conversations, including some discussions in this study, are also sometimes dominated by one or more participants who bias the data toward their

responses. In addition, group interaction can compromise the amount of control the researcher has in directing the discussion (Morgan, 1997). Inclusion of the survey helped to mitigate some of these limitations by ensuring that all participants' experiences, at least those addressed on the survey, were included in the dataset.

The survey and focus groups also balanced one another with regard to the standardization and flexibility of the data collection instruments. One advantage of the survey is that survey items were standardized across participants, which allowed for statistical comparisons between and among groups of interest. This standardization, however, meant that items could not be revised or added throughout the study. Using focus groups as a second data collection method balanced this weakness by allowing the researcher to interact directly with study participants to clarify survey or focus group findings, pose follow-up questions, and probe answers.

In addition to triangulation, the secondary purpose for using a mixed methods design was further development of the data collection instruments. Results from the pilot study and first round of the survey helped to further develop the focus group protocol, which led to more intensive inquiry into why certain trends in participant responses emerged. I also used survey data to identify potential focus group participants.

Data Sources

I collected three forms of data for this study: existing institutional data, survey data, and focus group data. As further detailed in the *Subjects and Participant Recruitment* section below, I invited all undergraduate students to participate in the survey portion of the study who were enrolled in education courses that (a) were open to students of all majors, (b) had an enrollment of at least 50 percent non-education majors,

and (c) focused on issues of K-12 teaching and learning or a related topic. I invited all high-achieving students (defined in the *Subjects and Participant Recruitment* section below) to participate in a focus group who indicated an interest in a teaching career on the survey, but reported not being committed to teaching after graduation. I designed the survey and focus group instruments to apply to students of any major, including education and pre-education. In this section, I describe each of the study's three data sources and discuss how the survey and focus group protocol align with the research questions and theoretical framework. Appendix B demonstrates how survey items and focus group questions correspond to this study's research questions, expectancy-value constructs from the theoretical framework, policies, and/or items from other surveys.

Institutional Data

Prior to administering the survey and holding focus groups, I acquired a subset of institutional data on the students enrolled in the courses from which I recruited participants. These data included demographic and academic variables, specifically: (a) name and university ID number; (b) SAT scores (composite and subsection scores, excluding writing[28]) and ACT scores (composite and subsection scores, excluding writing); (c) primary and secondary major; (d) class standing (i.e., freshman, sophomore, junior, senior); (e) race/ethnicity/citizenship; and (f) sex.

Given the study's focus on academic achievement, participant SAT/ACT scores were one of the most important variables in this analysis. I used SAT/ACT test scores in the analysis of both survey and focus group data. In the survey phase, I used these scores

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[28] I excluded writing scores from the analysis because they are a relatively new addition to the SAT and are often not reported in the literature related to teachers' or others' academic achievement.

to explore differences in higher- and lower-scoring students' survey responses. In the focus group phase, I used SAT/ACT test scores to identify which participants fell into the "high-achieving" group. I used other institutional data variables to create a demographic profile of the study sample.

Survey Data and Design

The survey provided data for a broad understanding of how undergraduate students value particular aspects of a career in teaching, why they may not have chosen to pursue teacher certification during their time at the university, and which recruitment policies might persuade them to teach. The survey (provided in Appendix C) took students approximately 20 minutes to complete and contained close-ended items with multiple choice or Likert-style scale response options. The subsections below discuss how I constructed the items on the survey, with particular attention to the sources from which I adapted many items and their established validity and reliability.

Intent to teach: Research questions 1 and 2. Two survey items assessed the respondent's interest in and degree of commitment to a career in teaching. Using a 7-point scale, the first intent to teach item asked the respondent to indicate how likely it is that he or she will teach or prepare to teach at the K-12 level after graduation. I used this item as the dependent variable in regression analyses designed to answer research questions one and two (RQ1 and RQ2). The second intent to teach item assessed the respondent's current and past interest in a teaching career. I used this item to identify uncommitted prospective teachers. Individuals who answered "I have considered a career in teaching in the past, but am not currently considering it," "I may consider teaching as a future career, but I'm not planning to teach or prepare to teach immediately after

graduation," or "Teaching or preparing to teach is one of multiple career options I'm considering for after graduation" were flagged as uncommitted prospective teachers[29] in the quantitative analyses and were eligible for invitation to the focus groups if they met the SAT score criteria.

Expectancy-value items: Research questions 1 and 2. The expectancy-value items on the survey sought to measure the constructs in the study's theoretical framework, specifically: (RQ 1a) *socialization influences*; (RQ 1b) *perceived teaching ability*; (RQ 1c) *task perceptions*; and (RQ 1d) *subjective task values*. I adapted the majority of the expectancy-value items on my survey from Watt and Richardson's (2007) FIT-Choice scale because their research has demonstrated that the scale has convergent and divergent construct validity (Watt et al., 2012).

RQ 1a- Socialization influences. To limit the scope of the broad term "socialization influences," this study employs the same three subscales and accompanying questions from the FIT-Choice scale, including *social dissuasion* (i.e., discouraging messages about teaching from family, friends and others), *social encouragement* (i.e., encouraging messages about teaching from family, friends and others), and *prior teaching and learning experiences* (i.e., the extent to which the respondent had strong teachers and positive school experiences).

RQ 1b- Perceived teaching ability. Although the Eccles model asserts that self-concept of ability and expectancies for success are theoretically distinct concepts, one study indicates that the concepts are, as of yet, empirically indistinguishable (Eccles &

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[29] The other two available responses, which did not flag respondents as uncommitted prospective teachers, were "*I am not currently and have never considered a career in teaching*" and "*Assuming I get a teaching job, I will definitely teach immediately after graduation or after I earn my teacher certification.*"

Wigfield, 1995). Paralleling Watt and Richardson's (2007) work, the theoretical framework and survey items for this study address only self-concept of ability, which I refer to as *perceived teaching ability* and define as one's belief about how well he or she would perform the general task of teaching.

RQ 1c- Task perceptions. Modeled after Watt and Richardson's (2007) FIT-Choice scale, my survey measures two dimensions of task perceptions: *task demand* and *task return*. The task demand items are conceptually similar to the task difficulty concept in the Eccles and Wigfield (1995) study described in Chapter 2 and are the same as those on the FIT-Choice scale. These items measure the extent to which one believes teaching is hard and/or emotionally-demanding work. Task return is a concept unique to the FIT-Choice scale and is not discussed in Eccles' and colleagues' theoretical work. Task return items assess the respondent's perception that teaching is socially valued, that teachers have high morale, and that teachers earn a competitive salary.

RQ 1d- Subjective task values. The survey assessed four dimensions of subjective task values: interest value, personal utility value, social utility value, and perceived cost. As noted in Chapter 2, this study did not examine attainment value.

The three *interest value* items on the survey are nearly identical to those on the FIT-Choice scale. They assess the respondent's current and past interest in a teaching career.

As described in Chapter 1, I adopt Watt and colleagues' (2007) convention of differentiating between *personal utility value* and *social utility value*. Personal utility items on this study's survey address the extent to which respondents value the job security and non-pecuniary benefits (e.g., time for family, vacation time, short work day)

associated with teaching. Social utility items for this study pertain to how respondents value the opportunities teaching offers to shape the future of children/adolescents, enhance social equity, make a social contribution, and work with children and adolescents.

I also developed a scale for *perceived cost*, which is one of the four subjective task value constructs in Eccles' expectancy-value model, but is not included in the FIT-Choice scale. Perceived cost items on the survey assess respondents' perceptions about the opportunity cost associated with teaching and the degree to which respondents perceive that they would have to take a cut in salary, accumulate additional student loan debt, or give up valuable personal time to teach. I wrote the majority of these items and adapted several others from the Valuing of Education Scale (Battle & Wigfield, 2003).

Modifications to FIT-Choice scale. The FIT-Choice scale was designed for preservice teachers who were enrolled in a teacher preparation program, so several changes were necessary to make it applicable to the general undergraduate population. To address RQ 1a (*socialization influences*) and RQ 1b (*perceived teaching ability*), I utilized some items directly from the FIT-Choice scale and others I changed only minimally. For instance, to be applicable to respondents who do not have teaching experience, I changed one FIT-Choice item "I have good teaching skills" to "I believe I would have good teaching skills."

To answer RQ 1c and RQ 1d, I adapted FIT-Choice task perception and subjective task value items. The wording and content of the items is very close to corresponding items on the FIT-Choice scale, but some adaptations were necessary to make them relevant to all undergraduates. For instance, I changed the FIT-Choice item "I

like teaching" to "I believe I would like teaching," because I anticipated that some respondents would not have teaching experience. I also altered the question stems to be relevant to respondents with various backgrounds with, and levels of interest in, teaching. Whereas the stem for FIT-Choice task value items is "I chose to become a teacher because … ", the stem for all task perception and subjective task value items on my survey is "Please circle the number that best corresponds with the extent to which you agree or disagree with each of the following statements." Finally, because the FIT-Choice salary scale contains only two items, I created a third to increase scale validity ("Teachers earn a competitive income").

Policy items: Research questions 3 and 4. The survey includes a set of items pertaining to policy-related issues that address research questions three and four. Items that pertain to RQ3 asked about interest in and reasons for not pursuing teacher certification at the university. Items that address RQ4 specifically gauge respondents' interest in alternative teacher certification programs and financial incentives, as well as their perception of beginning teachers' salaries.

Focus Group Data and Protocol Design

The focus group portion of this study included only high-achieving, uncommitted prospective teachers because the primary purpose of this phase was to explore high-achieving students' perceptions and experiences in greater depth. The focus group protocol, which consisted of 12 open-ended items, addressed each of the four research questions in a more global fashion and with less emphasis on specific expectancy-value constructs than in the survey. To ensure consistency, all groups were guided by the same protocol, but exact questions and prompts varied. Appendix B provides a table linking

protocol questions to the theoretical framework and research questions, and Appendix D contains the focus group protocol.

I began the focus groups by asking participants to describe their interest in a teaching career and messages they have received about teachers or the teaching profession (RQ 1a). I then proceeded to have them discuss what they value in a career and where they perceive a career in teaching aligns with, or deviates from, those values. This line of discussion was designed to broadly assess participants' subjective task values for a career, in general, and for teaching, in particular (RQ 1d). The fourth set of questions asked participants to describe how and why they have decided, or may decide, not to teach and what the most important factors are in that decision. This fourth set of questions was the broadest and participant responses touched on any of the four research questions. The final set of questions pertained to what might make teaching a more attractive career for participants, with specific reference to policy options such as alternative certification programs and financial incentives (RQ 4).

Subjects and Participant Recruitment

The key population of interest in this study is high-achieving, uncommitted prospective teachers. The full survey sample consisted of 664 undergraduate students enrolled at one large, Research 1, mid-Atlantic university in summer 2013, fall 2013 or spring 2014. Of the 664 survey respondents, 294 were classified as uncommitted prospective teachers.

Defining Uncommitted Prospective Teacher

To reiterate, I define uncommitted prospective teachers as individuals who have an interest in a teaching career but are uncertain whether they will teach after graduation.

As previously mentioned, I classified survey respondents as uncommitted prospective teachers if they selected one of the following three responses to the question "Which of the following best describes your interest in a K-12 teaching career?": (1) I have considered a career in teaching in the past, but am not currently considering it; (2) I may consider teaching as a future career, but I'm not planning to teach or prepare to teach immediately after graduation; or (3) Teaching or preparing to teach is one of multiple career options I'm considering for after graduation. Frequencies for the entire sample of students who responded to the survey item are reported in Table 1.

Table 1

Response Percentages for Uncommitted Prospective Teacher Item

Response Option	Uncommitted Prospective Teacher	% Respondents
I have considered a career in teaching in the past, but am not currently considering it.	Y	20
I may consider teaching as a future career, but I'm not planning to teach after graduation.	Y	12
Teaching or preparing to teach is one of multiple career options I'm considering for after graduation.	Y	13
I am not currently and have never considered a career in teaching.	N	26
Assuming I get a teaching job, I will definitely teach immediately after graduation or after I earn my teacher certification.	N	28

$n = 647$

Note. Percentages do not sum to 100 due to rounding.

I included only uncommitted prospective teachers in the quantitative analysis and invited only high-achieving (as defined below), uncommitted prospective teachers to participate in the focus groups. The survey sample yielded 31 high-achieving,

uncommitted prospective teachers who could be matched with contact information from the institutional dataset in summer 2013, 77 in fall 2013, and 68 in spring 2014. Out of an eligible 176 high-achieving, uncommitted prospective teachers who completed the survey, 44 participated in a focus group for a response rate of 25 percent.

As demonstrated in the *Teacher Pipeline* figure in Chapter 1, commitment to teaching is best represented by a continuum. Uncommitted prospective teachers, in this study, are those who expressed an interest in the field on the survey but reported not being fully decided on whether or not they will teach after graduation. After making an initial commitment to a career in teaching, most prospective teachers enroll in a program of teacher preparation and become preservice teachers. *Uncommitted prospective teacher* and *preservice teacher* are not mutually exclusive terms because an individual might be enrolled in a teacher preparation program but still uncertain about whether they will complete the program or teach. By this definition, some participants labeled as uncommitted prospective teachers in the study were also preservice teachers who reported being uncertain about teaching after graduation.

The majority of the uncommitted prospective teachers in this study's sample were not majoring in education or pre-education at the time they completed the survey and thus, were not enrolled in an undergraduate program of teacher preparation ($n = 269$, 91%). At the time of the focus group meetings, however, seven of the 44 participants were enrolled in one of the university's undergraduate teacher preparation programs, at least two participants had already applied to the university's master's-level teacher preparation program, and several others were planning to apply as they moved closer to graduation. Two additional participants had been accepted to Teach for America for the

upcoming school year; one of these students had already committed to the program and the other was undecided about whether she would join TFA or seek out another occupational option.

Defining High-achieving

Undergraduates at the university sampled in this study have higher median SAT scores than the overall college-bound population that takes the SAT examination. For example, new freshmen who enrolled at the university in fall 2012 had a median composite critical reading and mathematics score of 1300, which is almost 300 points above the median score of all 2012 college-bound high school seniors who took the SAT (1010). Because students at this university, on average, differ from the overall college-going population on this measure of academic achievement, I classified students as "high-achieving" if they had high scores compared to the national cohort of test-takers rather than their peers at the sampled institution.

I designated students "high-achieving" if they had a composite critical reading and mathematics SAT score at or above the average 85th percentile score of the national population of SAT test-takers for 2010, 2011, and 2012 (composite score $\geq$ 1200).[30] In cases where the participant had an ACT score but no SAT score, I converted the ACT score to an SAT score using the College Board's ACT and SAT Concordance Tables. Subjects without an institutional record of SAT or ACT scores were not invited to participate in the focus group. They were included in the uncommitted prospective teacher dataset, but were not included in analyses that pertain to academic achievement.

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[30] Although many study participants may have taken the SAT before 2010, I used the average 85th percentile scores for these three years because the range of three years' scores was very small (1200-1210) and because the College Board does not publish percentile ranks from test years before 2010.

Of the 568 survey participants with a recorded SAT or ACT score, 314 were classified as

high-achieving; 144 of the 260 uncommitted prospective teachers with test scores were

high-achieving.

Survey Participant Recruitment

To isolate a group of uncommitted prospective teachers, I targeted undergraduate

courses at the institution that were likely to enroll a high percentage of students who had

an interest in education-related issues and possibly teaching, but were not planning to

teach after graduation. Specifically, I sent email participation invitations to all instructors

of courses in the College of Education who taught courses that (a) were open to students

of all majors; (b) typically enroll at least 50 percent non-education majors, as evidenced

by enrollment patterns over the 2012-2013 academic year; and (c) focused on issues of

K-12 teaching and learning, child development, or foundations of education.

If instructors were interested in allowing their students to participate in the study,

they either set aside class time for a member of the research team to administer the paper

survey or emailed their students with an invitation to participate in the web-based

version. All students enrolled in the selected courses were invited to participate in the

survey phase of the study (see Appendix E for recruitment correspondences). I distributed

six $50 gift cards by lottery as participant incentives in fall 2013 and three $99 gift cards

spring 2014. Recruitment information for survey participants is reported in Table 2.

Table 2

Recruitment of Survey Participants by Term

	Summer 2013	Fall 2013	Spring 2014
Number of class sections targeted	15	37	35
Number of class sections participated	7	29	22
Paper survey in class	2	14	8
Web-based survey	5	15	14
N survey participants	27	321	316

The number and percentage of survey participants enrolled in targeted courses by academic department are reported Table 3. Throughout the three academic terms, over a third of survey participants (40%) were recruited to participate from their human development course, while 26 percent were recruited from education policy, 22 percent from special education and 11 percent from curriculum and instruction.

Table 3

Recruitment Class Enrollment for Survey Participants by Term

	N (column %) survey participants			Total *N* (column %)
	Summer 2013	Fall 2013	Spring 2014	
Department of recruitment class				
Curriculum and instruction	1 (4%)	69 (22%)	4 (1%)	74 (11%)
Human development	2 (9%)	106 (34%)	153 (48%)	261 (40%)
Education policy		105 (33%)	64 (20%)	169 (26%)
Special education	20 (87%)	34 (11%)	89 (28%)	143 (22%)
Total *N* (row %)	23 (4%)	314 (48%)	316 (48%)	653 (100%)

Note: The total *N* for this table is less than the 664 full survey sample size due to missing institutional enrollment data for some participants. Percentages may not add to 100 due to rounding.

Focus Group Participant Recruitment

Focus group subjects were recruited from among the survey participants who (a) were high-achieving; and (b) indicated on the survey that they have ever considered or are currently considering a career in teaching, but were uncertain whether they would teach after graduation. In the recruitment email, potential participants were alerted that they would receive a $10 (fall 2013) or $20 (spring 2014) gift card for participating in a focus group.[31] Recruitment information for focus group participants is reported in Table 4.

Table 4

Recruitment of Focus Group Participants by Term

	Summer 2013	Fall 2013	Spring 2014
Number of students invited	4	72	66
N focus group participants	1 (held in fall)	17	26

Table 5 reports the number and percentage of focus group participants who were enrolled in particular recruitment courses by academic department. Over half of all focus group participants (52%) were recruited from a human development course. One-fifth were recruited from education policy, 16 percent from special education and 11 percent from curriculum and instruction.

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[31] Between fall 2013 and spring 2014 I received grant funds that allowed me to increase participant incentives from $10 to $20 gift cards per student for focus group participation. The increase in the number of focus group participants from fall to spring may be a function of this incentive increase.

Table 5

Recruitment Class Enrollment for Focus Group Participants by Term

	N (column %) focus group participants			Total *N* (column %)
	Summer 2013[†]	Fall 2013	Spring 2014	
Department of recruitment class				
Curriculum and instruction		5 (20%)		5 (11%)
Human development		10 (40%)	13 (72%)	23 (52%)
Education policy		7 (28%)	2 (11%)	9 (20%)
Special education	1 (100%)	3 (12%)	3 (17%)	7 (16%)
Total *N* (row %)	1 (2%)	25 (57%)	18 (41%)	44 (100%)

[†] The participant recruited from summer 2013 participated in a fall 2013 focus group.

Demographic Characteristics of the Survey and Focus Group Samples

Demographic data, including sex, race, class standing, major and SAT, for the uncommitted prospective teachers who participated in the survey and focus groups are reported in Table 6. Most participants had institutional records for these demographics; however, 12 percent of the uncommitted prospective teachers in the survey sample (*n* = 34) did not have an SAT or ACT score, which slightly decreased the pool of potentially eligible focus group participants. In addition, four students were missing records for sex and race. Of those with demographic records, the majority of participants in both phases of the study were white females majoring in a discipline other than education with SAT scores at or above 1200. The mean SAT score for survey participants was 1186 with a standard deviation of 150 points; the mean for focus group participants was 1309 with a standard deviation of 68 points.

Table 6

Survey and Focus Group Participant Demographics

	Survey %	Focus group %
Sex		
Female	71	84
Male	29	16
Race		
White	56	70
Asian	15	18
Hispanic	12	2
Black/African American	10	5
Two or more races	3	
Unknown	3	5
Class Standing		
Senior	41	55
Junior	24	18
Sophomore	29	23
Freshman	6	5
Primary Major		
Behavioral and Social Sciences	32	23
Public Health	18	16
Arts and Humanities	13	16
Letters and Sciences (undecided)	10	7
Computer, Mathematical, and Natural Sciences	9	16
Education	8	9
Business	4	2
Agriculture and Natural Resources	2	2
Engineering	2	5
Architecture	1	2
Journalism	1	2
Primary or Secondary Major		
Education or pre-Education	9	16
Other	91	84
SAT		
≤ 1000	13	
1001-1100	13	
1101-1200	19	
1201-1300	31	48
1301-1400	18	36
1401-1500	5	16
1501-1600	1	

Survey *n* = 260-294
Focus group *n* = 44
Note. Some percentages do not sum to 100 due to rounding.

The focus group and survey samples differed along several demographic dimensions other than SAT score and interest in a teaching career. The focus group sample had a greater representation of females (84%) than the survey sample (71%). This difference is not entirely surprising because the focus group sample included only individuals who had a current or past interest in teaching (i.e., uncommitted prospective teachers), and in general, more females select teaching careers. The focus group sample also comprised more white (70% focus group, 56% survey) and Asian students (18% focus group, 15% survey) and fewer Hispanic (2% focus group, 12% survey) and Black/African American students (5% focus group, 10% survey). In addition, focus group participants were more likely to be of junior or senior class standing (73%) than survey participants (65%). Having more juniors and seniors in the focus group discussions may have been beneficial for the study because these students are closer to graduation and may have given more thought to their post-graduation plans and career decisions.

With regard to academic major, more focus group than survey participants had a primary or secondary major in education (16% focus group, 9% survey). This difference is expected given that students majoring in education are enrolled in a teacher education program and are likely to be seriously considering teaching. Nine percent fewer focus group than survey participants had a primary major in the social and behavioral sciences, whereas seven percent more focus group participants were majoring in computer, mathematical, and natural sciences than survey participants. Focus group participants were also slightly more likely to be recruited from human development courses than

survey participants and less likely to be recruited from education policy and special education courses. The differences in recruitment courses may have affected the teaching-related issues participants discussed during the focus groups.

As reported in the *Defining Uncommitted Prospective Teacher* section of this chapter, another important difference between the survey and focus group samples is that focus group participants were all uncommitted prospective teachers, which means they reported a current or past interest in a K-12 teaching career on the survey. Within this group, however, there was substantial variation along the continuum of commitment to a teaching career. On one end of the commitment continuum were participants who had considered teaching in the recent past, but were no longer seriously considering it as a future occupation. On the other end were those who said they were likely to teach after graduation or after completing their teaching certification barring unforeseen circumstances. In between was a contingent of focus group participants that was actively weighing teaching alongside several other occupational options. As noted throughout Chapter 4, variation in commitment to teaching affected (a) the experiences many focus group participants had with teachers and teaching and (b) the factors that weighed into their occupational intentions.

Data Collection

In the initial correspondence with course instructors, I requested that they administer the survey in their courses themselves. If they agreed, I mailed them copies of the survey, a script to read prior to its administration and the participant consent forms. If they did not agree but were willing to devote class time to the survey, a research assistant administered the survey during a regular class meeting. Prior to distributing the survey,

the instructor or research assistant read a statement notifying students of the purpose of the research, that their participation was voluntary, and that they could choose to discontinue their participation at any time. The statement also noted that some students would be invited to participate in focus groups later in the semester and that there would be incentives for participation in the survey and focus group. The survey was administered in the regular meeting room for each participating course at approximately the same time in the semester during each round of data collection to avoid any confounding impact of course content on study results. All in-class survey participants signed a paper consent form. I requested that instructors who did not wish to use class time for the survey send an email to their students with a link to the web-based version of the survey. The recruitment email for the web-based survey discussed incentives and follow-up focus groups. All web-based survey participant indicated their consent by clicking a box before proceeding to the survey.

I conducted four focus groups ranging in size from two to seven participants during fall 2013 and four during spring 2014. All focus groups were relatively small: one had two participants, one had three, one had four, three had five, two had six, and one had seven. Although these groups were on the small side of Morgan's (1997) rule of thumb of six to 10 participants, each discussion lasted a full 1.5 to 2 hours and was small enough to allow all participants to express their views. I also interviewed one student individually who was interested in participating but was not available during any of the arranged focus group meeting times.

All focus groups and the interview took place in the College of Education building and I moderated each discussion. Due to their small number, individuals who

completed the survey in summer 2013 and met the selection criteria were invited to participate in a fall 2013 focus group.

Pretest and Pilot Test

Prior to beginning data collection for the full study, I pretested the survey and focus group protocol with a small group of students from the university. To confirm that questions and instructions were clear, I pretested the paper and web-based survey with six students at the institution using a process of respondent debriefing (Fowler, 1995) prior to beginning the pilot test in spring 2013. Immediately after each individual completed the paper version of the survey, I briefly interviewed them regarding the clarity of the items and instructions on the instrument. I also conducted a larger-scale ($n = 75$) pilot test of the survey in several qualifying education courses. I did not include survey data from the pilot test in the final dataset but used it to identify any issues with the survey and to refine the focus group protocol and data collection procedures.

<div align="center">

Data Analysis

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In the following sections, I describe the specific techniques used to analyze the survey and focus group data and then discuss how I established that the data and subsequent findings are valid and reliable.

Survey Analysis and Variables

I used several techniques to analyze the survey data from uncommitted prospective teachers, including exploratory factor analysis, ordinal logistic regression, descriptive statistics, and chi-square tests of independence. The following sections

explain the techniques used to answer each research question, addressing how I derived variables where appropriate.

RQ1 and RQ2: Exploratory factor analysis and ordinal logistic regression. To answer my first and second research questions, I conducted a series of ordinal logistic regression analyses predicting intent to teach from demographic and expectancy-value variables. I derived the expectancy-value variables for these analyses through exploratory factor analysis (EFA). The specific procedures for the EFA are detailed below, as are the models for and variables included in the regressions.

Exploratory factor analysis. I conducted EFAs on the original 62 survey items to examine the conceptual structure of the survey data and condense it into independent variables for the regression analysis. I began by reviewing the correlation matrix and removing three items with no inter-item correlations $\geq |.30|$ (Pett, Lackey & Sullivan, 2003). To mitigate potential issues with multicollinearity, I also removed three items with inter-item correlations $\geq |.80|$ (Pett, Lackey & Sullivan, 2003). Next, I ran an EFA with the remaining items using image factoring and direct oblimin rotations, which are the procedures Watt and Richardson (2007) utilized to develop the FIT-Choice scale. I sought an oblique solution primarily because many items were at least moderately correlated, which suggested that resultant factors would also be correlated.

I conducted two additional EFAs removing three items that had a measure of sampling adequacy (MSA) score $< .70$ and three that did not load $\geq |.40|$ on any factors (Pett, Lackey & Sullivan, 2003). After removing problematic items, I ran three more EFAs to converge on a solution with theoretically distinct factors that had inter-factor correlations $< |.45|$. Table F1 in Appendix F reports descriptive statistics for items

retained in the factor analysis and Table F2 lists each item that was deleted from the analysis and the reason for doing so.

The final, nine-factor solution, which accounted for 64 percent of the variance among the 50 items in the analysis, is reported in Table 7. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for this solution was .836, which indicates that the sample size ($n = 294$) was sufficient (Pett, Lackey & Sullivan, 2003). Bartlett's Test of Sphericity was significant at $p < .001$, which demonstrates that the F-matrix was not an identify matrix and factor analysis was appropriate. Inter-factor correlations are reported in Table F5 in Appendix F.

Table 7

Results of 9-Factor, Final Solution

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %	Total
1	10.17	20.34	20.34	9.48	18.96	18.96	7.03
2	4.65	9.30	29.64	3.93	7.86	26.81	2.92
3	3.98	7.97	37.61	3.22	6.44	33.26	3.70
4	3.12	6.23	43.84	2.43	4.85	38.11	3.01
5	2.94	5.87	49.71	2.31	4.63	42.74	3.22
6	2.14	4.28	54.00	1.61	3.22	45.96	4.03
7	1.81	3.62	57.62	1.22	2.43	48.39	5.98
8	1.62	3.25	60.87	0.89	1.77	50.17	3.11
9	1.47	2.94	63.81	0.99	1.99	52.16	3.90

Based on the intended theoretical construct underpinning the items that loaded > |.40| on each factor, I labeled the nine resulting factors *social utility, salary, perceived*

cost, prior teaching and learning experiences, non-pecuniary benefits, task demand, interest/ability/encouragement, job security, and *social status* (see Tables F3 and F4 in Appendix F for the structure and pattern matrices). Figure 3 demonstrates how these factors map onto the study's theoretical framework. Non-italicized constructs in black loaded onto distinct factors; italicized black constructs loaded onto a factor with more than one theoretically-distinct construct (i.e., *social encouragement, perceived teaching ability, interest value*). Items related to the struck out constructs in gray (*social dissuasion*, *job transferability)* were removed from the analysis due to high or low inter-item correlations or insufficient MSA scores, as described above. Other gray constructs either (a) loaded with others on one higher-order factor (e.g., *expert career* and *high demand* loaded together on one *task demand* factor; all four social utility subscales loaded onto one *social utility* factor), or conversely, (b) loaded as multiple distinct factors rather than one higher-order factor (e.g., *social status* and *salary* emerged as distinct factors rather than as one *task return* factor; *job security* and *non-pecuniary benefits* emerged as separate factors rather than as one *personal utility value* factor).
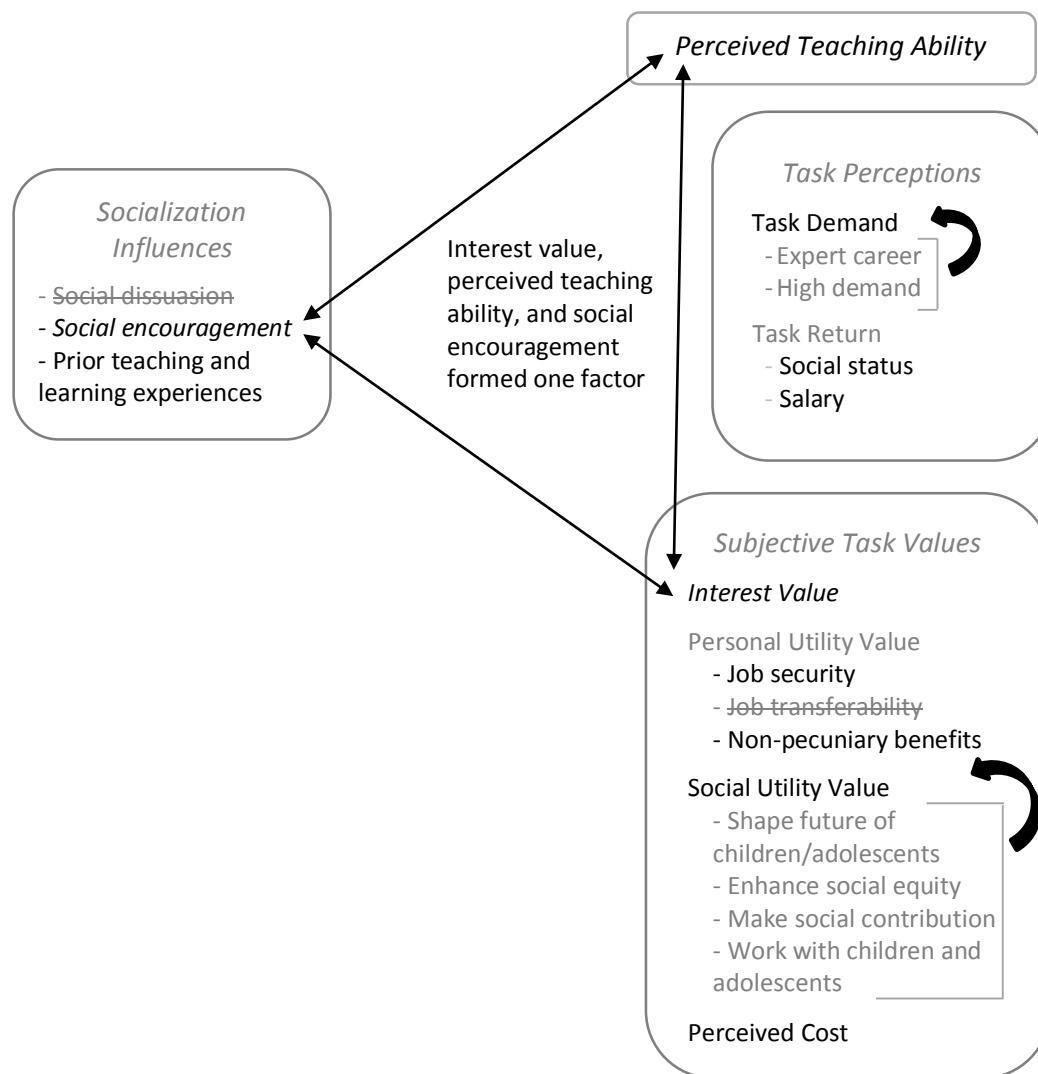
Figure 3. Factors Mapping onto Theoretical Framework

Overall, the nine factors identified through the EFA align with many of the latent

constructs Watt and Richardson (2007) specify on the FIT-Choice scale; however, they

deviate from previous work and from my theoretical framework in several important

ways. First, all the *social dissuasion* and *job transferability* items were removed from the

analysis due to low inter-item correlations or low MSA scores; thus, those constructs

were not included in the regression analysis. Second, the *interest value*, *perceived*

teaching ability, and *social encouragement items* loaded onto one factor. The two *task*

demand constructs (*expert career* and *high demand*) also loaded onto one factor. Third, all the *social utility* value constructs (*shape future of children/adolescents, enhance social equity, make social contribution, work with children and adolescents*) loaded onto one factor.

Based on these factor analytic results and the expectancy-value literature as summarized in Chapter 2, I created nine scales which I used as independent variables in the regression analysis. I used item means to calculate scale scores due to all survey items being assessed on the same 7-point, Likert-style scale. I also calculated regression-based scores, which were highly-correlated with the mean scores. All correlations between mean scores and regression scores were > .85; eight out of the nine were > .95. Given these high correlations, I used mean scores for ease of interpretation. Each final scale had high reliability with Cronbach's alpha ≥ .80. Factor mean scores, standard deviations, and Cronbach's alpha for these scales are presented in Table 8.

Table 8

Factor Means and Reliability

	M	*SD*	*Cronbach's α*
Social utility	5.49	.98	.90
Salary	2.75	1.17	.88
Perceived cost	3.19	1.16	.87
Prior teaching and learning experiences	6.11	.95	.88
Non-pecuniary benefits	5.34	.98	.80
Task demand	5.17	.92	.83
Interest/ability/encouragement	4.70	.95	.86
Job security	4.37	1.25	.86
Social status	4.58	1.02	.83

n = 294

The nine factors resulting from this series of EFAs may have differed from those Watt and colleagues (Watt & Richardson, 2007; Watt et al., 2012) identify for several reasons. First, I changed the wording of survey items slightly to accommodate the uncommitted prospective teacher sample as described in the *Survey Data and Design* section earlier in this chapter. In addition, as noted, I removed multiple items from the final EFA due to particular inter-item correlations being too high or too low. Another possible explanation for the differences in mine and Watt and colleagues' EFA results is that the uncommitted prospective teacher population may differ from the preservice teacher population with regard to their interest in teaching, experience with teacher education coursework, and exposure to the K-12 environment and K-12 educators, among other dimensions. These differences may have affected how respondents answered questionnaire items and which factors emerged from the analysis.

Ordinal logistic regression. After examining histograms, QQ plots, and Kolmogorov-Smirnov test results, I determined that the dependent variable and several of the independent, expectancy-value variables in the regression did not satisfy the normality assumption of multiple linear regression. I used ordinal logistic regression as an alternative procedure because it does not require that dependent or predictor variables be normally distributed or continuous. This analytic technique is appropriate for dependent variables that reflect an ordered, underlying continuum (Cohen, Cohen, West & Aiken, 2003). Ordinal logistic regression estimates the probability of membership in each category of the dependent variable, given values of the predictors and the thresholds.

I used the same dependent variable for all regressions in this study. This variable was an intent to teach survey item which asked: How likely are you to teach or prepare to teach at the K-12 level after earning your bachelor's degree? Respondents answered on a 7-point scale with three labeled points: extremely unlikely (1); am not sure (4); and extremely likely (7). I recoded the variable into three ordered levels for the regression: unlikely (*U*), not sure (*NS*), and likely (*L*). These three categories are separated by two thresholds (*U* to *NS*, and *NS* to *L*).

To answer RQ1, I started with an ordinal logistic regression model (model 1) that estimates the probability of membership in each category of intent to teach, given values of (a) the estimated thresholds,[32] (b) the demographic predictors (SAT score, sex, and race), and (c) the full set of nine EFA-derived, expectancy-value predictors.

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[32] The thresholds in ordinal logistic regression (α_j) correspond with the cut points between the levels of the ordered, dependent variable.

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{slry} - \beta_{cst} - \beta_{n.p.b.} - \beta_{s.s.} - \beta_{j.s.} - \beta_{s.u.} - \beta_{p.t.l.} - \beta_{t.d.} - \beta_{i/a/e} \qquad (1)$$

To further isolate the effects of the potentially influential expectancy-value variables with p-values $\leq .10$ in the model 1 analysis (full results reported in Chapter 4), I estimated a second, more parsimonious model (model 2). I elected to use the more liberal .10 cutoff for inclusion in model 2 due to the relatively small size of the sample and the likelihood of omitting potentially important policy-relevant variables with a more conservative cutoff. Model 2 includes (a) the estimated thresholds, (b) the demographic variables, and (c) only the expectancy-value variables with p-values $\leq .10$ in the model 1 analysis (salary, prior teaching and learning experiences, social utility, interest/ability/encouragement).

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{slry} - \beta_{p.t.l.} - \beta_{s.u.} - \beta_{i/a/e} \qquad (2)$$

To answer RQ2, I stratified the uncommitted prospective teacher sample into higher-achieving and lower-achieving students. Next, I conducted ordinal logistic regression analyses using the model 1 equation for each sample. Though they employ the same equation, for the purposes of reporting results, I refer to these models as model 3 for the higher-achieving sample and model 4 for lower-achieving sample.

Paralleling the analysis strategy for RQ1, I specified more parsimonious versions of models 3 and 4 for the respective samples. These models included (a) the estimated thresholds; (b) demographics, and (c) only the expectancy-value factors with p-values $\leq$ .10 in the model 3 and 4 analyses (salary, social status, social utility, prior teaching and learning experiences, and interest/ability/encouragement for model 5; social utility and interest/ability/encouragement for model 6). I labeled these equations model 5 for the

higher-achieving sample and model 6 for the lower-achieving sample. Chapter 4 reports the results of these analyses.

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{slry} - \beta_{s.s.} - \beta_{s.u.} - \beta_{p.t.l.} - \beta_{i/a/e} \tag{5}$$

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{s.u.} - \beta_{i/a/e} \tag{6}$$

RQ3 and RQ4: Descriptive statistics and chi-square tests of independence. To address RQ3 and RQ4, I analyzed descriptive statistics such as frequencies and means for the survey items pertaining to teacher preparation and recruitment policies and incentives. Because the response options for these items produced categorical data, I used chi-square tests of independence to examine whether a relationship exists between the items and respondents' SAT score or sex. I did not analyze differences by race due to small sample sizes for some racial/ethnic categories. The chi-square test of independence compares observed and expected frequencies in each cell of a contingency table containing two variables to determine whether the distribution of one variable is contingent upon the distribution of the second variable (Howell, 2004). I used the chi-square tests to examine, for example, whether respondents' interest in a particular set of teacher recruitment policies is contingent upon their sex.

Focus Group Analysis

My approach to focus group data analysis recognizes that in qualitative research, data collection and analysis are cyclical and overlapping rather than distinct and sequential processes (Merriam, 2009). I began focus group analysis following the first round of qualitative data collection in fall 2013 and used those preliminary findings to inform subsequent data collection and analysis efforts in spring 2014.

Constant comparison analysis served as the central technique I used to code, organize and interpret data emerging from the focus group discussions. This process involved shifting between inductive and deductive thinking in what Strauss and Corbin (1990) describe as a "constant interplay" between proposing ideas based on theory and literature and checking those patterns with concrete data (p. 111).

Specifically, Leech and Onwuegbuzie's (2007) five cyclical constant comparison procedures guided the analytic process. I began by reading through data from individual focus groups and labeling each meaningful section with a code that described its properties or dimensions. In this first coding process, which Strauss and Corbin (1999) term *open coding*, I used the theoretical framework to inform initial codes, but developed new codes where the data diverged from the theory. Throughout open coding, I focused on: (a) asking questions about the data; (b) making comparisons of commonalities and differences between and among incidents, events, and other instances of the phenomena; and (c) labeling and grouping similar events and incidents to form codes (Strauss and Corbin, 1990). As I acquired additional data, I revisited and revised existing codes from past focus groups to make sure the codes adequately characterized all related data.

Throughout the coding and data analysis process, I used miniframeworks, logic diagrams, and memos to synthesize and make meaning of the data (Strauss & Corbin, 1990). Miniframeworks and logic diagrams aided in recording preliminary observations and thoughts about the relationships among the data. To supplement these visual forms of analysis, I wrote what Strauss and Corbin (1990) term code memos, theoretical memos, and operational memos to help document and organize the data analysis process and to refine my thoughts. I began with code memos, which served to record and edit evolving

codes. As I grouped related codes and recognized patterns, I wrote theoretical memos that detailed emerging themes and subthemes and their properties, dimensions and relationships. I constructed brief operational memos throughout the process that functioned as a "to do list" of issues, thoughts, and questions that needed further attention.

After collecting and coding data from each focus group, I aggregated the data into one dataset and scrutinized it for conceptually-related codes. I then looked for broader themes based on each code grouping and examined the data within themes for consistency. I revised codes and themes as necessary throughout this process. Once I had identified themes that spanned focus groups, I connected and interrelated the themes and began constructing a final set of theoretical memos that described emergent findings and identified rich, representative data in support of those findings. I incorporated the quantitative survey results into the analysis during the final processes of developing and relating themes and writing the findings and discussion.

Validity and Reliability

In order to produce defensible results, data must be both valid and reliable. Quantitative and qualitative researchers have different, but related, criteria for establishing validity and reliability.

Ensuring that my data and subsequent conclusions represent the phenomena under study was of critical importance in this project. Prior to collecting survey data, I took steps to ensure that the survey was structured to have high content and construct validity

(Creswell, 2009).[33] To establish that the survey was poised to measure its intended content area (content validity), I submitted the instrument to two members of my dissertation committee who ascertained whether the items were relevant to the content area and well-designed.

Construct validity refers to the degree to which my survey captures the intended theoretical constructs. Although not a full analysis of construct validity, the exploratory factor analyses conducted on the expectancy-value survey items provide evidence that these items have construct validity. That is, that items designed to measure particular theoretical constructs are, in fact, related. Also, as described earlier in this chapter, I designed almost all expectancy-value survey items to be similar in format and content to items on Watt and Richardson's (2007) FIT-Choice scale because these items have been shown to have strong convergent and discriminant construct validity. The exception is the perceived cost scale, which I created myself and has not been subject to analysis beyond this study.

I also took steps to ensure the *credibility* of my focus group results by systematically searching for data that contradicted my findings, using member checking to confirm that I correctly identified and articulated findings, and triangulating focus group and survey data and results. After all focus groups were completed and preliminary themes were established, I sought feedback by email from focus group participants regarding the accuracy of conclusions. I also used findings from each method to triangulate conclusions drawn from the other method, which was a distinct advantage of

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[33] A third type of validity, criterion-related validity, was not directly applicable to the survey. Criterion-related validity is concerned with the instrument's ability to predict how well an individual will perform in a future situation (predictive validity) and/or the degree to which results on one instrument are related to results from another (concurrent validity) (Gay, Mills, & Airasian, 2006).

the mixed methods design of this study. By using both methods to cross-check data and interpretation, I was able to validate conclusions, identify areas of divergence, and offer explanations for any differences in the findings that emerged from each method (Guba & Lincoln, 1985). This triangulation process affords greater confidence in the interpretation of data and resulting conclusions.

Although this study's findings may have limited generalizability to new settings or different populations, I increased the *transferability* of findings by providing "thick description" when reporting focus group results so other researchers could judge the extent to which this study's research context is similar to theirs (Guba & Lincoln, 1985). By providing thick, rich description, I aimed to construct a narrative that provides sufficient detail to "produce for the readers the feeling that they have experienced, or could experience, the events being described in a study" (Creswell & Miller, 2000, p. 129).

Whereas validity concerns how well an instrument measures what it is intended to measure, *reliability* pertains to the consistency with which a quantitative data collection instrument measures its intended constructs (Gay, Mills & Airasian, 2006). The more reliable the instrument, the more certain the researcher can be that the results obtained from one administration of the instrument are essentially the same as those he or she would obtain from readministering the same instrument to the same study participants (Gay et al., 2006). Reliability analyses on the scales constructed from the survey data for this study indicate that the scales have good to excellent reliability, with Cronbach's alpha ranging from .8 - .9. To facilitate consistency across focus groups, I asked the same set of core protocol questions.

Rather than testing the reliability of particular data collection instruments, qualitative researchers aim to establish that their findings are dependable and confirmable (Guba & Lincoln, 1985). *Dependability* refers to the stability of findings after discounting the "conscious and unpredictable" changes that occur as a result of the emergent nature of qualitative research designs (Guba & Lincoln, 1985, p. 247). *Confirmability* is the extent to which study results can be confirmed or corroborated by individuals other than the researcher (Guba & Lincoln, 1985). The process of triangulating findings across both focus group and survey data aided in improving the dependability and confirmability of findings. I also established that results were confirmable by systematically synthesizing data through coding and memoing in order to substantiate all inferences with data.

Ethical Considerations and Confidentiality

Conducting an ethical study and maintaining the confidentiality of participants were key considerations in this project. In accordance with university policy, this research was approved by the Institutional Review Board (IRB). As detailed in the IRB application, I presented all survey and focus group participants with information about informed consent in writing. Those who completed the paper survey and/or attended a focus group were asked to sign the consent form prior to participating. I contacted those who completed the survey but did not sign the consent form via email to verify their consent. Data from participants who did not respond to my email message requesting consent were destroyed. Participants who completed the web-based survey were forced to click a box verifying their informed consent before progressing through the survey. In the focus groups, I provided participants with a consent form and addressed any questions.

All focus group and in-class survey participants were offered a copy of the consent form for their records.

I also took steps throughout the data collection, analysis, and reporting processes to ensure the confidentiality of participant information. I stored identifiable documents and focus group files on a password-protected computer in password-protected files. All other files contained non-identifiable participant numbers I assigned. Completed surveys were stored in a locked cabinet and will be destroyed within a year after they were collected.

Several focus group participants knew one another from class; thus, it was impossible to promise participants full anonymity. In order to stress confidentiality, I read a message at the start of each focus group that emphasized the importance of not repeating or paraphrasing any of the comments made during the discussion (see Appendix D) and allowed participants to leave prior to signing the consent form if they were not comfortable. No one chose to leave.

I notified participants during each phase of the study that summary results would be reported to the professional community but that it would not be possible to trace particular responses and comments to individual participants.

Limitations

The methodology and procedures for this study impose several known limitations that should be considered when evaluating findings. First, I recruited subjects from a convenience sample of students enrolled in select courses at one institution (see Chapter 1 for a description of the institution). Because the sample was not random, findings may not represent the views and experiences of all uncommitted prospective teachers at the

university. In particular, this sampling strategy may have excluded groups of students who are less likely to take education courses, such as STEM majors.

In addition, the survey and focus group samples differed, at least slightly, on several demographic dimensions. Compared to the survey sample, the focus group sample comprised more students who: were female; were white or Asian (and fewer who were Black/African-American or Hispanic); had junior and senior class standing; had a primary or secondary major in education; and had a primary major in computer, mathematical and natural sciences (and fewer who had a major in the social and behavioral sciences). In addition, given that all focus group participants met the criteria for "high-achieving" and "uncommitted prospective teacher" as outlined earlier in this chapter, students in the focus group sample, overall, had higher SAT scores and a greater degree of interest in and commitment to a teaching career than those in the survey sample.

Second, all data collected throughout the project, except for SAT scores, were self-reported. It is particularly important to emphasize that this study employs a cross-sectional, not a longitudinal design. It examines undergraduate students' self-reported intentions to pursue a teaching career at a given point in time, not their actual career decisions post-graduation.

Third, the nature of the quantitative data limited available analytic techniques. I removed several items from the exploratory factor analysis due to high or low inter-item correlations or low measure of sampling adequacy (MSA) scores, and the reduced number of items included in the EFAs may have affected how many and which factors were identified and subsequently included in the regressions. This issue is particularly

concerning with regard to the social dissuasion items, which were removed from the EFA due to low MSA scores. As Chapter 4 discusses in greater detail, social dissuasion emerged as an important career decision factor for focus group participants and would have been a valuable variable to include in the regression analyses. In addition, the dependent variable and multiple predictor variables in the regressions were not normally distributed, which prohibited the use of multiple linear regression. Though ordinal logistic regression is an appropriate technique for analyzing this study's data, the results are more abstract and less intuitive than those of multiple linear regression might have been.

Finally, the interactive nature of focus group discussions opens the door for participants to influence one another's contributions. Though I made an effort to ensure all participants' perspectives were heard, some students spoke more during the discussion than others. In addition, the survey item I used to identify uncommitted prospective teachers proved to be an imperfect measure of commitment to teaching such that in most focus groups, at least one participant was mostly committed to a teaching career. Because participants knew that fellow students in the room were planning to teach, some may not have been as candid about their views on the profession, which may have positively skewed some of the qualitative data. In other words, some participants may have withheld negative views of teaching knowing that others were likely to teach.

Summary

Chapter 3 reviewed the methodology and procedures for this project. This study utilizes a mixed methods research design with a survey and focus groups. Data obtained from these two methods are intended to provide complementary information about

uncommitted prospective teachers' career decisions, as well as to further develop and triangulate the findings gleaned from each method. Guided by the study's theoretical framework, I designed the focus group protocol and survey items to provide data on each of the four research questions. I adapted the majority of the survey items from Watt and Richardson's (2007) FIT-Choice scale but added a perceived cost subscale not present in their work.

I recruited survey participants from select education courses in summer 2013 through spring 2014 and invited a subset of survey respondents who were high-achieving, uncommitted prospective teachers to take part in focus groups during each academic term. I classified subjects as "high-achieving" if they had a composite SAT critical reading and mathematics score at or above 1200. In total, 664 students completed the survey. Of those respondents, 294 were classified as uncommitted prospective teachers and 144 were high-achieving, uncommitted prospective teachers. Forty-four of these 144 students participated in a focus group discussion.

I utilized exploratory factor analysis, ordinal logistic regression, descriptive statistics, and chi-square tests of independence to analyze survey data, and constant comparison analysis to analyze focus group data. I took measures at each step of research design, data collection, and data analysis to ensure that the information collected from both methods of this study was valid and reliable, and that data were collected, analyzed, stored and disseminated in an ethical manner.

CHAPTER 4: RESULTS

The purpose of this study was to explore the factors that influence whether uncommitted prospective teachers, particularly those with high levels of academic achievement, choose to teach. To reiterate, uncommitted prospective teachers in this study are undergraduates who have some degree of interest in a teaching career, as demonstrated by their responses on the survey, but are uncertain whether they will teach after graduation. High-achieving students are those with a composite critical reading and mathematics SAT score at or above 1200, the 85th percentile score of national test takers. 664 undergraduate students at the university participated in the survey for this study, and 44 of those survey respondents who were identified as high-achieving, uncommitted prospective teachers participated in focus group interviews. This chapter presents the findings from these quantitative and qualitative data, as guided by the study's four research questions:

1. To what extent are uncommitted prospective teachers' intentions to pursue a teaching career related to the following expectancy-value factors:

   a. Messages they receive about teachers and a teaching career and their previous teaching and learning experiences;

   b. Their perceived teaching ability;

   c. Their task perceptions of teaching (perceptions about task demand and task return);

   d. Their subjective task values for a teaching career (interest value, personal utility value, social utility value, and perceived cost).

2. How do the relationships between the expectancy-value factors outlined in question one and intent to pursue a teaching career affect higher-achieving, uncommitted prospective teachers, in particular?

3. What reasons do uncommitted prospective teachers give for not pursuing teacher certification while completing their bachelor's degree?

4. What types of policies and/or incentives might encourage high-achieving, uncommitted prospective teachers to become teachers?

The sections to follow report the quantitative then qualitative findings (where applicable) for each research question.

Research Question 1: Intent to Teach and Uncommitted Prospective Teachers

Research question one examines the relationships among expectancy-value factors and intent to teach for the sample of uncommitted prospective teachers, controlling for several demographic variables. I used ordinal logistic regression for this analysis chiefly because the quantitative data violated the normally distributed residual assumption of multiple linear regression as demonstrated through a series of exploratory analyses including QQ plots, histograms, and Kolmogorov-Smirnov tests.

The first analysis regressed intent to teach on three demographic variables and nine expectancy value variables (model 1). Institutional records provided information on students' SAT score, sex, and race/ethnicity. I derived the expectancy-value variables through a series of exploratory factor analyses, as detailed in Chapter 3. Most of these variables align with the theoretical constructs Watt and Richardson (2007) outlined, while others are combinations of those constructs. The expectancy-value predictor variables in the first ordinal logistic regression included salary, perceived cost, non-pecuniary

benefits, social status, job security, prior teaching and learning experiences, social utility, task demand, and interest/ability/encouragement. Because some of the continuous variables in the analysis employed different scales of measurement, I utilized standardized versions of all continuous variables to improve interpretability.

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{slry} - \beta_{cst} - \beta_{n.p.b.} - \beta_{s.s.} - \beta_{j.s.} - \beta_{p.t.l.} - \beta_{s.u.} - \beta_{t.d.} - \beta_{i/a/e} \qquad (1)$$

The quantity to the left of the equal sign in model 1 is the logit, which is the log of the odds that an event occurs. The α_j term is the threshold, which marks the transition from one category of the ordinal dependent variable to the next. For the model 1 analysis, the overall logit was significant with χ^2 (13) = 87.13, $p < .001$ [34] and Nagelkerke pseudo $R^2 = .33$. This finding provides evidence to support the conclusion that the specified model explains more of the variance in intent to teach than a model without these predictors.

A critical assumption of ordinal logistic regression is that the predictors have the same impact on crossing each threshold, or that the odds ratios for crossing the thresholds are equal (Cohen et al., 2003). I examined this proportional odds assumption by conducting a test of parallel lines. The proportional odds assumption was upheld for these data, with a non-significant finding of χ^2 (13) = 13.22, $p = .43$. This result implies that the effect of the predictors is not statistically different across the two cumulative splits for the data and provides further support for the use of ordinal logistic regression.

Coefficient estimates in ordinal logistic regression convey how much the predictor variables impact the logit (i.e., the change in log odds on the dependent variable

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[34] Throughout this chapter, the quantities in parentheses following the χ^2 notations represent the degrees of freedom in the analysis.

for a one-unit increase in the predictor). Controlling for the other variables in model 1, the estimates for one of the demographic variables (SAT) and two of the expectancy-value variables (social utility, interest/ability/encouragement) in the regression were statistically significant at α = .05. Two additional expectancy-value variables (salary and prior teaching and learning experiences) were significant at the more liberal α = .10 level. Parameter estimates and odds ratios for the full model are presented in Table 9; predictor estimates significant at α = .05 are shaded.

Table 9

Regression Results for Model 1

		B (SE)	Sig.	Odds Ratio Exp(B)	95% Confidence Interval	
					Lower Bound	Upper Bound
Threshold	[IntTeach = U]	-.27 (.3)	.37			
	[IntTeach = U or NS]	1.03 (.31)	.00			
Location	Sex = Male	0				
	Sex = Female	-.17 (.32)	.59	.84	.45	1.57
	Race = White	0				
	Race = Minority	-.06 (.3)	.83	.94	.52	1.69
	Race = unknown	-.86 (.79)	.28	.42	.09	1.99
	SAT	$-.34^{\dagger\dagger}$ (.14)	.01	.72	.55	.94
	Salary	$.30^{\dagger}$ (.157)	.05	1.36	1.00	1.84
	Perceived cost	.08 (.14)	.56	1.09	.82	1.45
	Non-pecuniary benefits	-.13 (.15)	.39	.88	.66	1.18
	Social status	-.18 (.15)	.23	.83	.62	1.12
	Job security	.13 (.17)	.44	1.14	.82	1.59
	Prior teaching and learning experiences	$-.27^{\dagger}$ (.15)	.07	.76	.57	1.02
	Social utility	$.55^{\dagger\dagger\dagger}$ (.19)	.00	1.74	1.19	2.53
	Task demand	.14 (.15)	.37	1.15	.85	1.55
	Interest/ ability/ encouragement	$.86^{\dagger\dagger\dagger}$ (.18)	.00	2.36	1.65	3.37

n = 250
† *p* < .10
†† *p* < .05
††† *p* < .01

The odds ratios (OR), which range from zero to infinity and are calculated by

exponentiating the regression coefficients, communicate the amount by which the odds of

selecting a higher-ordered response on the dependent variable are multiplied when the given predictor is increased by one unit (Cohen et al., 2003). Put differently, ORs are the factor by which the odds of "success" (i.e., selecting a higher category in the dependent variable) are expected to change for each one-unit change in the predictor variable, controlling for all other predictors in the model (O'Connell, 2006). An odds ratio of 1.0 corresponds with a regression coefficient of B = 0. Odds ratios greater than 1.0 are associated with positive regression coefficients and reflect an increase in the odds of selecting a higher response in the dependent variable with each unit increase in the predictor; conversely, ORs less than one correspond with negative regression coefficients and denote a decrease in the odds of falling into a higher category of the response variable for each unit increase in the predictor variable (Cohen et al., 2003). For example, for a one-unit increase in a predictor variable, an odds ratio of 1.5 indicates a 50% increase in the likelihood of a higher response while an odds ratio of .50 indicates a 50% decrease in the likelihood of a higher response.

In the model 1 analysis, the odds ratios for social utility (1.74) and interest/ability/encouragement (2.36) are both greater than one, indicating that respondents with higher scores on these two variables are more likely to report intending to teach than those with lower scores. Although both social utility value and interest/ability/encouragement have positive effects on intent to teach, the latter variable is more influential than the former. Conversely, the OR for SAT (.72) is less than one, which demonstrates that the higher SAT score an uncommitted prospective teacher has, the lower are his or her odds of intending to teach.

To isolate the effects of the influential variables identified in the first analysis, I conducted a second, more parsimonious ordinal logistic regression analysis regressing intent to teach on sex, race, and SAT, as well as the four expectancy-value variables with p-values $\leq .10$ in the model 1 analysis[35]: salary, prior teaching and learning experiences, social utility and interest/ability/encouragement (model 2).

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{slry} - \beta_{p.t.l.} - \beta_{s.u.} - \beta_{i/a/e} \tag{2}$$

Results for model 2 are reported in Table 10. The overall regression was significant with $\chi^2 (8) = 82.95$, $p < .001$, but the Nagelkerke pseudo R^2 measure was reduced minimally from .33 in the model 1 analysis to .32 in the model 2 analysis. Though the reduced pseudo R^2 indicates model 2 explains slightly less variance than model 1, model 2 has the advantage of parsimony. Model 2 results shed additional light on how SAT, salary, prior teaching and learning experiences, social utility, and interest/ability/encouragement contribute to uncommitted prospective teachers' reported intent to teach, holding fewer variables constant. As with model 1, salary and prior teaching and learning experiences were not statistically significant predictors of intent to teach at $\alpha = .05$ in model 2. In addition, the model 2 analysis provides no evidence that sex or race have statistically significant effects on uncommitted prospective teachers' intentions to pursue a teaching career when controlling for the other predictors in the model.

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[35] I elected to use a more liberal p-value for inclusion in the parsimonious model due to the relatively small sample size and the likelihood of omitting potentially important policy-relevant variables with a more conservative cutoff.

Table 10

Regression Results for Model 2

		B (SE)	Sig.	Odds Ratio Exp(B)	95% Confidence Interval	
					Lower Bound	Upper Bound
Threshold	[IntTeach = U]	-.24 (.30)	.42			
	[IntTeach = U or NS]	1.05 (.30)	.00			
Location	Sex = Male	0		1		
	Sex = Female	-.17 (.31)	.59	.85	.46	1.55
	Race = White	0		1		
	Race = Minority	.06 (.29)	.83	1.07	.60	1.88
	Race = unknown	-.87 (.79)	.27	.42	.09	1.95
	SAT	-.32†† (.13)	.02	.73	.56	.95
	Salary	.25† (.13)	.06	1.28	.99	1.66
	Prior teaching and learning experiences	-.27† (.14)	.06	.76	.57	1.01
	Social utility	.52††† (.17)	.00	1.69	1.22	2.33
	Interest/ ability/ encouragement	.92††† (.17)	.00	2.50	1.80	3.49

n = 250
† *p* < .10
†† *p* < .05
††† *p* < .01

The odds ratios for the three significant predictors at α = .05 (SAT, social utility and interest/ability/encouragement) were similar in magnitude and direction to the model 1 estimates. The social utility OR decreased slightly from model 1 (1.74) to model 2 (1.69) but was still greater than one, which indicates that uncommitted prospective teachers' social utility value for teaching has a positive effect on their intent to teach. Conversely, the ORs for SAT (model 1 = .72; model 2 = .73) and interest/ability/encouragement (model 1 = 2.36; model 2 = 2.5) increased slightly in the

more parsimonious model. These results show that while higher SAT scores are negatively associated with uncommitted prospective teachers' intentions to pursue a teaching career, their interest/ability/encouragement in the field has a substantial, positive effect.

Findings from model 2 demonstrate that of the variables included in the analysis, uncommitted prospective teachers' interest in teaching, perceived teaching ability, and encouraging messages they receive about the career (interest/ability/encouragement) has the most substantial, positive influence on the odds of these individuals intending to pursue a K-12 teaching career, holding the other variables in the model constant. How much uncommitted prospective teachers value the ability to make a social contribution through teaching and to influence the lives of children and adolescents (social utility value) also has a positive effect on intent to teach, albeit a smaller effect than interest/ability/encouragement. SAT scores, on the other hand, have a weaker, negative relationship with intent to teach; uncommitted prospective teachers with higher SAT scores are less likely to intend to teach than their lower-scoring peers.

Probabilities, which range in value from 0 to 1, are more conceptually straightforward than odds ratios; thus, examining the results of model 2 in terms of predicted probabilities further illuminates the relationships between intent to teach and the three significant predictors ($\alpha = .05$). Estimated predicted probabilities for each category of intent to teach for individuals who scored one standard deviation above and below the mean on the three statistically significant variables at $\alpha = .05$ (SAT, social utility, and interest/ability/encouragement) are reported in Table 11. Appendix G provides an example of how I calculated these values.

Table 11

Predicted Probabilities for Model 2

Scenario	Unlikely Prob(Y = 0)	Not Sure Prob(Y = 1)	Likely Prob(Y = 2)
+1 SD SAT	.52	.27	.21
-1 SD SAT	.36	.31	.33
+1 SD Social utility	.32	.31	.37
-1 SD Social utility	.57	.26	.17
+1 SD Interest/ability/encouragement	.24	.29	.47
-1 SD Interest/ability/encouragement	.66	.21	.12

Note. Rows may not sum to 100 due to rounding.

Figure 4 highlights discrepancies in predicted probabilities for the *likely* intent to teach response for individuals who scored one standard deviation above and below the mean on the three significant predictors. As might be expected, uncommitted prospective teachers with SAT scores one standard deviation below the mean had an over 50 percent greater probability of being likely to teach (.33) than individuals with higher than mean SAT scores (.21). A reverse pattern was present for interest/ability/encouragement and social utility: uncommitted prospective teachers who scored one standard deviation above the mean on interest/ability/encouragement were almost four times as probable to report being likely to teach (.47) as those who scored one standard deviation below the mean (.12). Similarly, individuals with a social utility value for teaching one standard deviation above the mean were over twice as probable to indicate being likely to teach (.37) as their peers with a lower social utility score (.17).
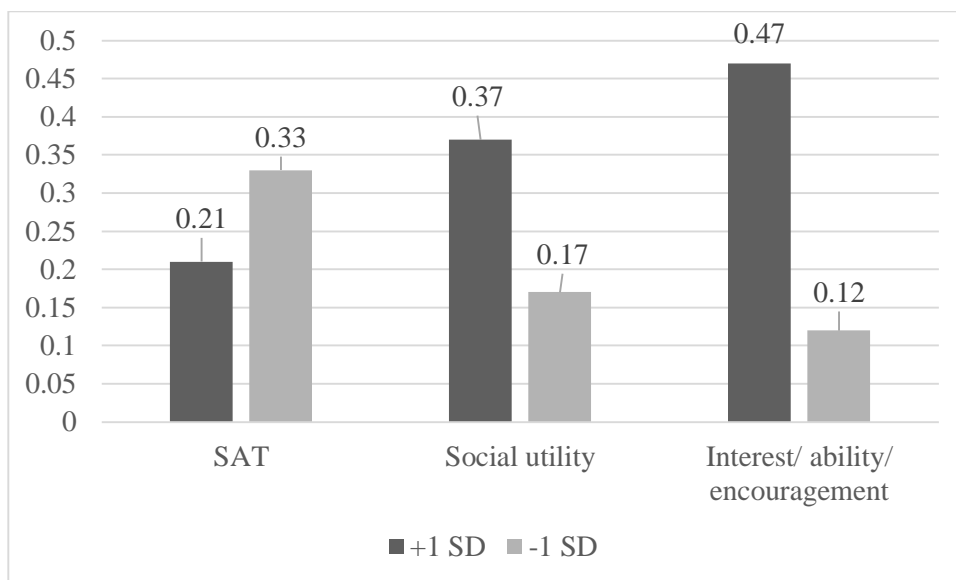
Figure 4. Model 2 Predicted Probabilities for Likely to Teach, Uncommitted Prospective Teachers

Summary

An ordinal logistic regression analysis of the survey data related to research question one on the full sample of uncommitted prospective teachers reveals positive, statistically significant relationships between respondents' intentions to pursue a teaching career and (a) their interest in, perceived ability related to, and encouragement for a teaching career (interest/ability/encouragement) and (b) how valuable they find the social utility aspects of the occupation, including the ability to contribute to society, enhance social equity, and work with and influence the lives of children and adolescents (social utility value). These findings align with the prevailing trends in the literature as well as commonsense expectations. Uncommitted prospective teachers who are interested in teaching, believe they would be skilled teachers, and are encouraged to teach are more likely to intend to pursue the profession, as are those who find teaching to be a socially useful career.

Regression results also point to a somewhat weaker, but statistically significant, negative relationship between uncommitted prospective teachers' SAT scores and their intent to teach; that is, findings demonstrate that those with higher SAT scores are less likely to plan to pursue a teaching career than those with lower scores.

Research Question 2: Intent to Teach and Academic Achievement

Whereas research question one examined the full sample of uncommitted prospective teachers, research question two uses quantitative and qualitative data to take a closer look at the factors that influence higher-achieving students' intentions to pursue a teaching career. This section first reports results from ordinal logistic regression analyses of the survey data and then summarizes findings from the focus group data.

Quantitative Findings

The quantitative analysis for RQ2 investigates the relationships between expectancy-value factors and intent to teach among uncommitted prospective teachers stratified into subsamples of higher-achieving (SAT ≥ 1200) and lower-achieving (SAT < 1200) individuals. To begin, for each subsample I used ordinal logistic regression to regress intent to teach on the three demographic variables and nine expectancy-value variables included in model 1. To differentiate results, I refer to the analysis with the higher-achieving subsample as model 3 and the analysis with the lower-achieving subsample as model 4.

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{slry} - \beta_{cst} - \beta_{n.p.b.} - \beta_{s.s.} - \beta_{j.s.} - \beta_{s.u.} - \beta_{p.t.l.} - \beta_{t.d.} - \beta_{i/a/e} \qquad (3, 4)$$

Using the stratified sample allowed me to examine all possible interactions associated with the predictor variables and academic achievement. It also permitted me to

test whether the coefficients in the models differ among higher- and lower-achieving students, controlling for variations in achievement within those groups. Because some of the continuous variables employed different scales of measurement, I utilized standardized versions of all continuous variables to improve interpretability. The sections below report results for these ordinal logistic regression analyses, beginning with results from the full models for the higher-achieving (model 3) and lower-achieving subsamples (model 4) and moving toward more parsimonious models for each group (models 5 and 6, respectively).

Full models. The overall logit for model 3 with the higher-achieving sample was significant with χ^2 (13) = 66.3, $p < .001$ and Nagelkerke pseudo R^2 =.43. This R^2 value was greater than the R^2 for either the full or reduced model analyses with the overall uncommitted prospective teacher sample (model 1 = .33, model 2 = .32), which indicates that model 3 explains more variance in higher-achieving students' intentions to teach than models 1 and 2 do for uncommitted prospective teachers overall. In addition, a test of parallel lines for model 3 was non-significant, χ^2 (13) = 1.91, p =1.00, which provides evidence that the proportional odds assumption was upheld for these data.

Model 4 parallels the model 3 analysis but with the lower-achieving, uncommitted prospective teacher sample. As with the previous analyses, the overall logit for model 4 was also significant with χ^2 (13) = 32.393, p = .002; however, the Nagelkerke pseudo R^2 was smaller for the lower-achieving subsample (.29) than for the full or higher-achieving subsamples. A test of parallel lines for model 4 was non-significant, χ^2 (13) = 4.6, p =.990. Parameter estimates and odds ratios for the models 3 and 4 are presented in Table 12. Predictor estimates significant at α = .05 are shaded.

Table 12

Regression Results for Models 3 and 4, Higher- and Lower-Achieving

		Model 3, Higher-achieving					Model 4, Lower-achieving				
		B (SE)	Sig.	Odds Ratio Exp(B)	95% Confidence Interval Lower Bound	Upper Bound	B (SE)	Sig.	Odds Ratio Exp(B)	95% Confidence Interval Lower Bound	Upper Bound
Threshold	[IntTeach = U]	-.32 (.51)	.53				-.36 (.61)	.55			
	[IntTeach = U or NS]	.82 (.51)	.11				1.26†† (.62)	.04			
Location	Sex = Male	0		1			0		1		
	Sex = Female	.13 (.43)	.77	1.13	.49	2.63	-.30 (.56)	.60	.74	.24	2.24
	Race = White	0		1			0		1		
	Race = Minority	.02 (.46)	.96	1.02	.42	2.51	.15 (.48)	.75	1.09	1.17	.46
	Race = unknown	-1.43 (1.24)	.25	.24	.02	2.72	.16 (1.24)	.90	1.17	.10	13.18
	SAT	-.81† (.41)	.05	.45	.20	1.00	-.33 (.30)	.27	.72	.40	1.29
	Salary	.57†† (.25)	.02	1.77	1.08	2.89	.07 (.25)	.77	1.08	.66	1.76
	Cost	-.01 (.22)	.96	.99	.65	1.52	.24 (.21)	.24	1.27	.85	1.91
	Non-pecuniary benefits	-.03 (.21)	.90	.97	.64	1.48	-.13 (.25)	.61	.88	.54	1.44
	Social status	-.37 (.23)	.10	.69	.44	1.08	.09 (.24)	.69	1.10	.69	1.76

	.02 (.25)	.92	1.02	.63	1.68	.13 (.26)	.62	1.13	.69	1.87
Job security	.02 (.25)	.92	1.02	.63	1.68	.13 (.26)	.62	1.13	.69	1.87
Social utility	.64†† (.27)	.02	1.90	1.12	3.22	.62† (.32)	.05	1.86	.10	3.48
Prior teaching and learning experiences	-.46†† (.22)	.04	.63	.41	.97	-.05 (.23)	.83	.95	.61	1.49
Task demand	.08 (.23)	.72	1.09	.69	1.71	.29 (.23)	.21	1.33	.85	2.10
Interest/ability/ encouragement	1.28††† (.29)	.00	3.59	2.03	6.35	.44 (.27)	.10	1.55	.91	2.63

Higher-achieving *n* = 144, Lower-achieving *n* = 116

† *p* < .10

†† *p* < .05

††† *p* < .01

Higher-achieving. Controlling for the other variables in the model 3 higher-achieving analysis, the estimates for four of the expectancy-value variables in the regression were statistically significant at $\alpha = .05$, including salary, social utility, prior teaching and learning experiences, and interest/ability/encouragement. SAT was very close to reaching significance with a *p*-value equal to .05. No other predictor variables in the model were significant.

The coefficient estimates and corresponding odds ratios for the three statistically significant predictors ($\alpha = .05$) that had a positive effect on intent to teach for the higher-achieving subsample (salary, social utility, and interest/ability/encouragement) were larger for higher-achieving respondents than for the uncommitted prospective teachers examined in RQ1. Importantly, the coefficient for salary was non-significant for the uncommitted prospective teacher sample (OR = 1.36, model 1) [36], but significant for the higher-achieving sample (OR = 1.77, model 3). In addition, the odds ratio for interest/ability/encouragement was a full point larger for the higher-achieving students (OR = 3.59, model 3) than for the overall uncommitted prospective teacher students (OR = 2.5, model 2). For social utility, the OR increased from 1.69 in the model 2 analysis to 1.9 in the model 3 analysis. These findings demonstrate that (a) interest in teaching, perceived ability in teaching and encouragement to teach (interest/ability/encouragement) has a substantially stronger impact on higher-achieving students' intentions to teach than uncommitted prospective teachers overall; and (b) positive salary perceptions and social utility value have slightly stronger positive effects on intent to teach among higher-achieving, uncommitted prospective teachers.

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[36] Because it was non-significant in model 1, salary was not included in model 2.

Lower-achieving. Curiously, the model 4 analysis with the lower-achieving subsample yielded no statistically significant relationships among any of the independent variables and intent to teach at $\alpha = .05$. Social utility was very close to reaching statistical significance, however, with an odds ratio of 1.86 and a *p*-value of .05. According to this analysis, how socially valuable respondents find a teaching career appears to be the only predictor with much influence on intent to teach for lower-achieving, uncommitted prospective teachers, though it did not reach statistical significance at $\alpha = .05$. In fact, the ORs for social utility were quite similar for the higher-achieving (OR = 1.9, model 3) and lower-achieving subsamples (OR = 1.86, model 4).

Interest/ability/encouragement was close to reaching statistical significance at the more liberal $\alpha = .10$ for the lower-achieving subsample (*p*-value = .10). Although this variable emerged as the strongest predictor of intent to teach in the analyses of uncommitted prospective teachers overall (model 2) and higher-achieving, uncommitted prospective teachers, specifically (model 3), it appears to be a much less influential factor for lower-achieving students. For these students, interest/ability/encouragement has less than half the positive impact on the odds of being likely to teach (OR = 1.55, model 4) as it does for higher-achieving students (OR = 3.59, model 3).

The other two statistically significant expectancy-value predictors for intent to teach among higher-achieving students—salary and prior teaching and learning experiences—were not close to reaching statistical significance at the $\alpha = .05$ or .10 levels for lower-achieving students.

Reduced models. To further explore the effects of potentially important predictors of intent to teach for higher-achieving and lower-achieving uncommitted prospective teachers, I specified a more parsimonious model for each group (models 5 and 6, respectively). In these analyses, I regressed intent to teach on the three demographic variables (sex, race, SAT) and the expectancy-value variables with p-values $\leq .10$ in the respective model 3 or 4 analysis.[37] For the model 5 analysis with the higher-achieving subsample, these expectancy-value variables included salary, social status, social utility, prior teaching and learning experiences, and interest/ability/encouragement. For the lower-achieving, model 6 analysis, the expectancy-value variables were social utility and interest/ability/encouragement.

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{slry} - \beta_{s.s.} - \beta_{s.u.} - \beta_{p.t.l.} - \beta_{i/a/e} \qquad (5)$$

$$\ln(\theta_j) = \alpha_j - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{s.u.} - \beta_{i/a/e} \qquad (6)$$

Results for models 5 and 6 are reported in Table 13. The overall regression for model 5 was significant, $\chi^2 (9) = 66.12$, $p < .001$, and the Nagelkerke pseudo R^2 measure remained the same (.43) for the full model 3 and reduced model 5 analysis with the higher-achieving subsample. The model 6 regression for the lower-achieving subsample was also significant, $\chi^2 (6) = 26.6$, $p < .001$, but the Nagelkerke pseudo R^2 measure was reduced slightly from .29 in model 4 to .25 in model 6.

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[37] I elected to use a more liberal p-value for inclusion in the parsimonious models due to the relatively small sizes of the stratified samples and the likelihood of omitting potentially important policy-relevant variables with a more conservative cutoff.

Table 13

Regression Results for Models 5 and 6, Higher- and Lower-Achieving

| | | Model 5, Higher-achieving | | | | | Model 6, Lower-achieving | | | | |
		B (SE)	Sig.	Odds Ratio Exp(B)	95% Confidence Interval Lower Bound	Upper Bound	B (SE)	Sig.	Odds Ratio Exp(B)	95% Confidence Interval Lower Bound	Upper Bound
Threshold	[IntTeach = U]	-.32 (.5)	.53				-.28 (.54)	.61			
	[IntTeach = U or NS]	.82 (.51)	.11				1.27 (.56)	.02			
Location	Sex = Male	0		1			0		1		
	Sex = Female	.13 (.42)	.75	1.14	.50	2.62	-.32 (.49)	.52	.73	.28	1.91
	Race = White	0		1			0		1		
	Race = Minority	.02 (.45)	.97	1.02	.42	2.44	.35 (.41)	.39	1.42	.64	3.16
	Race = unknown	-1.4 (1.2)	.25	.25	.02	2.61	.29 (1.19)	.81	1.33	.13	13.76
	SAT	-.79† (.4)	.05	.45	.21	1.00	-.30 (.28)	.28	.74	.43	1.27
	Social utility	.66†† (.24)	.01	1.93	1.21	3.06	.56†† (.26)	.03	1.74	1.05	2.89
	Interest/ability/ encouragement	1.31††† (.27)	.00	3.69	2.17	6.25	.56†† (.24)	.02	1.75	1.10	2.78
	Salary	.57†† (.24)	.02	1.77	1.12	2.81					
	Social status	-.37 (.22)	.10	.69	.45	1.07					
	Prior teaching and learning experiences	-.45†† (.21)	.03	.64	.42	.97					

Higher-achieving *n* = 144, Lower-achieving *n* = 116

† *p* < .10

†† *p* < .05

††† *p* < .01

Higher-achieving. The coefficients and odds ratios were quite similar in magnitude and direction for each of the predictors in the model 3 and 5 higher-achieving analyses. In fact, the ORs for salary were identical across the two models (1.77). The ORs were slightly larger in model 5 than model 3 for social utility (model 5 = 1.93, model 3 = 1.90), interest/ability/encouragement (model 5 = 3.69, model 3 = 3.59), and prior teaching and learning experiences (model 5 = .64, model 3 = .63). Whereas social utility and interest/ability/encouragement had slightly larger positive effects in the reduced model 5 analysis, prior teaching and learning experiences had a slightly smaller negative effect in the reduced model. The similar results for models 3 and 5 indicate that the additional variables in model 3 contribute minimally to intent to teach and that model 5 provides a cleaner interpretation of the effects of the predictors.

Findings from the model 5 analysis with the higher-achieving subsample indicate that interest in teaching, perceived teaching ability, and encouraging messages about teaching (interest/ability/encouragement) have a substantially stronger positive effect on the odds of high-achieving students intending to teach (OR = 3.69, model 5) than on uncommitted prospective teachers overall (OR = 2.5, model 2) and lower-achieving students (OR = 1.75, model 6). Social utility value also emerges as a stronger predictor of intent to teach for higher-achieving students (OR = 1.93, model 5) than for uncommitted prospective teachers overall (OR = 1.69, model 2) and lower-achieving students (OR = 1.74, model 6).

Notably, salary perceptions and prior teaching and learning experiences were statistically significant predictors of intent to teach for higher-achieving students at $\alpha =$ .05 in the full and reduced models, but not for the general uncommitted prospective

teacher sample in either model. Model 5 results indicate that higher-achieving students who have more positive perceptions of teachers' salaries have greater odds of intending to teach than those with less favorable salary perceptions (OR = 1.77). Curiously, higher-achieving students with higher scores for their prior teaching and learning experiences had lower odds of intending to teach (OR = .64) than those with lower scores. The inverse relationship between these two variables was not unique to higher-achieving students: the prior teaching and learning coefficients in the model 1 analysis with uncommitted prospective teachers and model 4 analysis with lower-achieving students were also negative but not statistically significant.

Although the model 5 analysis did not suggest a statistically significant relationship between social status and intent to teach for higher-achieving students, the negative coefficient for this variable is unexpected, especially given that the qualitative data emphasize the importance of teaching's social status as discussed in the next section of this chapter. This discrepancy in the quantitative and qualitative findings may be due to the fact that students who report being more likely to teach may also have more exposure to the classroom than others and thus, may have a more realistic perception of teachers' experiences and the profession's social status.

Table 14 reports the predicted probabilities for each intent to teach response (unlikely, not sure, likely) for a higher-achieving, uncommitted prospective teacher who scored one standard deviation above and below the mean on each of the four statistically significant (α = .05), expectancy-value predictors in model 5.

Table 14

Predicted Probabilities for Model 5, Higher-achieving

Scenario	Unlikely Prob(Y = 0)	Not Sure Prob(Y = 1)	Likely Prob(Y = 2)
+1 SD Social utility	.28	.26	.46
-1 SD Social utility	.58	.23	.19
+1 SD Interest/ability/encouragement	.17	.22	.61
-1 SD Interest/ability/encouragement	.72	.17	.11
+1 SD Salary	.29	.27	.44
-1 SD Salary	.56	.24	.2
+1 SD Prior teaching and learning	.54	.25	.22
-1 SD Prior teaching and learning	.31	.28	.41

Note. Rows may not sum to 100 due to rounding.

Figure 5 highlights differences in the predicted probabilities for a likely response for individuals who scored one standard deviation above and below the mean for each predictor. This graphic illustrates the substantial impact of interest/ability/encouragement on intent to teach: higher-achieving students who score one standard deviation above the mean on this variable have over five times the probability of being likely to teach (.62) as those who score one standard deviation below (.11). The effects of social utility value and salary are also considerable; higher-achieving students who score one standard deviation above the mean (social utility = .46, salary = .44) are over twice as likely to intend to teach as individuals who score one standard deviation below the mean (social utility = .19, salary = .2). A reverse pattern exists for prior teaching and learning experiences: higher-achieving students who score one standard deviation above the mean on this variable are just over half as likely to intend to teach (.22) as those who score one standard deviation below the mean (.41).
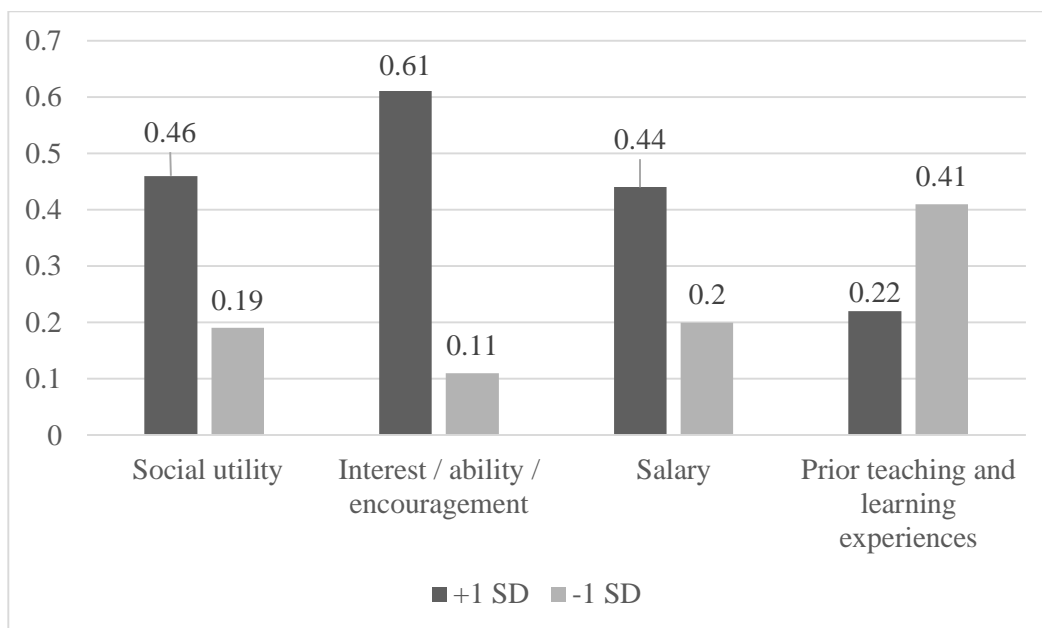
Figure 5. Model 4 Predicted Probabilities for Likely to Teach, Higher-achieving

Lower-achieving. Including fewer expectancy-value predictors, in model 6 both social utility and interest/ability/encouragement emerged as statistically significant predictors of intent to teach for lower-achieving, uncommitted prospective teachers at $\alpha =$ .05. The odds ratio was reduced slightly for social utility from the full model 4 analysis (1.86) to the reduced model 6 analysis (1.74) and increased slightly for interest/ability/encouragement from model 4 (1.55) to model 6 (1.75). These adjustments resulted in nearly identical coefficients and odds ratios for social utility and interest/ability/encouragement, meaning the variables have similarly-sized, positive effects on lower-achieving students' intent to teach. Overall, findings from the model 6 analysis indicate that social utility has a positive effect on intent to teach for lower-achieving students that is comparable in size to the effects of the variable on the intentions of uncommitted prospective teachers overall and higher-achieving students.

Interest/ability/encouragement appears to have a much weaker influence on intent to teach for lower-achieving students than for either of the other two groups.

Table 15 reports the effects of social utility and interest/ability/encouragement on intent to teach for lower-achieving respondents in terms of predicted probabilities. Because their coefficients rounded to the same values, the predicted probabilities for these two variables are the same.

Table 15

Predicted Probabilities for Model 6, Lower-achieving

Scenario	Unlikely Prob(Y = 0)	Not Sure Prob(Y = 1)	Likely Prob(Y = 2)
+1 SD Social utility	.3	.37	.33
-1 SD Social utility	.57	.29	.14
+1 SD Interest/ability/encouragement	.3	.37	.33
-1 SD Interest/ability/encouragement	.57	.29	.14

Figure 6 examines the discrepancies for the *likely* intent to teach response option for lower-achieving, uncommitted prospective teachers with values one standard deviation above and below the mean scores for social utility and interest/ability/encouragement. The predicted probability of being likely to teach for individuals who scored one standard deviation above the mean on either of these predictors was over double (.33) that of those who scored one standard deviation below (.14). Still, these variables have substantially less impact on intent to teach among lower-achieving students than they do among higher-achieving students. The predicted probability of a likely intent to teach response for a higher-achieving student who scored one standard deviation above the mean on interest/ability/encouragement is almost

double (.62) that of a lower-achieving student with a similarly high

interest/ability/encouragement score (.33).
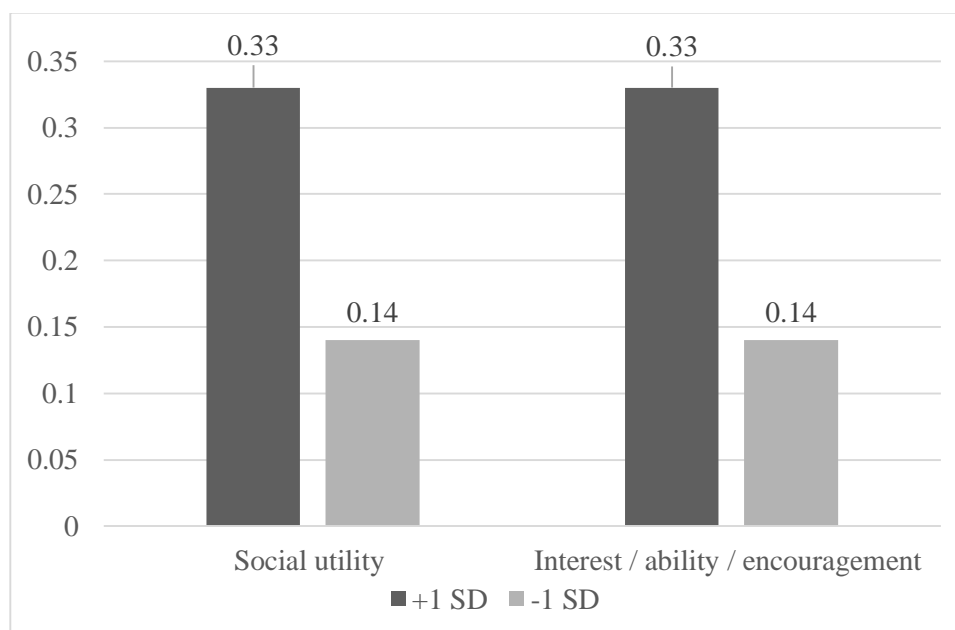
Figure 6. Model 6 Predicted Probabilities for Likely to Teach, Lower-achieving

Qualitative Findings

All students in the focus groups were higher-achieving, uncommitted prospective

teachers at the time they completed the survey for this study, meaning they (a) expressed

a current or past interest in teaching on the survey, but indicated they were uncertain

whether they would teach after graduation, and (b) had high SAT scores compared to

their peers. As noted in Chapter 3, seven uncommitted prospective teachers in the focus

groups were also preservice teachers who were enrolled in an undergraduate-level teacher

preparation program at the time of the survey but reported being uncertain as to whether

they would teach after graduation. Several others said they had either applied for or were

planning to apply for an undergraduate-level, master's-level or alternative post-

baccalaureate teacher preparation program. Although all focus group participants reported being uncommitted to teaching at the time of the survey, at least one individual in each focus group indicated during the discussion that he or she would probably teach after graduation; thus, throughout this section, I reference participants who said they plan to teach.

Focus group conversations among participants touched on every concept in the theoretical framework, though students spent more time discussing some topics such as task demand and task return than others. The following subsections are organized by constructs in the theoretical framework, including: (a) socialization influences; (b) perceived teaching ability; (c) task perceptions of teaching; and (d) subjective task values. Within each section, I discuss prevalent and minority views for major then minor themes that emerged during the discussions.

Socialization influences. Whereas the quantitative findings indicate that encouraging messages about teaching contribute to the most influential positive predictor (interest/ability/encouragement) of intent to teach among higher-achieving students, focus group results suggest that these students rarely hear encouraging messages about the profession. Instead, they reported receiving a range of direct and indirect, mostly negative messages about teaching from a variety of sources. While participants said that the general messages about teachers from the media often reinforce the importance of the field, they recounted a number of more direct messages from family members, peers, and former teachers that appeared to be more influential in their decisions about whether to teach. These messages were largely intended to dissuade participants from teaching, though several women reported hearing occasional comments about how teaching offers

a family-friendly schedule. A few students also recounted hearing that compared to other fields, teaching jobs are plentiful and the profession offers competitive benefits. Although the quantitative analysis did not examine the impact of negative messages on intent to teach, focus group findings suggest that dissuading comments about the field can have a substantial impact on these students' career decisions. [38]

Prior teaching and learning experiences, which emerged as a significant, negative predictor of intent to teach for higher-achieving students in the quantitative analysis, were not a prominent topic of discussion in any of the focus groups. Though nearly all participants described their K-12 experiences with teaching and learning as positive, they did not emphasize these experiences as a significant factor in their own decisions about whether to teach.

Living up to their professional potential. When participants shared their interest in teaching with parents, family, peers, or former teachers, the most common message they reported hearing was a version of "you can do so much more than that." For most students, these types of messages appeared to have a powerfully negative effect on their career choice largely because the messages they hear about teaching do not align with other messages they hear about their academic aptitude and career potential. One participant said that even though she will likely teach after graduation, the "stigma" that teaching is not for intelligent students is "the biggest thing that makes it not appealing." This comment represents the views of several others as expounded on in the *Social Status* section of *Task Return* later in this chapter.

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[38] Three items related to discouraging messages about teaching were included on the survey, but these items were eliminated from the exploratory factor analysis due to low correlations with other items in the analysis (see Chapter 3 for more details).

Several participants noted that their parents, in particular, viewed them as "smart kids" who should choose a profession that is "a lot more difficult" and "lucrative" rather than "settle" for an "easier" career like teaching. One student who plans to go into higher education summed up her parents' view with the following comment:

> My parents are supportive but my mom less so than my dad just because she always kind of had this perception that I was the smart kid and stuff and has this feeling that I can do better. She always had this idea that I wanted to be a doctor even though I never said that ... she doesn't think teaching's a bad job, and she respects the profession. She doesn't think the money is that bad, anything like that … it's kind of like a thing about, "well you're such a smart girl, why don't you do something else? Why don't you do something more?"

Multiple students reported receiving dissuading messages from their parents who are from countries other than the United States. Four participants with parents from Asian countries were discouraged from considering teaching in part because of a perceived lack of respect Americans have for teachers compared to teaching's "very respected" position in their country of origin. One such student, whose mother is from Vietnam, said her mom was "so surprised" when she came home from school with stories of "kids rolling their eyes, or being disrespectful, or just tuning out when the teacher's talking." Consequently, her mother does not support her choosing to teach. For three out of four of these students, their parents' negative perceptions of teaching in the U.S. almost completely ruled out the career for them. The fourth student said that although his parents' views influenced his decision to major in a field other than education at the undergraduate level, he has decided to enter a master's-level teacher preparation program if he is accepted.

Parents were not the sole source of negative messages about teaching's low social status; several students recounted similar interactions with other individuals. One

participant, who said she will likely teach, noted that people have asked her why she would "waste her talent" on teaching. She went on to add:

> I got really good grades in high school, and people would just be like "oh, what are you going to do?," and I'd be like "oh I want to be an elementary school teacher." And they're like "... aren't you smart?" I'm like "I like to think so." And they say "why are you wasting it on that?"

Messages about teachers' academic abilities seemed to be more negative for elementary-level teachers than for secondary-level teachers. For example, one student who said she will likely teach at the secondary level reported that although she does not agree with the stereotype, her community portrays elementary school teachers as "little rude, ditzy, sorority girls who didn't want to major in anything else."

In addition to hearing negative messages about careers in teaching, focus group participants also recounted hearing dissuading comments about pursuing an undergraduate major in education. Some messages were subtle. For example, one participant noted that when students say they are majoring in engineering, they often hear a message of admiration, while those majoring in education typically receive a lukewarm response. Several other participants, two of whom had been recently accepted to Teach for America, discussed the need to have an "explanation ready" when they tell people their plans to teach after graduation in order to reinforce their high-achieving image. Another student, who plans to pursue a master's-level teacher preparation degree after graduation, said when she tells others she is seriously considering teaching, she finds herself having to "list her resume" to "build up that prestige a little." The fact that several focus group participants had crafted prepared responses to others' comments about teaching being below their potential demonstrates that these types of negative messages affected participants, even if they did not fully dissuade them from teaching.

Low salary. Participants reported frequently hearing negative messages about teachers' salaries, which in some ways aligned with and in others deviated from students' own salary perceptions, as reported later in the *Task Perception* portion of this section. Messages focus group participants heard about salary were often coupled with mentions of career prestige, but many also reported receiving direct messages about the insufficiency of teachers' salaries. Most participants were familiar with the general salary range for teachers, and these messages did not seem to have as much of a negative effect on their decisions as other messages related to prestige and respect for the profession. Regardless, they reported a relatively high volume of negative comments about teachers' wages from several sources.

Some of these "you will not make enough money" messages came from parents. One student recounted how a friend of hers, to whom she is "very comparable" academically, will be making $80,000 out of college, whereas she expects to make "half that" as a teacher. "She's set for life," the participant said, "and my parents are kind of like 'you could've done more and you chose [teaching]. Don't complain when you don't make as much, because you could've done another route.'"

Many focus group participants recalled hearing messages about low teaching salaries from current teachers, former teachers, or instructors in college-level education courses. One student said that in each of the three education courses he has taken at the university so far, the instructor has said some version of "if you pursue teaching, it's not for the money." Other students who attended public K-12 schools described how their teachers would insinuate, if not directly state, comments such as "I'm a teacher, I don't make much money." Several participants spoke more generally about others' negative

opinions, saying when they mention their interest in teaching, they commonly hear messages such as "how are you going to make money doing that? You're going to be poor."

Although most participants reported hearing some version of "you're not going to make a lot of money, so why are you going into it?," two students' experiences were exceptions. These participants said that while their parents acknowledged that teachers receive comparatively low wages, they also reinforced the importance of the profession. One participant, who plans to attend dental school, said her father often argues that teachers' low salaries fail to attract talented teachers and are to blame for "the problem with the intelligence level of our country." A second student, whose mother is a teacher and who had recently decided not to teach at the time of the focus group, noted that although her parents know she would not "get paid well" as a teacher, they want her to "make a difference" and have encouraged her to teach.

Demanding profession with little respect. Many of the participants reported hearing direct or indirect messages from family members who are teachers or from the media that parents, administrators, politicians and policymakers have placed increasing pressures on teachers to be accountable for student performance and to abide by new and frequently changing educational policies. This prominent theme emerged among at least half of the students who were seriously considering or had seriously considered a teaching career. One such participant, who is likely to teach after graduation, recounted reading an article written by a former teacher in a popular national newsmagazine saying she was leaving the profession because of "non-stop abuse from parents and the principal and the administration about why aren't these kids succeeding." This student said the "big

cultural message" she hears about teaching is "how much it has changed from a respected position to a position of abuse from the community practically where everything's put on [teachers'] shoulders."

Though the student above was not deterred entirely from teaching by the negative messages she hears about pressure on teachers, two students who have parents and/or other family members who teach said they decided not to teach in large part because of the stress, pressure and disrespect their family members experience. One student described her evolving interest in teaching in the following comment:

> My mom is a teacher and several of my aunts and uncles and other family members are teachers. I grew up wanting to be a teacher … and as I grew up, I started seeing more of the politics behind teaching. I love working with kids … But when it's actually in a school setting, I see all the stuff the teachers have to deal with, all the different curriculums that they're getting thrown at them every other year and how stressed my mom is when she comes home. And just more and more stuff that's thrown at teachers cancels out the benefit of being able to work with kids all day for me.

The other focus group participant, whose mother and father are both teachers, said he has received a clear message through his parents' experiences that teachers garner little respect from the community due to political decisions regarding teacher compensation and expectations. He said:

> … [our political leaders] don't understand that you can't just blame everything on the teacher because there's home life stuff, and it's just not the teacher's job to fix that … [Our leaders send the message] that teachers are not valuable; they can be easily replaced and that they don't actually need to know that much … they get angry at teachers, they're like "we've given you money, why haven't you succeeded?"

Tedious work with children. Focus group participants reported receiving polarized messages about whether teaching would be a demanding job. Although nearly all of the messages were negatively tainted, some conveyed that teaching was easy and

somewhat boring, while others portrayed the profession as tediously demanding with heavy-handed oversight and little respect. For example, whereas some students reported hearing teaching described as an "easy," "cop out" or "fallback" career, or that teachers are "glorified babysitters," others heard that the daily life of teachers makes many "bitter" or "jaded" and that teachers are often viewed as "poor saps" who "don't get paid that much" and "have to deal with the kids." One participant, who is not likely to teach, described hearing particularly negative messages about the child-centered aspect of teaching:

> For me it was always, if you want to be a teacher, you teach because you like kids. You don't teach because you enjoy sharing information. You don't teach because you want to be a forever student … if kids aren't your life … then don't even bother because the pay's not going to be worth it. The experience isn't going to be worth it.

Another participant, who expects to teach at the secondary level, recounted conversations with former teachers in which the teachers attempted to dissuade her not from teaching entirely, but from secondary-level teaching specifically, saying it was "the worst possible decision" she could make. Instead, they encouraged her to "go work with kindergarteners" because "high school kids are really awful."

A perfect career for a mother, but less so for a father. Several female focus group participants and one male reported receiving gender-based messages about teaching. The women described messages centered on the school-based schedule of teaching and how it offers parents, particularly mothers, more time with their children. Though two female students recognized that these messages were "sexist," they also said they valued teaching's family-friendly schedule. One student, who is weighing teaching against her other career options, expounded on this idea in the following comment:

I got a lot of things as like being a woman, "oh that'll be great because you'll be able to be at home with your kids." Which is true, I mean that would be nice, but I think if I was a guy it might've been different. "Oh that's such a great job for a mom," or "oh that'll be great because you can work and be with your kids and you won't get bored at home." And like, there's been some sexist messages that have gone along with it. But while I don't like the fact that they're sexist messages, I do agree ... I like the fact that I'll be able to work and be at home with my kids because that's important to me; family is really important to me.

Though messages about teaching's family-friendly schedule did not seem to greatly influence these women's teaching-related career decisions, they mentioned that this feature of teaching, as discussed later in this chapter, is an attractive aspect of the field.

Not surprisingly, the male student did not hear that teaching offers an attractive schedule for a parent. Instead, he said his parents initially discouraged him from teaching because they said the profession offered a low salary and low social status, neither of which they thought were appropriate for a man. Although this participant is planning to enter a master's-level teacher preparation program if he is accepted, he said his mother followed "the Asian tradition" of believing that "it's okay for the woman to be a teacher, but she didn't want the guys to be a teacher." In line with his family's expectations, this student plans to graduate with a bachelor's degree in economics although he has little interest in the field. "[My parents] know I applied to the master's [in Education]," he said, "I guess when I was in high school I listened to them more, and now it's just like I'm making my own choices." Although his parents' negative messages about teaching were influential in his earlier career decisions, as a senior in college, this student is more confident choosing to teach despite his parents' opinions.

Whereas messages about the teaching work day aimed at female students reflected positively on a teacher's schedule, the male student said he has been asked if he

would be comfortable assuming traditionally-female responsibilities such as after-school childcare. This student recounted hearing from others that childcare "is not supposed to be the guys' job," but he thinks "times are changing a little bit" and he's comfortable with the "swapped" roles.

A difficult, but noble job. Although nearly all the messages participants recounted were discouraging, two students reported hearing from the general media or from peers, classmates or others that teaching is a "worthwhile" career that serves an important societal function. One student said she often hears that teaching is a "hard job, but it's noble." Both of these focus group participants said that while they agree that teaching is a field to be respected, they plan to contribute to society through other occupations.

Perceived teaching ability. Nearly all of the focus group participants had some experience either (a) working with children in the classroom as a student teacher, substitute teacher, or intern; (b) working with children outside the classroom at a daycare center, after-school club, camp, or as a tutor or coach; (c) informally tutoring and mentoring younger siblings and family members; or (d) working as a teaching assistant or tutor at the postsecondary level. With two exceptions, all students enjoyed their experiences working with children and said that these experiences fueled their initial or ongoing interest in a teaching career. For the other two participants, serving in a teaching capacity helped them realize that their skillsets do not align with those required of a teacher.

Despite the fact that interest/ability/encouragement emerged as the most influential predictor of intent to teach in the quantitative analysis, only three focus group participants explicitly stated that they are considering teaching because they feel like

especially competent or skilled teachers. For these participants, a relationship appears to exist between perceived teaching ability and interest in teaching that sheds light on the multifaceted interest/ability/encouragement factor that emerged in the factor analysis. One student, who intends to pursue a career in higher education, described her evolution as a teaching assistant and how although she "was not very good at it" her first semester, because she was interested in the task, she continued training and gaining experience and has now helped with workshops at professional conferences. Another student described how being a successful coach has further fueled his interest in becoming a math teacher:

> Throughout my life I've tutored kids in math, and I've always liked tutoring children and it's such a rewarding feeling when you help a kid who starts out clueless and nervous and then by the end they're confident and they can do math that they couldn't do before. And currently, I'm coaching a 12 year old girls' club volleyball team. It was a completely new experience, but I still got that same feeling of accomplishment when I helped them get from point A to point B. And that's been my biggest motivator for convincing me to go into teaching just because I do like the feeling, and I'm pretty good at it.

A third student said that she was seriously considering teaching in part because the kids she interned with "responded really well to her," and the supervising teacher mentioned that she "seemed like a natural." For this student, interest in teaching, perceived ability in teaching, and encouragement to teach were closely related.

Although only a few focus group participants made direct comments about being skilled at teaching, most participants who discussed their teaching experiences said they found them "really rewarding" because they had the opportunity to see their students learn. These comments imply that the participants had some degree of success as teachers and that they enjoyed their teaching posts, at least in part, because of their success with the task.

Task perceptions. When asked what factors are most important in their career decisions regarding teaching, students most frequently mentioned how demanding teaching is in terms of its preparation requirements and workload, as well as the financial and non-financial rewards of the profession. As discussed below, participants expressed a range of positive and negative opinions, some of which were informed by personal experiences and others that were shaped by prevalent stereotypes about teaching.

Task demand. Although many focus group participants commented that their parents, peers, and the general public do not perceive teaching to be a demanding career that requires expert knowledge, they noted several challenging dimensions of the profession. They discussed the cognitive demand of educating children; the heavy teaching workload both within and outside the classroom; and increasing pressures on teachers to be accountable to administrators, policymakers, and parents. A small minority of participants who attended a less wealthy school district as K-12 students or who had friends who were teachers also noted that many teachers face these challenges with insufficient resources and often end up spending their own money on supplies. While the quantitative analysis did not identify a statistically significant relationship between task demand—which included items related to expert career and high demand (i.e., workload)—and intent to teach among high-achieving students, focus group findings reveal that a third dimension of task demand related to policy pressures and respect for teachers may have a more substantial impact on these students' teaching-related career decisions.

Expert career. Overall, most focus group participants were not enrolled in a teacher preparation curriculum and, therefore, did not have in-depth knowledge of its

requirements and academic rigor. These participants spoke in general terms about how "society" or "people" see teaching as easy. The minority of participants who had substantial experience with teacher preparation coursework or with classroom teaching argued quite strongly that teaching is a challenging, intellectually-engaging profession requiring specialized knowledge.

Though students were not explicitly asked whether they believed teaching to be an expert career, a prevalent line of discussion in each focus group related to the idea that teaching is not generally viewed as a career that requires high levels of technical knowledge, or lengthy, challenging training. In general, participants found this characteristic unappealing not so much because they wanted to engage in lengthy or rigorous preparation, but because of the respect that accompanies professions that require extensive training, such as medicine.

Although no students openly stated that they think of teaching as an easy career, several who are considering teaching noted that many of their peers see teaching as a career that requires basic knowledge and minimal academic preparation, and that either they or their peers perceive education to be "one of the easier majors, GPA-wise" at the university. Multiple participants said their perceptions were shaped by what they believed to be a low level of rigor in their education courses in which several noted earning exceptionally high grades. One participant, who is deciding whether or not to teach after graduation, made the following, related comment:

> As someone who's taken education classes … I didn't have to put in any effort so I wasn't raising my hand as much. I wasn't doing all the readings because I didn't have to do all the readings. I can sit back and get an A by not doing anything and I don't like that. I like when I'm pushed more and I feel like in some of my high school classes, in some of my AP classes, I was pushed more than some of my college [education] classes.

A small minority of students described noticing that some of their own high school teachers either put little effort into their jobs or were unable to answer their students' challenging questions or teach advanced-level curricula. One such participant described being disappointed that she had to enroll in an online community college class because none of her teachers could teach advanced calculus.

Another major, related line of discussion in nearly every focus group centered on the popular adage: "Those who can, do, and those who can't, teach." Again, while no participants openly admitted that they agree with the phrase, when describing general perceptions, they said others think of teachers as "average people" and of teaching as an "average job" which can be "tedious," but doesn't require "a lot of brain work" or "critical thinking." They mentioned that many people still view teaching as a "cop out" career for less intellectually capable or hard-working individuals. One participant mentioned that people think teachers "don't have to be as competent as people in other fields." Another said they believe that even though some teachers enter the field because they love teaching, others choose to teach because it is "the easiest thing they could think of to do."

Although they stopped short of saying they believe teaching is "easy," several participants called teaching a popular "fallback" career and noted that it would also be their backup if their other options did not work out. One student noted that the general perception is that teaching is for "the sorority girls who get psychology degrees. It's something easy; it's something everybody could do if they put their mind to it." Another said that although "people just think that you go in and teach and you get your summers off and it's just great … it's not that easy and it shouldn't be a fallback career." Both of

these women, however, admitted that they were "perpetuating" the fallback trend by making it their own second-choice occupation as they were primarily interested in other fields.

While most students described how society, in general, does not view teaching as a cognitively-demanding career, a minority of participants across focus groups who had experience with the teacher preparation curriculum or teacher licensure exams argued that while the content knowledge in some teacher preparation courses may be at an elementary or secondary level, the additional challenge of the classes is learning how to convey that information to children. Others who were seriously considering teaching noted that the task requires the cognitive skillset to master a content area, as well as the patience, enthusiasm and empathy to impart that knowledge. As one student who is preparing to teach put it:

> Education majors just have this stereotype that you're stupid, because it's all easy classes. I'm still taking math classes. I have to know how to do elementary school math and learn how to explain it so I take Fundamentals of Numbers and Counting and learn how to multiply … Yes, I understand, I got 100 in the class and it was super easy, but it is difficult. You don't really think about the concepts behind math.

One of the students considering Teach for America described having a similar realization when preparing for the elementary-level Praxis examination, a common test required of prospective teachers.

> I was thinking, "I don't need to study much for this, this is going to be easy." The problem is, all the stuff I had to study when we learned as kids, it was taught to us. So think about it: You use past participles, but can you explain to someone what it is? No! So I was screwed studying for it because I didn't realize that elementary school teachers have to explain it to kids using concepts that [are intuitive]. So it seems easy to us because we've been doing it for 15 years and using these skills, but the people that actually have to teach them to the little kids, it is so hard.

Interestingly, one student, who was completing a teacher preparation curriculum for her bachelor's degree but had recently decided to pursue a career as a physician's assistant, said she was dissuaded from teaching by the high level of curricular rigor required to earn a secondary teaching certificate in mathematics. This student was frustrated by having to take challenging math courses she did not see as necessary for teaching, especially when the financial return to a teaching career was so much lower than that of a physician's assistant. Another student in the group, who is planning to teach, openly supported requiring the math degree, noting that she and her high school classmates had more respect for, and better learning experiences with, teachers whose academic preparation went beyond the typical high school curriculum.

High demand workload. Many participants, including those who were more and those who were less committed to teaching, perceived that even though teaching may not require extensive years of graduate school and training, most teachers have a heavy workload both within and beyond the classroom. Several students noted the perceived difficulty of classroom management and said it was a deterrent from the profession. One participant, who is no longer planning to teach, described one of the high school classrooms she observed as "insane" and a "mad house." "Trying to keep the class just under control just to breathe for a second," she said, "looked exhausting." Another student, who had experience teaching religious classes but intends to pursue a career in psychology, described kids as "difficult," "badly behaved" and "hard to control." A third participant, who is not planning to teach, said that compared to other respected professions, teachers' workloads seem "very grueling." She noted that whereas preparing to be an accountant, for example, might be challenging in college, the actual job becomes

increasingly routine. Teaching, she perceived, is consistently difficult because "you're dealing with different individuals and just so many factors."

Not only did focus group participants perceive teachers' work to be challenging within the classroom, many also believed teachers often have additional responsibilities that extend beyond the school day. Several students recounted hearing their former teachers or teacher friends/family complain about the amount of time they spend preparing lessons and grading papers late in the evenings and over weekends. "It's not like you go at 9 and you come home at 4 and your day is over," said one participant. This student noted that currently, she has college-related responsibilities "every minute of every day," and she likes "the idea of a job where [she] can get home and not have to work until the next morning."

For some, teachers' heavy in- and out-of-class workload was especially unappealing because the profession is known for having a desirable work schedule with substantial holidays and vacation time. In the following comment, one participant, who is not planning to teach, noted that even though the general perception is that teaching is an "easy job," the amount of work associated with the career is daunting to her and probably many others, even if it were accompanied by a higher starting salary:

> … if I were to tell one of my friends "hey, if I gave you $60,000 to be a teacher,"— like let's say it was even that much—the amount of stuff that they would have to do, I think that they wouldn't admit to knowing it maybe, but it would be easier to just do a data entry job. Like to just sit at a computer and punch numbers in all day requires less, and I feel like our society's kind of lazy in that way. … The amount of prep to even just teach a class is pretty high … So there's a lot of prep work and then the actual conversations that are occurring in your classroom. There's a lot of time management. You have to know how to do conflict resolution. There's just so much pressure in different aspects …

Despite the fact that many focus group participants said others think of teaching as an "easy" career, only one participant suggested that teachers carry a light workload. This student, who is planning to prepare to teach after graduation, said he views teaching as more "relaxing" or "laid back" than other fields because "you get winter, summer break and the hours are a little easier … if you teach high school, you teach five periods." Several others commented that the amount of work teachers put into their jobs varies. One noted that although managing elementary-level children in the classroom may be particularly challenging, elementary teachers likely have fewer assessment responsibilities outside the classroom than secondary-level teachers who spend substantial time tutoring and grading. A third student said that she understands the need for standardized student assessments as a check to make sure teachers "don't get away with putting a TV show on every single day of class and passing everyone."

External pressure. Though this dimension of task demand was not in the theoretical framework and was not assessed on the survey, pressures to improve student performance from parents, policymakers, and administrators emerged as one of the most influential aspects of teaching dissuading focus group participants who had spent time in schools from the profession. They described how increasing global competitiveness, college attendance, and recognition of performance gaps among demographic groups have translated into policies heavy on standardized testing and teacher accountability. Several focus group participants noted that teachers are now expected to compensate for students' home lives "when all they're responsible for is teaching the material, not following the student home and making sure they do their homework." One participant, who is planning to teach at the elementary level after graduation, noted that schools have

become increasingly responsible for ameliorating larger social and economic problems such as "violence, the achievement gaps, different languages in the classroom, all different learning styles," as well as incorporating children with special needs into mainstream classrooms. "It's just a lot to think about," she said, "It's really overwhelming and thinking about it right now just makes me scared." For this student, the perception that society has mounting expectations for teachers was somewhat daunting, but not reason to rule out teaching.

The opposite was true for another participant who said that through her teacher preparation coursework, she realized how "broken the system is." After completing her student teaching experience, this student decided that although she loves working with the children, she is unwilling to "sign herself up" for "all the politics" and "disrespect" that go with the profession. Despite the fact that this student will have completed a teacher certification curriculum when she graduates, she is now looking for non-classroom occupations that will allow her to contribute to teaching and learning.

With regard to accountability policies, in particular, many focus group participants were familiar with the term "teaching to the test," and some worried that this practice results in a "rigid" curriculum that compromises teachers' professional autonomy in the classroom and turns them into "robots" who act like "megaphones" for administrators and education experts. These policies, they feared, lead to teachers becoming increasingly dissatisfied with their jobs and less "fulfilled" as professionals. One student's comment captures the thoughts of several who were seriously considering teaching:

> I think it used to be a job that you could kind of like work with your kids' individual needs and you could teach them the curriculum and what they needed to know, but

you could also teach them more than that … that's really hard to do in the sense that like when your budget, when your salary, when your job is tied to how well they do on this test, it's going to be more difficult to have a discussion with them about how they feel about this political issue or how they feel about, you know, whatever when they have to memorize the year of this war. In the end, what does that year matter? ... I have big issues with testing. I think there was a lot of autonomy, not anymore.

One of the two students who was recently accepted to Teach for America said she had hoped the program would place her in a charter school where she perceives decreased testing and accountability pressures would afford her more freedom and autonomy in the classroom.

Though the majority of participants who contributed to the discussions on teacher accountability voiced concern over the perverse effects of related policies on teacher autonomy and curriculum narrowing, two participants, neither of whom intend to teach after graduation, noted that standardized tests in and of themselves are not the major problem as long as they are not designed by "one group that has an agenda, but a wide variety of people who are contributing." Another noted the tests are not to blame, but "the way that schools completely have turned themselves upside down to be centered around [them]." In contrast, a minority of several students who are likely to teach argued that even with standardization trends including the Common Core, teachers have sufficient flexibility to meet their students' needs and "a lot of room for creativity" in how they choose to present required material.

Altogether, most focus group participants who were seriously considering teaching voiced opinions about teacher accountability, teacher autonomy, and student achievement pressures. For the majority of these students, the external pressures on teachers were intimidating, and for one, they were justification for choosing another

occupation. Some prospective teachers, however, had more positive views on teacher accountability and perceived that standardization policies allow sufficient room for flexibility and professional autonomy.

Insufficient resources. While some participants described having access to Smartboards, iPads and other resources throughout their K-12 education, others perceived that teachers do not have the basic supplies or funds to teach the way they would like. This minor theme surfaced in two focus groups among four participants. Three students reported hearing current or former teachers talk about spending up to $1,000 of personal funds a year on supplies as basic as paper and copying for their classes. Teachers having to spend their own money on equipment, especially when they make what many perceive to be a low salary, was particularly unattractive to some focus group participants. One participant noted that throughout her K-12 career, she used tattered textbooks and teachers presented lectures on unreliable overhead projectors. This lack of resources, she said, contributed to some teachers becoming "dejected," "tired," and "worn out."

Task return. When asked about their perceptions of teaching, focus group participants talked extensively about the returns to a teaching career, with specific regard for the profession's salary, opportunities for professional growth, and social status. Participants described these factors as among the most influential in their decisions about teaching careers. For many of these students, salary, growth and social status were entwined concepts: financial reward and movement up a career ladder connoted higher social status and increased professional prestige. The close relationship between social status and salary emerging from the focus group findings was curiously not reflected in

the quantitative analysis, however, which identified salary perceptions but not social status as a statistically significant predictor of intent to teach.

Salary. In general, nearly all focus group participants who had seriously considered teaching during their undergraduate career were aware of teachers' approximate salary range and many knew that public school teachers' salary scales are typically available on the internet. Some had researched their former teachers' salaries and/or the average salaries for the districts in which they were interested in teaching. Participants understood that salaries vary by geographic area and school district. Several were confident that more wealthy areas paid higher rates than urban or rural areas. Some students who were considering teaching were knowledgeable about how average teacher salaries in their desired location compared with their other career options. Others, including one student who will likely teach, had not sought out specific salary information, but perceived that teachers make a middle class income with limited opportunity for salary growth. One student summed up a sentiment heard in many focus groups in saying: "I think everyone sort of knows, teachers are at the bottom. Teachers make a lot less than engineers and doctors and lawyers and accountants." "The bottom" for this particular student, and many in the focus groups, represented the bottom of the middle, professional class.

Whereas two participants noted that they were raised in middle class families and were subsequently satisfied with the prospect of a teacher's salary, many others said that teachers' salaries were not sufficient for their planned lifestyles, especially given the high cost of living in their desired locales. Several participants who were in the process of deciding whether or not to teach discussed how if they decided to teach, their salary

would dictate what area of the country they could live comfortably in, and they might not be able to afford to live in the same school district in which they teach. For these students, cost of living was an important factor in whether they choose to teach at all. One student, who is considering teaching, discussed this aspect of her decision, saying:

> … I analyzed cost of living per state versus teacher salary. Because that obviously influences a lot. I mean there's certain areas of the country where you can get a house for $100,000 and other areas where that doesn't exist … that's been a big thing for me with teaching is like, I think for the school districts that pay a lot, it's going to cost a lot to live there as well. And they're kind of the neighborhoods I'd want to live in as an adult with kids when I'm paying those higher property taxes … So it's just kind of like been a thing for me that I've been deciding, whether I want to wait a few years to use my [teaching] degree or not.

For another student, who is considering both medicine and teaching, the combination of teaching's heavy workload and low salary was doubly unattractive, as she described in the following remark:

> I know so many of the teachers, they always gave after-school tutoring hours or study sessions which none of them were required to do that … All the grading and stuff that goes into it and the amount of work they take home. It's just, I don't know, it's kind of disproportionate—the amount of work they do and the amount of money they get paid.

A second salary-related theme that emerged in most focus group discussions, but was not assessed on the survey, was the perception that teachers' wages are largely "stagnant." Multiple students commented that though the starting salary for teaching may be comparable to their other occupational options, salary growth for teachers is minimal in most cases and non-existent in some where pay is frozen for years at a time. One student described how she believed that a teacher who had been in the field for 25 or 30 years might start at $40,000 and end at $60,000, whereas an engineer might start at $40,000 and end at $90,000. Another participant recounted how a former teacher had told

her class that they could research their teachers' salaries online. When they did, they discovered that this teacher made $48,000, an amount she and her peers perceived to be especially low. "And he was there since 1993," the student said, "since we were born." Another participant commented on the same issue, saying:

> While I can acknowledge that the job I'm getting is—I want to go into publishing—editorial assistants starting off get $35,000 a year. That's their start, and yes it's going to be less than a first-year teacher, but I'm only going to be an editorial assistant for two years, and then I get promoted … Where do you get promoted from 11th grade English teacher? 11th grade English teacher. And it's stagnant.

Though many students understood that teachers can supplement their incomes by earning higher degrees, teaching hard-to-staff subjects, leading extracurricular activities, and taking on summer or part-time jobs, these opportunities for minor salary increases appeared to have little impact on their decisions about teaching careers.

A minor theme regarding financial independence surfaced among several female participants in two focus groups. These women emphasized that being financially independent was very important to them, and they expressed concern that a teaching salary would leave them economically dependent on a partner or other family members. One participant, who had volunteered at a domestic abuse shelter, commented that "women have to be economically independent … because if there ever is a problem or anything, you have to be able to support yourself and any kids." Outside the conversations about financial independence, several female students across focus groups said they believe a teacher's salary would be sufficient to support themselves but would probably not be enough to support a family on their own.

Professional growth. Although the survey did not assess students' perceptions of professional growth opportunities in teaching, most focus group conversations touched

upon this aspect of the field. Several participants who were not planning to teach said they were dissuaded from the profession by the prospect of teaching the same subjects "over and over" and not being able to move into new positions through which they could "learn and grow and have opportunities to advance." This perceived dearth of opportunities for professional growth was a contributing factor in the decision not to teach for four students who had considered teaching in the past but were planning alternative careers. One participant described how this aspect of teaching was particularly unattractive to her in saying:

> I'm a very progressive person. I like achieving things and I like moving up and just the idea of like okay, I become a teacher at 22 and I don't retire until I'm 55. For all of those years, I will be doing the exact same thing. Year by year, I will more or less be doing the same curriculum, more or less using the same round of students … and I'm not going to achieve anything more …

The perception that teaching lacks growth opportunities was mostly limited to participants who had considered teaching in the past, but were not seriously weighing the profession at the time of the focus groups. Many participants who were considering teaching or were likely to teach described pathways for advancement in the field through teaching advanced courses, assuming department head or administrative roles, or moving into education policy. One of these students said she is interested in contributing to policy to "change systematic issues" that are hard to address as a classroom teacher. Two focus group participants, both of whom said they will likely teach after graduation, argued that there are opportunities to grow professionally even as a classroom teacher, through having a new class with new dynamics and challenges every year and through seeking out professional development. "While there may not be growth, like moving up the

ladder," one student said, "It's definitely personal growth and that's something I really value."

Social status. Though the quantitative analysis did not reveal a statistically significant relationship between social status and intent to teach, the lack of social prestige surrounding teaching emerged as a frequent and important topic during focus group conversations. Students attributed teaching's low status to multiple factors including low salary, little public respect for teachers, the perception that teaching is an easy career requiring low cognitive demand, and that it requires little preparation, which makes it a perfect "fallback" career. As previously mentioned, several participants described how the low social status of teaching is also evidenced within the hierarchy of prestige among college majors, wherein they said education is perceived as an "easier degree" or "a little bit lesser" than other degrees. When asked whether the social status or prestige associated with teaching mattered to them, several focus group participants who are seriously considering teaching admitted that the general lack of prestige surrounding teaching has been a factor dissuading them from the occupation and that, for some, it is difficult to pursue a profession they know will garner less respect than their other occupational options.

One student captured a topic that emerged frequently among discussions in saying she often hears the message: "Teaching is so important, but important people don't teach." Though this student had been interested in teaching from a young age, in college she decided to pursue other majors that were more in line with her perception of professions that befit a high-achieving student. After feeling dissatisfied with these fields of study, she committed to teaching just before our focus group conversation. She

explained "I just kind of had to get over the fact that people look down at teaching, and it's like a woman's career." Similarly, another student who plans to teach after graduation said that "people respect teachers, but they respect them in a different way than they respect an engineer." She went on to comment:

> They kind of see teaching as a job that someone has to do … and you respect these people for taking it off everyone else's hands and it's necessary for society, but that's like garbage men. People are just happy someone's doing it.

For multiple students, teaching salaries were unattractive not only because they would afford a lower standard of living than some of their other career options, but also because the salary conveys to others and to themselves that they are less "smart" and less "successful" than other professionals. One student commented that "the smartest students don't become teachers, because our society measures success by your salary." The smartest students, she said, want success, and "making $40,000 if you're a genius just doesn't add up, or we're told that it doesn't add up." Another participant described how those who choose to teach pay not only a financial opportunity cost but also a related opportunity cost with regard to respect, due in part to teaching's lower salary:

> My sister is graduating this semester and she has a job lined up, an engineering job, and her starting salary's going to be $73,000. So for me, it's just not necessarily about the money but more about comparing myself to my sister, you know? I'd be like "oh I want to be able to do as well as her." Just to be able to say I'm as smart as her. I'm as successful as her. But honestly, that's not going to happen … That's just not feasible with a teaching job, so. … I feel like society makes it seem that way. People who are more successful, who have done better for themselves, are the ones that are richer.

This intersection of salary and social status created a powerful decision factor for many focus group participants who had or were seriously considering teaching. For these students, the profession not only afforded less financial comfort and social respect, but also failed to conform to the high-achieving aspect of their identities.

A small contingent of three students who are planning to teach said that they and/or their parents see earning a master's degree in education as one way of garnering additional prestige as a teacher. One made the following comment:

> [Prestige] is a little important. Just in the sense that I've always been in the AP classes. It's always been a thing that you're a little bit above. So I guess that's one of the main reasons I decided to get my master's because I can still be like "well I have my master's by age 23." And that's why I've considered going into administration just later on down the road.

Another participant noted that her parents agreed to continue supporting her education if she decided to be a teacher rather than a lawyer, but only if she earned a master's degree.

Subjective task values. Focus group conversations touched on each of the subjective task values assessed in the survey: interest value, personal utility value, social utility value, and perceived cost. Of these four values, the sub-dimensions of personal utility (especially job security and non-pecuniary benefits) and perceived cost (particularly financial and social status opportunity costs) were the most frequent topics of conversation, yet none of these variables yielded a significant relationship with intent to teach in the quantitative analyses. The quantitative analysis did identify social utility value as a statistically significant predictor of intent to teach for all three examined samples (uncommitted prospective teachers overall, higher-achieving students, and lower-achieving students), but discussion of the profession's social utility was notably meager throughout the focus groups.

Interest value. The combined interest/ability/encouragement factor emerged as the strongest predictor of intent to teach in the quantitative analyses for all three groups. As might be expected, focus group participants who reported enjoying the task of teaching children and who were interested in K-12 teaching at the time of the focus

groups were the most likely to say they were considering a teaching career after graduation. Although nearly all participants said they enjoyed, to some degree, the task of teaching K-12-level children, aspects of the profession such as classroom management, curricular policies, salary, and social status seemed to have more impact on whether they decided to teach than their inherent interest in the task of instruction. In this way, interest value appeared to have less impact on intent to teach in the focus groups than in the survey data. As three students put it:

> I've worked with high school students in tutoring sessions and those have been great. It's really just, a whole classroom … I'd rip my hair out. I would be able to do it and I would probably be able to do it well, but I would hate it.

> I love working with kids, I love working at camps … But when it's actually in a school setting, I see all the stuff the teachers have to deal with … And just more and more stuff that's thrown at teachers cancels out the benefit of being able to work with kids all day for me.

> I did my student teaching and I really loved working with the students and everything, but all the politics and all that kind of stuff that goes with it … I feel like teachers get disrespected a lot and I just didn't really want to sign myself up for that.

Personal utility value. The three sub-dimensions of personal utility value outlined in Watt and colleagues' work (2007)— non-pecuniary benefits (e.g., holidays, family-friendly work schedule), job security, and job transferability—emerged consistently in the focus group conversations. Though the quantitative analyses identified none of these three factors as statistically significant predictors of intent to teach, several participants in nearly every focus group discussed teaching's holidays and family-friendly schedule, as well as the availability and security of teaching jobs. Only two students, however, mentioned job transferability as an important aspect of teaching.

Non-pecuniary benefits. When asked how a teaching career aligns with the features of their ideal career, many focus group participants highlighted public school teaching benefits such as the vacation, holiday, and school-day schedule, and what many perceived to be valuable health insurance and pension plans. For students who were already seriously considering a teaching career, the profession's non-pecuniary benefits seemed to serve more as secondary decision factors—or attractive perks—than primary influences. Two such participants mentioned that the benefits associated with teaching help to counterbalance the pay. For example, one student, who plans to teach after graduation, said teaching appeals to her because "the hours and the time off that you get and the benefits that you get kind of equate to the pay." Another participant, who is considering teaching, noted that even though the pay is relatively stagnant, he often hears people say "if you become a teacher, then you're usually set to go because then you get pensions and then the school will take care of you even after you finish."

Although the majority of students agreed that teachers in public schools receive competitive health insurance and retirement benefits, one participant remembered a strike over changes to teachers' benefits during her high school years that left her with a negative impression of the profession's benefits. This student made the following remark:

> … I was in 10th grade when the economy [crashed] … and a lot of teachers quit because they took away parts of the pension plan and they changed their healthcare to a much worse provider and … the perception I was having was, they keep changing things and giving us worse things and now with the crash, we really don't have anything, so what's the point of being a teacher here anymore?

While several participants found the school day schedule of a teacher to be attractive because it likely coincides with their future children's schedules, as previously discussed, they also acknowledged that many teachers need to complete work at home in

the evenings. One student said that even though as a teacher she might still be working from 7 to 11 pm, she would "technically" get out of the classroom at a certain time and could be home with her children. Despite the perceived evening and weekend hours, participants appreciated that teachers are rarely, if ever, required to be available during non-school hours. Several recounted having one or both of their parents away from home during inopportune times throughout their childhoods. Consequently, these students found teaching's predictable hours to be attractive. The following student's story captures the experiences of several such focus group participants:

> My mom worked for a hospital, so we could get phone calls in the middle of the night being like "hey, you need to come in now." And that's why we had a live-in nanny because if my dad was out of town … and my mom got called in, you know, you can't leave a seven year old and a two year old by yourself. You just can't do that. So … one of the things that I really like about teaching is I know exactly how many hours I am going to be there.

Many focus group participants who were seriously considering teaching said school holidays and vacations, including summer break, were appealing benefits of the profession. Students mentioned that these breaks would allow them time to spend with their families, to pursue other part-time jobs or "side hobbies" of interest, and/or to travel or volunteer. One student, who is planning to teach after graduation, noted that she finds the traditional summer break to be "really appealing" because it would help "break the monotony" of "just years and years of the same thing." Similar to some students' views on teachers' healthcare and retirement benefits, one participant made a remark about vacation time helping to offset low pay, saying:

> I think depending on a teacher's salary as your only source of salary, it might seem low, but if you think about the free time that comes with it, if you have a business idea or something you want to try, I think you'll have enough time to be able to try it out.

Whereas the majority of participants described the summer break most teachers receive as attractive, a few noticed that some of their former teachers had part-time jobs during the summer to make ends meet, and two students said they would rather have more vacation flexibility throughout the year than one long summer vacation. One such student explained:

As long as I have an amount of vacation time, I'm not required to work for an eternity and a day, I'll figure out when I want to take my vacation … I like that choice rather than that sort of distinction of 'okay well you get summer, you get winter, but fall and spring we own you.'

Job security. Though several focus group participants perceived that it is difficult to break into the teaching field, they held varying views on whether or not teachers' jobs are secure. The majority of participants were in high school when The Great Recession began, and several who attended public schools noticed that core teachers, specialty teachers, and/or other staff such as counselors were relocated, laid off, or lost their jobs. "We had a bunch of teachers all cut at the same time," recalled one participant, "and then the other teachers had a lot bigger classes the next year and they said that was really stressful too." Another student remembered dozens of teachers, some of whom were "established," being fired from her district. These experiences negatively affected many focus group participants' perceptions of one of the most traditionally-valued aspects of a teaching career: its security.

Unfavorable perceptions of job security in teaching were not strictly limited to participants with public school backgrounds. One student who attended private K-12 schools also noticed teachers being laid off or relieved of their positions:

All through middle and elementary school … they had teachers who came and went. They had a school counselor, and she was laid off because they didn't have enough

money. They cut our arts program and basically our gym teacher had to also do arts and then also teach 6th grade English and then also teach one thing, another thing on top of that.

In contrast, several other participants who attended a public school district known for its wealth and academic quality said they did not notice any reductions in the teaching force in their schools. These students perceived teaching as a secure, "stable" job, especially when compared to some other professions. One such student, who is considering teaching, made the following comment:

Stability is one that teaching offers a lot of. I don't think people take into account all the time how easy it is to get laid off. I have a lot older friends and a lot of them have been laid off, sometimes for a couple months and then sometimes for a year or two. And these are people that have their master's even and you'd be like "oh wait, but I thought if we have a college degree we're set for life. We'll always have a job." It's not always the case, but in teaching, at least I know when I was doing research, unless you're doing something ridiculously against policy, it's very difficult to get kicked out of the teaching system.

In their discussion of teacher job security, a few participants mentioned that they were aware K-12 teachers could earn tenure, thereby greatly increasing their job security. Tenure was not a prevalent topic of discussion, however, and students' knowledge of the policies seemed relatively minimal. One student, who is considering teaching, said his understanding was that even though school districts could "move tenured teachers around," they could not fire them. Another participant, who intends to teach, said that the possibility of earning tenure was more a deterrent than an incentive. She recalled an incident in high school where a seemingly incompetent teacher was not fired, possibly due to tenure. "If you're a bad teacher, you're a bad teacher," she said, "You shouldn't be there."

Job availability. Although job availability was not a factor assessed on the survey, it surfaced as a minor theme among several participants in half of the focus groups. While participants mentioned job availability more often than job transferability, it did not emerge as an especially important factor in their teaching-related career decisions. Students acknowledged that teaching would "always be an option" because "there's always going to be education," but their perceptions of the relative abundance of teaching jobs varied by grade level, subject and geographic area. Those who discussed job availability generally believed it was easier to find a secondary-level teaching job than an elementary-level job. Within secondary education, they perceived that mathematics and science jobs were the easiest to come by, and jobs in non-core fields such as health and art were the least plentiful.

Several students had family members or friends who were interested in teaching and were expecting to either serve as long-term substitutes or work at private schools for several years before securing a public school position in their desired location. In particular, these students believed that it was "very hard" to find a teaching job after earning a master's degree with no prior teaching experience because a master's degree typically commands a higher salary. One participant, who is not planning to teach, described how her sister is trying to transition from a career in business to teaching. This student viewed her sister's planned path to a teaching career—earning her master's degree and working in a private school before acquiring her desired public school job— as "a very difficult route after she is already graduated" in that it required a substantial time commitment and did not guarantee the type of job her sister was seeking.

Job transferability. The ability to transfer teaching jobs to different areas did not surface as an influential decision factor. Two students, both of whom said they will likely teach, mentioned an interest in living in different cities or countries and noted that teaching is appealing because jobs are available nationally and/or globally. One participant said she was attracted to the fact that teaching is a career "that translated well to different [geographic] areas" and that as a teacher, she would have the flexibility to "get up and move." Though these two students found job transferability in teaching attractive, other factors seemed to weigh more heavily in their decisions.

Social utility. While social utility was one of only two expectancy-value factors that significantly predicted intent to teach in the quantitative analyses for all three examined samples, teachers' ability to contribute to society's well-being was not a topic that emerged frequently or at length during the focus groups for this study. When asked about the features of their ideal career, however, several students described wanting a job through which they could "help people," "make [others'] lives better in some way," and feel like they "made a difference." One student, who is deciding between a career in school counseling or teaching, said she is attracted to both fields for similar reasons, primarily because she's interested in "helping children achieve" and "have more opportunities in their life."

In general, students who spoke about a teacher's ability to make a social contribution acknowledged that teachers are rarely "saints." Two students commented that while teachers can positively influence children's lives, their ability to "save the world" is sometimes exaggerated by would-be teachers themselves or the media. "… the reality is most teachers are in the classroom," said one participant who intends to teach.

"You're making a difference, but it's probably not all that significant." Another student, who is considering teaching at some point in the future, captured the conversation in saying:

> Maybe you can make a difference, but you're just one person. Just last week someone was telling me that all college graduates who do try to become teachers, they think they can save the world. That's really what it is. But then maybe it dies down and you realize that you have to be a bit more realistic about it.

One focus group participant, who is unlikely to teach, noted that the children in most need of quality teachers often live in areas where prospective teachers are "scared" to teach. "You want to make a difference," she said, "but why not make a differences there instead of here?" Several participants who were considering teaching spoke to this issue, all of whom said they would feel more comfortable in a "nicer area" or "upscale environment" that was not in an "inner city." One student noted that she went to a "poor high school" with "police officers" and "gang fights," and she could see herself becoming "really hopeless in that type of environment." Another made the following comment about not being up for the task of teaching in a high-needs school:

> We work in DC with our [teaching] internship and I love it. But it seems like, I mean as much as I want to make a difference, sometimes I think that the people there get so stressed out over like, the many differences that the kids have and all the different like backgrounds that they're coming from that it distracts them, and I guess I wouldn't want that kind of distraction …

Among the students who were planning to teach or considering teaching, the profession's social utility appeared to be one of many factors contributing to their career choice; however, for those who were less interested in teaching, the ability to "make a difference" as a teacher did not seem to be sufficient reason for pursuing the career in the presence of other dissuading factors such as low task return and high task demand.

Perceived cost. Participants recounted several financial and non-financial opportunity costs associated with a teaching career that have dissuaded or might dissuade them from teaching. Though the quantitative analyses did not identify a statistically significant relationship between perceived cost and intent to teach, for several focus group participants, costs were a critical factor in their decisions regarding teacher preparation and a K-12 teaching career.

Not surprisingly, the most frequently discussed cost was the financial opportunity cost of a teaching career compared to other available career options. For several participants, particularly those with STEM majors, the opportunity cost of teaching in terms of lost wages in other fields was a major factor dissuading them from teaching. One participant, who is a mathematics major considering teaching middle school, was a candidate for a federal job at the time of the focus group. He said the position pays $15,000 more than a beginning teacher's salary and does not require a master's degree. "[Teachers' salaries] are definitely more competitive than I was expecting them to be," he said, "but it's still ridiculously not competitive to the private sector." He further commented about how salary factors into his occupational decision, saying:

> People will always tell me "why are you doing [teaching]? You can make so much more money." The other day, my […] coach, he was like "just go into biostatistics or something like that. You can be making 100k in a few years. If you're a teacher, you'll never see that kind of money, your entire career." And as much as you like to pretend "oh the money doesn't matter," I want to love my job. But at the same time you gotta definitely take into account the money.

Many participants were considering careers in the healthcare field (e.g., medicine, dentistry, physical therapy, physician's assistant, occupational therapy), all of which pay higher financial returns than teaching. Although in one focus group participants discussed

how many of these careers would require substantial student loans for graduate tuition, those considering these alternative options still perceived they would reap greater financial reward in healthcare than in teaching.

Interestingly, as previously mentioned, several participants who were considering teaching viewed earning a master's degree in education as a path to greater prestige rather than a cost deterrent to the profession. In addition, many described education as one of the "easier" disciplines at the university and none mentioned being dissuaded by having to complete graduate-level coursework in order to teach. Perhaps few saw the master's degree in education, which often takes just one calendar year to complete, as a discouraging factor because (a) many of their other career options, such as those in healthcare or social services, also require graduate school; (b) they expect the teacher preparation coursework to be fairly easy, given that many described their undergraduate-level education courses as easy; and/or (c) they would make more money as a master's-level teacher, which several students highlighted as a rationale for earning a graduate degree before teaching.

Beyond financial opportunity costs, two additional minor themes emerged regarding curricular opportunity costs associated with preparing to teach. As discussed under the *Expert Career* section of *Task Demand* above, at the time of the focus group, one participant had recently changed her career plans from preparing to be a secondary-level mathematics teacher to becoming a physician's assistant due in part to the fact that she was required to complete a rigorous mathematics degree to teach math in the state. This student struggled with some of her mathematics courses and ultimately decided that she was "not going to go through a miserable college being a math major to make

$50,000 at most a year." For this student, the opportunity costs of both a higher salary in another profession and a more manageable course load were too high a price to pay to teach.

In addition, three students, all of whom had undergraduate English majors and reported that they were unlikely to teach, said they preferred to concentrate on their English degrees than to split their time between English and education courses. "If you can go on and get your master's regardless of what your undergraduate degree is, well, I'm going to take English classes," said one student. Another student described her thought process in the following way:

> I am getting an enormous amount out of [my English major], and I feel like anything I could've wanted to teach, I could figure it out as I went along. What I couldn't figure out is all the skills I was getting from taking the English classes I wanted because I really, truly have changed the way I think because of the English major, and I looked at my friends' big boilerplates with the, 'you have to take all these [classes for education] …' and I was like "No." So I didn't.

Summary

Ordinal logistic regression results on the stratified samples of higher- and lower-achieving, uncommitted prospective teachers indicate that interest/ability/encouragement and social utility value are even more influential factors in higher-achieving students' career decisions than in the decisions of lower-achieving students or uncommitted prospective teachers overall. Despite these significant relationships identified in the quantitative analyses, focus group participants emphasized dimensions of interest/ability/encouragement and social utility value less frequently than they discussed the influence of other factors, such as salary perceptions, social status and dissuading messages about teaching. The few participants who did mention interest in teaching, their perceived teaching abilities, and encouraging messages about teaching

(interest/ability/encouragement) made connections among these theoretically-distinct concepts that shed light on why they may have loaded together on one multifaceted factor in the factor analysis. The focus group participants who mentioned teaching's social value said they were attracted to the profession, at least in part, because they would be able to make a social contribution as a teacher, even if only a minimal one.

The quantitative analysis also revealed a statistically significant relationship between higher-achieving students' positive perceptions of teachers' salaries and teaching intentions. Although salary perceptions were a somewhat weaker predictor of intent to teach than interest/ability/encouragement and social utility value, qualitative findings suggest that this dimension of task perception is an important factor in high-achieving students' decisions, especially as it relates to perceptions of the profession's social status. Focus group participants reported frequently hearing negative messages about teachers' salaries and social status. Many commented that in their view, teachers earn unimpressive wages, have little potential for financial or professional growth, and have an "average" social status. For the majority of participants, these aspects of teaching fail to align with the "achiever" aspect of their identity, which suggests that they are capable of pursuing a more socially and financially impressive career. The negative impact of salary and social status on teaching decisions appears to be further solidified by frequent "you can do better" messages these students receive from family and friends.

The regression analyses on the high-achieving student sample also identified a negative relationship between students' prior teaching and learning experiences and teaching intentions. Curiously, these results indicate that the higher respondents rated their past teachers and prior learning experiences, the less likely they were to report

intending to teach. As discussed in Chapter 5, this finding may reflect the fact that individuals with stronger educational backgrounds may: (a) receive encouragement from teachers to pursue occupations in the field in which they demonstrate talent rather than teaching itself; (b) have a wider range of occupational options and for this reason, are less likely to choose teaching; (c) have less motivation to improve the educational experiences of others by becoming teachers themselves; or (d) are simply more likely to report having had positive past teaching and learning experiences and are less likely to intend to teach. The qualitative data do not speak to these hypotheses, which warrant further empirical attention.

Although statistically significant relationships between the other expectancy-value predictors and intent to teach did not emerge in the quantitative analysis for high-achieving students, factors related to teaching's task demand, as well as the non-pecuniary benefits of the profession and opportunity costs associated with teaching seemed to play minor roles in focus group participants' decisions. Though many participants saw teaching as a demanding career, many who were seriously considering teaching held positive perceptions of the profession's retirement and healthcare benefits and reported appreciating teaching's school-day schedule and its holiday and vacation benefits. Some participants, however, perceived teaching jobs to be hard to come by and about half rated job security in the profession low, while others saw teaching as a steady career that will always be in demand. With regard to perceived cost, focus group participants most frequently mentioned the financial opportunity cost of choosing teaching over higher-earning occupations. Several also discussed having to pay a curricular cost to prepare to teach in the form of either having to give up another

academic major they enjoy or having to extend their graduation time frame. Overall, these factors were important for some focus group participants, but less so than salary, social status, and negative messages about the field.

Research Question 3: Decisions about Teacher Certification

The third research question examines the reasons why high-achieving, uncommitted prospective teachers might choose not to enroll in teacher preparation at the undergraduate level. This section reports quantitative and qualitative findings that speak to this question. It also discusses results from survey items that investigate the types of teacher preparation routes that are most attractive to uncommitted prospective teachers overall and the features they look for in a preparation program.

Quantitative Findings

Three sets of survey items explored uncommitted prospective teachers' interest in teacher preparation. These items asked uncommitted prospective teachers who were not enrolled in an undergraduate-level teacher preparation program at the institution why they had chosen not to pursue certification during their bachelor's degree. They also assessed the types of teacher preparation routes these students find attractive, as well as the specific characteristics they seek in a program. Findings from these items provide a broad context for the focus group data by characterizing the interests of the uncommitted prospective teacher sample at large and highlighting where differences emerge by academic achievement level and sex.

Choosing not to pursue undergraduate-level teacher preparation. Of the students identified as uncommitted prospective teachers who were not enrolled in teacher preparation at the university, under half (40%) said they have considered majoring in

education or earning their teaching certificate at the university. The survey also asked

uncommitted prospective teachers not enrolled in teacher preparation to indicate the

degree to which each of seven reasons explains why they are not currently pursuing

teacher certification at the university. Respondents selected from a 7-point, Likert-style

scale where 1 = not a reason, 4 = minor reason, and 7 = major reason. Table 16 reports

the frequency of responses to this item for uncommitted prospective teachers who were

not enrolled in teacher preparation but reported considering teacher preparation at the

university. Not being sure they wanted to teach and not having applied to the teacher

preparation program yet were the only response options with mean scores above 3. In

addition, the standard deviations for the majority of the items were near or above 2.0,

indicating a high degree of variability in responses. To capture this variability, Table 16

presents percentages for three grouped response options rather than mean scores.[39]

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[39] Responses were recoded so that 1-2 = Not a reason; 3-5 = Minor reason; 6-7 = Major reason.

Table 16

Reasons for Not Pursuing Teacher Certification at this University

	% Major reason	% Minor reason	% Not a reason
I'm not sure I want to teach.	41	27	32
I have not applied yet.	31	17	52
I would not be able to complete all the courses necessary for certification and still graduate in my desired time frame.	28	22	51
I can earn my teaching certificate after graduation through another program.	18	27	55
I'm not sure in which state I would eventually want to teach, so I don't want to earn my certificate in [STATE].[40]	11	12	77
I can teach after graduation without certification.	6	21	72
The courses required for teacher certification seemed too easy.	2	6	92
The courses required for teacher certification did not seem interesting.	1	11	88
I was not accepted into my preferred teacher certification program at [this university].	1	3	96

n = 98

Note. Rows may not sum to 100 due to rounding.

These results suggest that the four primary reasons this sample of uncommitted prospective teachers have not enrolled in teacher preparation at the university are: (1) they are not sure they want to teach (major or minor reason for 68%); (2) they would not be able to graduate in their desired time frame if they completed the program (major or minor reason for 50%); (3) they have not yet applied for the program (major or minor reason for 48%); or (4) they can earn their teaching certificate after graduation through another program (major or minor reason for 45%). Smaller percentages reported not

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[40] All references to the state in which the university is located have been redacted to promote institutional anonymity.

pursuing undergraduate-level teacher preparation at the university because they are not sure which state they want to teach in or because they can teach after graduation without certification. Although many focus group participants referred to the education major and its courses as "easy" and some suggested that their education courses were not sufficiently engaging, the vast majority of survey respondents ($> 85\%$) reported not being deterred from pursuing teacher education at the undergraduate level because its required courses seemed too easy or uninteresting.

I conducted chi-square tests of independence to examine differences in the response patterns by academic achievement level[41] and sex, but the analyses identified no significant differences with adjusted standardized residuals greater than |2.0|.

Interest in preparation routes. The survey also asked respondents who were identified as uncommitted prospective teachers but were not enrolled in a teacher preparation program about their interest in various teacher preparation routes. Frequencies for this item, as well as differences by sex, are reported in Table 17. Respondents were most frequently interested in college or university-based teacher preparation programs. The majority indicated interest in a graduate-level (66%) or undergraduate-level (50%) program offered by a higher education institution. Substantially fewer were interested in a certification program outside a college or university (26%) or teaching without certification (12%).

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[41] Higher-achieving = SAT critical reading and math $\geq$ 1200; lower-achieving = SAT critical reading and math $<$ 1200.

Table 17

Preparation Routes of Interest by Sex

	UPTs not enrolled in teacher prep		
	% Total	% Male	% Female
A college or university-based, graduate-level teacher education program	66	50[†]	73[†]
A college or university-based, undergraduate-level teacher education program	50	45	52
A teacher certification program based outside a college or university	26	31	23
No certification route; I would seek a teaching job that does not require certification	12	18[†]	9[†]

Total *n* = 245-247; Male *n* = 71-72; Female *n* = 172-173

[†] Significant difference with adjusted standardized residual for chi-square analysis ≥ |2.0|

I also examined differences in the response patterns of these items by achievement level and sex using chi-square tests of independence. Although no differences by achievement level emerged, significantly more female respondents (73%) indicated interest in a college or university-based, graduate-level program than their male peers (50%), χ^2 (1) = 11.63. Conversely, although only 12 percent of the total sample rated teaching without certification as attractive, significantly more male respondents (18%) reported interest in forgoing certification than females (9%), χ^2 (1) = 3.88.

Program characteristics. The final set of teacher preparation survey items examined which characteristics students seek in a preparation program. Table 18 reports how important uncommitted prospective teachers who were not enrolled in teacher preparation at the university found seven program characteristics. Overall, the majority of respondents indicated that all seven characteristics were somewhat or extremely important. Over three-fourths reported that program quality, affordability, and reputation were extremely important; another two-thirds indicated that the program being offered at

an institution of higher education was extremely important. Strangely, over 90 percent of respondents said having a lengthy student teaching experience was extremely or somewhat important, and yet 80 percent also indicated the importance of having a short student teaching experience. This confounding finding might suggest that respondents did not carefully read these two, similarly-worded items.

Table 18

Importance of Teacher Preparation Program Characteristics

	Extremely important	Somewhat important	Not at all important
High quality	87	13	
Affordable	83	17	< 1
Strong reputation	77	23	
Offered at a college/university	67	31	2
Has a lengthy student teaching experience	34	57	9
Program is short	30	62	8
Has a short student teaching experience	25	57	18

$n = 246\text{-}247$

Chi-square tests of independence revealed only one statistically significant difference between the response patterns of higher- and lower-achieving respondents. Higher-achieving respondents were significantly less likely to indicate that having a short student teaching experience was extremely important (17%) than their lower-achieving peers (29%), $\chi^2 (2) = 5.35$. Caution should be used when interpreting these results, however, due to the similar response patterns for the items pertaining to valuing a lengthy and short student teaching experience.

In addition, several significant differences emerged in the male and female response patterns for the teacher preparation program characteristics item, as reported in Table 19. While both males and females reported valuing a teacher preparation program that is high quality (χ^2 [1] = 4.84), affordable (χ^2 [2] = 4.23), and offered at a college or university (χ^2 [2] = 4.55), females appear to find these characteristics slightly more important than their male counterparts.

Table 19

Importance of Teacher Preparation Program Characteristics by Sex

	Extremely important		Somewhat Important		Not at all important	
	Male	Female	Male	Female	Male	Female
High quality	81[†]	91[†]	19[†]	9[†]		
Affordable	76	86	24[†]	13[†]		< 1
Strong reputation	77	78	23	22		
Offered at a college/university	57[†]	71[†]	40[†]	27[†]	3	2
Has a lengthy student teaching experience	35	34	56	58	10	8
Program is short	32	29	65	61	3	10
Has a short student teaching experience	23	24	59	58	18	18

n = 243-244, Male *n* = 71-72; Female *n* = 172

[†] Significant difference with adjusted standardized residual for chi-square analysis ≥ |2.0|

Note. Percentages may not sum to 100 due to rounding.

Qualitative Findings

The higher-achieving undergraduates who took part in the focus group discussions recounted several key reasons why they chose not to pursue teacher certification as undergraduates. Their rationales depended largely upon their degree of

interest in the profession: as might be expected, students who were seriously considering teaching were more aware of certification routes and had thought more carefully about how they would prepare to teach if they decided to do so.

Awareness of and interest in certification routes. As previously mentioned, higher-achieving students were invited to participate in a focus group if they reported some degree of interest in a teaching career, but were uncertain as to whether they would teach after graduation. Many focus group participants knew before arriving to college that either they were no longer interested in a K-12 teaching career or that it was not their primary interest. These students noted that they had given little thought to teacher preparation, and many said they were unclear about teacher certification requirements. Nearly all focus group participants knew about bachelor's and master's-level teacher preparation programs; however, although the university offers an undergraduate curriculum that prepares students to teach at any K-12 level with a bachelor's degree, multiple students were under the impression that teaching was a five-year program through which one earned a bachelor's and master's degree.

Focus group participants who said they were planning to teach or prepare to teach after graduation or who were still undecided about teaching were more familiar with graduate and undergraduate-level preparation options at the university. Most of those who were still undecided said they would enroll in a graduate-level program at a college or university either after graduation or further into the future if they opted to teach. For many of these students, completing teacher preparation at the graduate level was particularly attractive because the graduate route allowed them to earn an undergraduate

degree in another field. The comments of two students on this issue represent the views of several focus group participants:

> If you go in as an undergrad and do teaching, it's like once you graduate it's a very small area that you could enter. But even if I get this master's in teaching, say I teach for like a year and I'm like, 'You know what? This isn't for me,' I still have my undergrad in math … I could still go back. Yeah, I'd be a year or two behind where I would've been, but I could still go into other fields relatively easily compared to someone who only has an education undergrad degree.

> I know that I'm able to go back and get a master's in teaching regardless of what my undergraduate degree is. I don't need that secondary education undergrad in order to do anything. I can go to get my master's and take the test where it's only going to be the math that I'm required to teach.

This finding aligns with results from the survey, which indicate that 98 percent of uncommitted prospective teachers not enrolled in teacher preparation find it extremely or somewhat important that a teacher preparation program be offered at a college or university.

As previously mentioned, two focus group participants had recently been accepted to Teach for America: one had made a preliminary commitment to the program at the time of the focus group and the other was still deciding whether to join TFA. Regardless of their commitment to teaching, all participants had heard of Teach for America (TFA), but only one had heard of or considered an alternative preparation program other than TFA. Students held a range of opinions about Teach for America. Some said they had heard "great things" about TFA, which these students perceived to be a prestigious program that attracts the "top people" to the profession and gives them the opportunity to teach while making only a short-term career commitment. "Teach for America has a huge amount of hype," said one student, "Everyone talks about Teach for America. The best of the best go to Teach for America."

Several participants said TFA was attractive not only because it is a "noble" program, but also due to its selective reputation. This finding is reflected in the survey results. Over three-quarters of uncommitted prospective teachers said reputation was an extremely important feature of a teacher preparation program. About half the focus group participants who were familiar with Teach for America said they were interested in the program because it "looks great," "employers love it," it's "a good jumping off point" for a career, and it "has great connections to schools and companies." One of the two students who was recently accepted to Teach for America made the following, related comment:

> I think Teach for America people are regarded a lot higher in general only because of how hard it is to get in. My dad, when I told him I wasn't sure if I was going to do [TFA], he was like "I know this is bad, I am telling you even if you don't do it, you should always say in interviews that you got accepted, because anyone who knows anything about the program, once they know you got in, you're suddenly that much more attractive." … as soon as you walk into a school and either the teachers or other people ask what you're doing and you say you're doing Teach for America, they automatically think you are smart, and you have leadership experience, and you're a great person, which isn't always true, but that is what people think if they know about the program.

The other half of participants familiar with TFA had heard "horror stories" about teachers being "set up for failure" with little instructional knowledge and limited ongoing support. These focus group participants were doubtful that the program's teachers are adequately prepared for the challenges of hard-to-staff schools. Instead, they believed TFA's short summer training program left new teachers "in the dust to just figure everything out" for themselves. This lack of preparation, many believed, was "unfair" to the students, schools and teachers. The comments of two participants exemplify those of several others:

I know I probably wouldn't do Teach for America because of the problems behind it. I guess you read about how teachers who will go to these destitute cities where these kids are really struggling, stay there for two years and then they leave. And even though it's a good thing for teachers, maybe, at least for college kids who are just graduating—they need a job, they want to make some money—it doesn't help those kids … there's no consistency for these kids, unfortunately.

It's like you're taking these people who may potentially be really good teachers and not giving them the proper training, and then they come away from this with such a negative experience, they're not going to continue with teaching.

Two focus group participants who are seriously considering teaching held more nuanced views about Teach for America. Though they each investigated TFA, they ultimately decided that either a traditional preparation program or another alternative preparation program would afford better training and support for their long-term interests in teaching. These students made the following two comments:

I kind of have mixed feelings on Teach for America. But yeah I'd definitely choose the Urban Teaching Center or something that's structured more like that … I think there's … a lot of issues with teacher turnover and TFA is only a two-year program and you're not getting that much support before you go in … So for me … without a background in education, with only that six weeks of training, that you're necessarily qualified to teach in these high needs, urban schools that they place you into.

I did think about [TFA] for a while. The more I learn about it, though, I understand why people look down upon Teach for America, and I don't want to pay into a system that's like that. Although I do think they probably do really amazing things, they also might do some harmful things … I think that sometimes it's great to have young teachers who still have a lot stamina left in them going into communities that don't necessarily have that. But, at the same time, to learn how to teach for a summer and then to go into a really hard school probably doesn't work as often as it's supposed to.

Notably, survey findings reveal that high-achieving, uncommitted prospective teachers are significantly less likely to report that a short student teaching experience is an extremely important aspect of a teacher preparation program than their lower-achieving peers. Together, the quantitative and qualitative findings from this study

suggest that adequate preparation before entering the classroom may be important to many high-achieving students, especially those who consider longer-term teaching careers.

Curricular deterrents from teaching: timing, opportunity cost, and rigor. Of the focus group participants who had considered a career in K-12 teaching since coming to college but were not enrolled in or preparing to enroll in an undergraduate-level teacher preparation program, most cited curricular timing issues as their primary reason for selecting a major outside education. This finding aligns with the quantitative results, which indicate that having to extend their graduation time frame in order to complete undergraduate-level teacher preparation is a major or minor reason half of uncommitted prospective teachers choose not to prepare to teach as undergraduates.

Several focus group participants noted that by the time they developed a serious interest in teaching, it would have taken them nearly as long to complete a bachelor's degree in education as it would have to graduate with their current major and earn a one-year master's degree. As mentioned earlier in this chapter, three participants said they were already committed to another academic discipline and did not want to change their undergraduate major to Education or extend their graduation time frame to prepare to teach. These students said that if they decided to teach, they would complete a master's degree or pursue an alternative certification program.

As previously discussed under the *Task Demand* section of this chapter, lack of rigor in the education curriculum also emerged as a minor deterrent from majoring in education for a few focus group participants. The fact that this factor impacted fewer students than curricular timing and opportunity costs issues also aligns with findings from

the survey, which reveal that just eight percent of uncommitted prospective teachers who were not enrolled in teacher preparation said that classes being too easy was a major or minor reason for not preparing to teach at the undergraduate level. Though lack of rigor in education courses was a minor factor for only a few focus group participants, several described how the education classes they have taken have been "way easier" than their other courses and that some of their classmates admit to enrolling in education courses "for an easy A." For one student, however, the perceived ease of education courses was an important factor in her recent decision to add a double major in education to her already rigorous, pre-medicine curriculum. Although teaching was this student's fallback career path at the time of the focus group, she found it attractive that she could double major and graduate with all the teacher certification requirements, eliminating the need for further schooling should she decide to teach.

Summary

Quantitative findings pertaining to the third research question suggest that uncommitted prospective teachers, in general, may shy away from undergraduate-level teacher preparation if they (a) are unsure about whether they want to teach, (b) are unable to complete all the required courses in their desired graduation time frame, or (c) perceive they have the opportunity to earn certification after graduation. Respondents reported being more interested in a college or university-based graduate or undergraduate teacher preparation program than an alternative program or teaching without certification. They found program quality, affordability, and reputation to be more important than that the program is short in duration.

Qualitative results indicate that high-achieving, uncommitted prospective teachers who have given teaching more serious consideration are more aware of the range of preparation options than others. Focus group participants who were not preparing to teach at the undergraduate level said that if they decided to teach, they would enter a master's program after graduation or pursue alternative certification. All participants had heard of Teach for America but offered mixed views about the program. Those who were less serious about long-term teaching careers saw TFA as a career stepping stone that allowed recent college graduates to help others while building their resume and making valuable networking connections. Highly-selective, prestigious alternative certification programs like TFA appeared to be effective recruitment tools for these students. Participants who were considering long-term teaching careers were skeptical that TFA's short-term preparation adequately prepared recruits for success in high-needs schools.

Research Question 4: Recruitment Incentives

The fourth research question asks which types of policies and/or incentives might encourage high-achieving, uncommitted prospective teachers to teach. The first portion of this section reports quantitative results pertaining to this question and highlights statistically significant differences by respondents' academic achievement level and sex. The second portion of the section summarizes qualitative findings on the topic emerging from the focus groups with high-achieving students.

Quantitative Findings

A wide range of initiatives aimed at recruiting talented prospective teachers currently populates the education policy landscape; however, to limit the scope of this

study, the survey focused on uncommitted prospective teachers' interest in one subset of financial initiatives and alternative certification programs.

Financial incentives. The survey prompted respondents to indicate their degree of interest in seven specific financial incentives, as outlined in Table 20. Overall, uncommitted prospective teachers in the sample rated each of these policies high; for each option, over 90 percent indicated that the incentive would at least somewhat encourage them to pursue a career in teaching.

Table 20

Interest in Policies to Encourage Teaching

	Definitely encourage	Somewhat encourage	Not at all encourage
Higher starting salaries for teachers	79	19	2
Teacher salaries or bonuses based on teacher performance	72	25	3
A scholarship to earn a master's degree in teaching	66	29	5
Student loan forgiveness programs for teachers	64	30	6
A stipend (small salary) for time spent student teaching	60	37	4
Reduced or free tuition for undergraduate courses required for teacher certification	58	38	5
An undergraduate scholarship to earn teacher certification	43	49	8

n = 284-285

Note. Rows may not sum to 100 due to rounding.

Despite the fact that salary was a non-significant predictor of intent to teach for the full uncommitted prospective teacher sample (RQ1), findings from data pertaining to RQ4 emphasize the persuasive power of teachers' salaries. Ninety-eight percent of uncommitted prospective teachers indicated that higher starting salaries would encourage them to consider teaching, with 79 percent reporting higher starting wages would

definitely encourage them to pursue the profession. These students also appear to be attracted to performance pay: 97 percent reported teacher salaries or bonuses based on performance would definitely or somewhat bolster their interest in teaching.

Financial incentives aimed at subsidizing an undergraduate education including reduced or free tuition for undergraduate teacher certification courses and undergraduate scholarships were slightly less encouraging for respondents, but still rated quite favorably. As reported in Table 21, findings from chi-square tests of independence examining differences in the response patterns of higher- and lower-achieving uncommitted prospective teachers indicate that higher-achieving undergraduates were more likely than their peers to report student loan forgiveness programs (χ^2 [2] = 9.99), undergraduate scholarships (χ^2 [2] = 4.04), and reduced or free undergraduate tuition for teacher certification courses (χ^2 [2] = 5.36) would *not at all encourage* them to pursue a teaching career. Though fewer higher-achieving uncommitted prospective teachers than their lower-achieving peers said these incentives would *not at all encourage* them to teach, there were no significant differences in the response patterns of the two populations with regard to the *definitely encourage* and *somewhat encourage* responses. In other words, though more higher-achieving students do not find financial incentives that subsidize undergraduate education attractive, those who do find them attractive report that these incentives would *definitely* or *somewhat* encourage them to teach at statistically similar rates as lower-achieving students.

Table 21

Interest in Policies to Encourage Teaching by Achievement Level

	Definitely encourage		Somewhat encourage		Not at all encourage	
	HA[*]	non-HA	HA	non-HA	HA	non-HA
Higher starting salaries for teachers	80	76	17	23	3	1
Teacher salaries or bonuses based on teacher performance	70	73	25	26	5	2
A scholarship to earn a master's degree in teaching	65	69	29	27	6	4
A stipend (small salary) for time spent student teaching	58	65	36	33	6	2
Student loan forgiveness programs for teachers	59	71	31	29	10[†]	1[†]
Reduced or free tuition for undergraduate courses required for teacher certification	54	65	37	34	7[†]	2[†]
An undergraduate scholarship to earn teacher certification	41	45	47	50	11[†]	4[†]

n = 252-253, HA *n* = 139-140, non-HA *n* = 112-113

[*] HA = High-achieving

[†] Significant difference with adjusted standardized residual for chi-square analysis $\geq |2.0|$

Note. Percentages may not sum to 100 due to rounding.

The chi-square tests of independence did not identify any statistically significant differences among higher- and lower-achieving uncommitted prospective teachers with regard to how encouraging they would find higher starting salaries for teachers or teacher performance pay. Though policymakers commonly assume that academically-strong prospective teachers are particularly deterred from teaching by salaries considerably lower than their other career options, these survey findings indicate that higher- and lower-achieving students find higher salaries and performance pay attractive at equal

rates. The analysis also failed to identify differences in responses by achievement level for master's-level scholarships and student teaching stipends.

Small but statistically significant differences for these financial incentive items did emerge for males and females (see Table 22). Female respondents reported finding student loan forgiveness programs for teachers (χ^2 [2] = 6.12) and stipends for time spent student teaching (χ^2 [2] = 11.11) slightly more attractive than male respondents. Fourteen and 21 percent more females than males indicated that student loan forgiveness programs and a stipend, respectively, would *definitely* encourage them to teach.

Table 22

Interest in Policies to Encourage Teaching by Sex

	Definitely encourage		Somewhat encourage		Not at all encourage	
	Male	Female	Male	Female	Male	Female
Higher starting salaries for teachers	78	80	20	19	2	2
Teacher salaries or bonuses based on teacher performance	70	73	26	25	5	3
A scholarship to earn a master's degree in teaching	60	69	33	27	7	4
Student loan forgiveness programs for teachers	54[†]	68[†]	40[†]	26[†]	6	6
A stipend (small salary) for time spent student teaching	45[†]	66[†]	49[†]	32[†]	6	3
Reduced or free tuition for undergraduate courses required for teacher certification	51	61	41	36	7	4
An undergraduate scholarship to earn teacher certification	38	46	52	48	10	7

n = 281-282, Male *n* = 81-82, Female *n* = 199-200

[†] Significant difference with adjusted standardized residual for chi-square analysis ≥ |2.0|

Alternative certification. As reported in the previous section, several survey

items inquired about aspects of alternative teacher certification programs. Findings from

two of these items indicate that uncommitted prospective teachers find preparation

programs offered by colleges or universities to be attractive. Ninety-eight percent of

uncommitted prospective teachers who were not enrolled in a teacher preparation

program at the university said that they find it *extremely* or *somewhat* important that a

preparation program be offered at a college or university. Over two-thirds (67%) found

this characteristic *extremely* important. Though there were no statistically significant

differences on this item with regard to achievement level, females (71%) were more

likely to say it was *extremely* important that a preparation program be offered by a college or university than males (57%) (see Table 17). In response to a similar survey item, just over a quarter (26%) of uncommitted prospective teachers who were not enrolled in a preparation program said they would be interested in a program based outside of a college or university (see Table 17). Over double this percentage (66%) reported interest in a college or university-sponsored, graduate-level preparation program. Just 12 percent of these undergraduates indicated interest in teaching without certification.

Responses from two additional items suggest that uncommitted prospective teachers value teacher preparation. Whereas 90 percent of these respondents said they believe they would be a good teacher if they completed a teacher preparation program consisting of coursework and student teaching, just a third said they expected to be a good teacher without this preparation (Table 23). Though one might expect higher-achieving students to be more confident in their teaching abilities without preparation, no significant differences in the response patterns of higher- and lower-achieving students emerged for these items. Interestingly, however, while there were no differences by sex with regard to teaching competence *without* preparation, female uncommitted prospective teachers were more likely to agree that they would be a good teacher *with* preparation (94%) than males (85%), (χ^2 [1] = 5.39).[42]

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[42] When respondents who reported being enrolled in a preparation program at the university were removed from the analysis, however, the adjusted standardized residuals for this finding dropped from 2.0/-2.0 to 1.9/-1.9, rendering the difference just below statistical significance (χ^2 [1] = 3.58).

Table 23

Teaching With and Without Preparation

	Agree	Neither agree nor disagree	Disagree
If I were to complete teacher preparation (i.e., coursework and student teaching), I think I would be a good teacher.	90	9	1
I think I would be a good teacher even without teacher preparation.	33	23	45

n = 294

Note. Rows may not sum to 100 due to rounding.

Qualitative Findings

When asked what policies, incentives, initiatives or changes to the profession might encourage academically-strong students to consider teaching, focus group participants offered multiple micro- and macro-level, financial and non-financial suggestions. With regard to financial incentives, as might be expected given the survey findings, someone in nearly every focus group argued for increasing the salary associated with teaching. One student also suggested that if the government is not able to increase salaries, it could subsidize housing or provide other non-salary benefits such as a public transportation subsidy.

Participants also discussed several non-financial, macro-level changes that would make the profession more attractive such as increasing the prestige of and respect for teaching, allowing teachers more autonomy, and reducing the influence of wide-reaching education policies. Other than standardizing teacher licensure requirements nationally, which two focus group participants suggested, no one mentioned changes to licensure

requirements or expanding alternative certification programs as factors that would affect their decisions about teaching careers.

Salary. Almost uniformly, the first suggestion for making teaching more attractive was increasing teachers' salaries. These qualitative findings reinforce the quantitative results, which reveal that higher starting salaries would encourage the vast majority of uncommitted prospective teachers (98%) to teach. Regression results also point to a positive relationship between salary perceptions and intent to teach among high-achieving students. To this point, one focus group participant said that although she thinks a few changes might attract prospective teachers, "money's probably the biggest." Another put it simply, by saying: "High achieving students want a high achieving job and higher salary." Some participants were concerned about their long-term financial stability, especially in light of the recent economic downtown. "Everyone is struggling in some way," said one focus group participant, "and you don't want to screw yourself over in the future by entering a career that isn't going to pay well." Others discussed having friends who are interested in many aspects of teaching but "in terms of pay, they can't support themselves and what they want to do in their lives on that salary."

As previously mentioned, salary issues went beyond low starting wages with many participants calling for more salary growth in the field. Although survey results indicate that bonuses based on performance would definitely or somewhat encourage 97 percent of uncommitted prospective teachers to enter the field, no focus group participants brought up performance pay. One, however, commented that "if you're a really good teacher, you should be rewarded for the fact that you are a really good

teacher," but she did not specify that rewards should be differentiated based on performance.

Social status. After salary, reducing what one student called "the stigma around teachers" was the most common suggestion for making the profession more attractive. Many participants mentioned that teaching is not viewed as a respected or prestigious field in this country, which serves as a major deterrent for prospective teachers. One student talked about the importance of changing the "those who can't do, teach" mentality when he bluntly said "it kind of sucks to be a smart person to have people be like 'haha, you're stupid, you're a teacher.'"

Focus group participants said they would perceive teaching as less stigmatized if they saw more "high-achieving students go into the teaching career" and if schools had "higher standards" for who they hire so that all students would be exposed to high-quality teachers during their K-12 career. Another student made the following macro-level comment about improving the general social impression of teaching:

> I think if they did some work on just trying to change the general perception. Just having the people at the top acknowledge that teaching is a rewarding career whether or not you get more money for it. That might be a harder thing to accomplish, but just the acknowledgement of teachers from higher up, I think, would change a lot of students' minds about, and consider going into education.

Policies and pressures. As discussed earlier in this chapter, multiple students who had given teaching serious consideration discussed how education policies, particularly curricular requirements and *No Child Left Behind*, have compromised teachers' autonomy and made the profession less attractive. One focus group participant said the practice of "teaching to the test" is part of the reason she decided not to teach, and that teaching "would absolutely be more attractive" if there were less teaching to the

test. Another said accountability policies that reward teaching to the test prompt teachers to be "worried about their end-of-the-year performance" instead of "focus[ing] on teaching what they want and being passionate about it and getting their students passionate." Others described how policies change frequently for K-12 teachers and one student noted that the profession would be more appealing if teachers had more opportunity to contribute to the formation of policies that shape their professional practice and "more of an authority to make changes within the school."

Collegiate courses. Several students in one focus group described how they were not aware of entry-level education courses offered at the university and how their interest in teaching might have blossomed if they had had more opportunity to take a class focused on teaching and learning as part of their early general education coursework. The following comment captures the conversation:

> I know high-achieving students want to take hard classes, but I know we also have to take [general education] classes … I know I took a [criminology] class because it was so easy but then I ended up liking criminology just because it's cool to learn about the law. So I think if there's more exposure … it might help get more kids to be like "oh hey, I actually like this." … " I think more exposure to [education courses] might engage more kids to be like "oh this is not as easy as I thought, but it's actually a cool thing to do."

Two students described how they perceived that "a big downfall" of their university, in particular, is that classes are often restricted to students who are already majoring in that discipline, thereby excluding those who might have an interest in the field. These participants conjectured that if academically-talented students completed a challenging, engaging education course early in their collegiate curriculum, they might be more likely to consider a career in teaching. These students made the following, related comments:

I think if more of the education classes … were open to non-majors … it'd be really helpful, especially for people who don't know what they want to do in their life …

I feel like [this university] draws a huge population of undecided incoming freshmen and undecided remaining sophomores … I feel like there's a lot of intelligent, untapped talent in that population that [doesn't] know what they're doing, and if we push in certain [general education] classes and the introductory courses to consider education as an option, I think that would make a push toward [recruiting academically-talented teachers.]

Summary

Survey data pertaining to research question four indicate that a range of financial incentives might encourage uncommitted prospective teachers to consider teaching, but higher starting salaries and performance pay appear to be more important than financial assistance for undergraduate coursework, especially for high-achieving students. Qualitative data confirm this finding: when asked what might attract them to teaching, focus group participants most frequently recommended increasing teachers' salaries. They also suggested improving the profession's social image, in addition to reducing policy pressures and exposing undergraduate students to interesting, rigorous education courses early in their collegiate careers.

Conclusion

This chapter presented quantitative and qualitative results pertaining to the four research questions for the study. With regard to the relationships between expectancy-value factors and uncommitted prospective teachers' intentions to pursue a teaching career (RQ1 and RQ2), the quantitative analyses reveal that the same two factors were the most influential predictors for the full uncommitted prospective teacher sample, the higher-achieving subsample, and the lower-achieving subsample. These factors include

(1) students' interest in teaching, their perceived abilities in the field, and encouraging messages they receive from others about teaching (interest/ability/encouragement) and (2) how socially useful they find teaching (social utility). Though interest/ability/encouragement and social utility were statistically significant, positive predictors of teaching intentions for all three groups, they were most influential for the higher-achieving subsample. The quantitative analysis also identified salary as a statistically significant, positive predictor of intent to teach for the higher-achieving students and prior teaching and learning experiences as a statistically significant, negative predictor for this group. Neither of these factors was significant for the other two samples.

These quantitative results indicate that for higher-achieving students, interest/ability/encouragement, social utility, and salary are associated with a higher likelihood of intending to teach, whereas reporting positive past experiences with teaching and learning is negatively associated with teaching intentions. The qualitative analysis adds to these findings by illuminating the relationships among higher-achieving students' interest in teaching, perceived teaching ability and encouragement to enter the field. Though fewer participants discussed interest/ability/encouragement than other factors such as salary and social status, those who did described how encouragement from others to teach and success with teaching tasks fueled their interest in the profession. Despite the fact that social utility emerged as an important variable in the quantitative analysis, most focus group participants did not mention aspects of social utility when asked which factors are most influential in their teaching-related career decisions.

As might be expected, findings from the qualitative and quantitative analyses indicate that higher-achieving students who have negative perceptions of teachers' salaries are less likely to plan a career in teaching than those with more positive salary perceptions. Focus group results reveal that for higher-achieving students, negative perceptions of teachers' salaries and social status, especially in conjunction with messages from others dissuading them from teaching, combine to have a powerful, adverse effect on these students' intentions to teach. Focus group findings also suggest that other variables such as the profession's task demand (e.g., workload, accountability pressures), non-pecuniary benefits (e.g., family-friendly schedule) and opportunity costs (e.g., curricular costs, financial costs) play minor roles in higher-achieving students' teaching-related career decisions.

Results pertaining to uncommitted prospective teachers' interest in teacher preparation indicate that they are more attracted to college or university-based graduate or undergraduate-level preparation programs than alternative programs or teaching without certification. These students are less likely to complete teacher preparation at the undergraduate level, however, if they are unsure about whether they want to teach, are unable to complete preparation requirements in their desired graduation time frame, and/or have the opportunity to become certified to teach after graduation. Higher-achieving students might also opt not to prepare to teach at the undergraduate level if they have to pay a curricular opportunity cost in the form of changing majors or forgoing other classes they find interesting in order to fit in teacher preparation requirements. With regard to alternative certification, although the vast majority of higher-achieving students in the focus group sample were familiar with Teach for America, they held mixed views

about the program. Whereas some found the program's prestige and networking opportunities attractive, others were doubtful that TFA provided sufficient training to be successful on the job.

Survey and focus group participants reported that increasing salaries for teachers would encourage them to more seriously consider teaching. Qualitative findings also indicate that other measures such as improving the profession's social image, reducing policy pressures on teachers, and creating more interesting and rigorous curricular opportunities to expose students to teaching might attract more higher-achieving students to the profession.

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

The purpose of this dissertation was to identify the factors that undergraduate students who consider careers in teaching (i.e., uncommitted prospective teachers) weigh when deciding whether to teach at the K-12 level and to ascertain which factors are most influential in the teaching-related career decisions of high-achieving students, in particular. In addition, this investigation aimed to identify why undergraduates who are interested in teaching might choose not to pursue teacher certification at the bachelor's level and which policies and incentives might encourage them to teach.

In this mixed methods study, quantitative survey data from uncommitted prospective teachers and qualitative focus group data from high-achieving, uncommitted prospective teachers worked in concert to shed light on each of the study's four research questions. Findings from this research have empirical implications for researchers seeking to understand these students' decisions. Study results also have practical implications for policymakers interested in recruiting talented teachers to careers in the classroom and higher education practitioners who advise and educate prospective teachers.

The final chapter of this dissertation explores the implications of the study's key findings with regard to how they fit in the context of existing literature. It also summarizes this investigation's limitations and presents a series of recommendations for research, policy and practice.

Discussion

This study produced two sets of key findings. The first set of findings identifies five factors that influence uncommitted prospective teachers' teaching career decisions,

particularly those of high-achieving students. The second set of findings addresses the policy context of teaching. These findings speak to why students might not choose to pursue teacher certification at the undergraduate level and identify the program features they find attractive. This set of findings also identifies students' views about alternative teacher certification programs and financial incentives that might encourage them to teach.

Factors that Influence Intentions to Pursue a Teaching Career

Together, results of this study's quantitative and qualitative analyses point to five key factors that influence uncommitted prospective teachers' intentions to pursue a K-12 teaching career: (1) SAT scores; (2) interest/ability/encouragement; (3) social utility; (4) perceptions of high cost/low reward; and (5) prior teaching and learning experiences. Quantitative results indicate that while SAT scores have a negative relationship with intent to teach for the full uncommitted prospective teacher sample, interest/ability/encouragement and social utility have positive relationships with teaching intentions for all three groups (full uncommitted prospective teacher sample, higher-achieving subsample, lower-achieving subsample). Though interest/ability/encouragement and social utility both have positive effects on teaching intentions, they have stronger relationships with intent to teach for the higher-achieving group than for the other two groups. The fourth and fifth factors, perceptions of high cost/low reward and prior teaching and learning experiences, affect higher-achieving students specifically. Quantitative and qualitative data indicate that many higher-achieving students have the perception that teaching is a high cost/low reward profession and that this perception has a substantial, negative effect on their teaching intentions. In

addition, results from the quantitative analysis on the higher-achieving subsample reveal that for higher-achieving students, positive perceptions of their past teachers and previous learning opportunities (i.e., prior teaching and learning experiences) negatively impact intent to teach.

SAT. Findings from this study confirm a well-documented pattern in the literature (Vance & Schlechty, 1982; Manski, 1987; Henke et al., 1996; Henke et al., 2000): college students with strong academic credentials, SAT scores in this case, are less likely to demonstrate commitment to a K-12 teaching career than those with weaker credentials. In the full uncommitted prospective teacher sample, students who scored one standard deviation above the mean for SAT (~1336) had over twice the predicted probability of reporting being "unlikely" to teach as being "likely" to teach. By comparison, those who scored one standard deviation below the mean (~1036) were almost equally likely to report intending or not intending to teach. This finding provides further justification for investigating why high-achieving students are less attracted to teaching than their peers.

Interest/ability/encouragement. In the exploratory factor analysis, items related to interest value, perceived teaching ability, and social encouragement loaded onto one factor, which exhibited a strong positive relationship with intent to teach and emerged as the most influential variable in the regression for all three groups: uncommitted prospective teachers, higher-achieving students and lower-achieving students. This factor captured aspects of several higher-order constructs the theoretical framework purported to be conceptually distinct, including one aspect of subjective task value (interest value), as well as a self-perception dimension (perceived teaching ability), and one aspect of socialization influences (social encouragement).

Regression results reveal that uncommitted prospective teachers who scored one standard deviation above the mean on the combined interest/ability/encouragement factor had over three times the predicted probability of being "likely" to teach as those who scored one standard deviation below the mean. This variable was even more influential in the higher-achieving analysis, which indicated that higher-achieving students who scored one standard deviation above the mean on interest/ability/encouragement have over five times the predicted probability of intending to teach as those who scored one standard deviation below. Though a statistically significant predictor, interest/ability/encouragement was least influential for lower-achieving students who were only two times as probable to be likely to teach if they scored one standard deviation above the mean as if they scored one standard deviation below.

Though one might expect an uncommitted prospective teacher's interest in, perceived ability in, and encouragement for a teaching career to influence whether he or she chooses to teach, the fact that these concepts were sufficiently correlated to form one factor was unexpected given that other research utilizing exploratory and confirmatory factor analysis has shown them to be distinct concepts among other populations, including preservice teachers (Watt & Richardson, 2007; Watt et al., 2012). One potential explanation for this finding is that social factors such as messages from important socializers like parents, teachers, and peers about one's capabilities in certain domains influence one's self-concept of ability in those domains. In this respect, uncommitted prospective teachers who exhibit teaching skill might receive more encouraging messages to pursue a teaching career from socializers such as teaching supervisors or observant peers; likewise, those who often hear that they should consider teaching might perceive

that they would be good teachers. Whereas social encouragement and self-concept of teaching ability appear to be separate constructs for preservice teachers (Watt & Richardson, 2007; Watt et al., 2012), they may be less distinguishable for uncommitted prospective teachers who likely have less experience teaching and thus, a less-defined self-concept of their teaching abilities. Though Eccles' and colleagues' (1983) theoretical model purports that an individual's perceptions of socializers' attitudes and expectations affect the individual's self-concept of ability, researchers have devoted little empirical attention to establishing an empirical relationship between these two constructs.

A similar reciprocal relationship may exist between (a) perceived ability and interest, and (b) interest and encouragement. With regard to the former relationship, Eccles (2009) suggests that individuals may develop increased competence at tasks they initially engage in out of interest, and success with these tasks may eventually become part of their identities. In this way, we would expect that as an individual takes on teaching roles she finds interesting, both her teaching competence and self-concept of teaching ability grow. It is equally plausible that perceived ability affects interest. Individuals who feel successful in formal or informal teaching roles might develop an increased interest in the task and ultimately, increased interest in a teaching career. Finally, it is reasonable to expect that interest in teaching and encouragement for a career in the field would be related. Individuals typically choose to engage in tasks they find interesting, which likely cues encouragement to continue engaging in those tasks, especially if the individual demonstrates skill in the area. These hypotheses linking interest, perceived ability and social encouragement within the context of occupational decision-making require further investigation.

Some focus group data from this study affirm the close relationships among interest value, perceived teaching ability and encouraging messages about teaching, at least for higher-achieving, uncommitted prospective teachers. Several participants described how when they engaged in teaching activities out of interest, their perceptions of their teaching abilities improved, and they received encouraging messages from others to consider careers in teaching. Few focus group participants reported being encouraged to pursue teaching, however, but for those who did, the messages seemed to carry some weight in whether they intended to teach.

Though the interest/ability/encouragement amalgam factor has not been studied in the limited literature on uncommitted prospective teachers, its influence on teaching career decisions makes intuitive sense in that individuals who are interested in an occupation, perceive they are skilled at the occupation's tasks and receive encouragement to pursue the occupation are likely to do so. In addition, findings from Watt and Richardson's (2007) and Watt and colleagues' (2012) studies of preservice teachers in several countries and Parkes' and Jones' (2012) investigation of college students' music education decisions demonstrate that among a set of expectancy-value factors very similar to those utilized in this study, interest value and perceived teaching ability have the strongest influence on preservice teachers' decisions to teach.

Preservice teachers in Watt and colleagues' FIT-Choice studies (2007, 2012), however, rated encouraging messages about teaching as considerably less influential in their decisions to teach than perceived teaching ability and interest value.[43] Although I was unable to examine the effects of social encouragement on its own due to the

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[43] Parkes and Jones (2012) did not examine the effect of social encouragement.

multifaceted natured of the interest/ability/encouragement factor, the discrepancy between Watt and colleagues' findings and my own suggests that encouraging messages might be more influential in the teaching decisions of undergraduate students who are less committed to teaching (i.e., uncommitted prospective teachers) than in the decisions of those who are more committed to the profession (i.e., preservice teachers). The differing effects might be a function of the interrelated nature of interest, perceived teaching ability, and encouraging messages revealed among uncommitted prospective teachers in this study. For these students, encouraging messages from valued others about one's ability to teach were empirically indistinguishable from one's own ability perception and interest in teaching.

Social utility. Regression results indicate that of the examined factors, after interest/ability/encouragement, an uncommitted prospective teacher's social utility value for teaching has the strongest positive effect on his or her intent to teach. In this study, social utility measures how much the respondent values the ability to enhance equity and make a social contribution through teaching, as well as the potential to work with, and influence the future of, children and adolescents. This variable was a statistically significant, positive predictor of intent to teach in the quantitative analyses for the full uncommitted prospective teacher sample and for the higher-achieving and lower-achieving subsamples, but it had a slightly stronger effect on the higher-achieving students than the other two groups. For all three samples, respondents who scored one standard deviation above the mean on social utility had over twice the predicted probability of being likely to teach as those who scored one standard deviation below.

Though social utility had a stronger effect on higher-achieving students' teaching intentions than on those of the other two groups, few focus group participants mentioned the social value of a teaching career as a major factor in their decisions during the discussions. Multiple participants who discussed wanting to make a social contribution through their career tempered their comments by adding that they needed to be realistic about how much they would actually be able to "make a difference" as a teacher. For many focus group participants, teaching did not offer a unique opportunity to make a societal contribution because most of the other occupations they were considering (e.g., social work, school guidance counseling, healthcare, civil engineering, public policy) also provide opportunities to enhance others' well-being and contribute to society. Though they did not explicitly discuss this issue during the focus groups, these students may not have emphasized teaching's social utility value because they perceived their other occupational options to be equally socially useful. For example, one focus group participant who had recently decided not to teach at the time of data collection said having the ability to "serve the community" is an important feature of her future career. She said that although teaching provides "a great opportunity to help people and serve," she plans to serve instead as an emergency medical technician and/or as a firefighter while she works toward completing the qualifications to become a physician's assistant.

Though social utility was not a prevalent theme in the qualitative data for this study, at least three other studies of undergraduate and graduate students' teaching career decisions have identified the importance of social utility in deciding to teach. In their FIT-Choice studies, Watt and Richardson (2007) and Watt and colleagues (2012) found that questionnaire measures of social utility had the next greatest influence on preservice

teachers' teaching decisions after interest value and perceived teaching ability. Similarly, British undergraduates who were seriously considering teaching ranked "social contribution" as the second most important career factor after job enjoyment in Kyriacou and Coulthard's 2010 investigation. The opportunity to give back to the community also emerged as one of the most attractive features of teaching among ethnic minority students in Ramirez's study (2010). Quantitative findings from this research extend those reported in the existing literature by demonstrating that regardless of prospective teachers' level of academic achievement, several specific aspects social utility value (i.e., enhancing social equity, making a social contribution, working with children and adolescents and influencing their future) combine to form an influential factor with a positive effect on uncommitted prospective teachers' intent to pursue a K-12 teaching career.

High cost/low reward. A key decision factor that emerged from the quantitative and qualitative components of this investigation is that, in general, higher-achieving students see teaching as a high cost/low reward profession. Many perceive that if they were to teach, they would have to pay expensive financial and non-financial opportunity costs associated with salary, social status, and professional growth. For most, the rewards of teaching fall far short of its costs. Students have mixed perceptions of the profession's non-pecuniary benefits and many are keenly aware of the accountability pressures teachers face from parents, administrators, policymakers, and the community at large.

High cost: salary, social status, professional growth and self-perceptions. Results from the quantitative and qualitative components of this study align with regard to the impact of salary on high-achieving students' career decisions: the regression analyses identified a statistically significant, positive relationship between salary

perceptions and intent to teach, and focus group participants frequently cited salary as one of their most important decision factors. In fact, the most robust and consistent finding in the qualitative analysis is that for many high-achieving, uncommitted prospective teachers, salary and social status are mutually reinforcing factors that have a powerful impact on career decisions.

Although many participants said that teachers' wages were not the main factor in their occupational decisions, they highlighted the interrelated nature of salary and social status and emphasized that in our culture, money and the "things" it can buy are a compelling symbol of success. They reported frequently hearing negative messages about teaching that not only reiterated the profession's "average" pay and social status, but specifically questioned why intelligent, successful students with many options would choose to teach, especially if they had to pay a financial opportunity cost to do so. One student reported hearing from her mother: "You're such a smart girl, why don't you do something else? Why don't you do something more?" Another described the indirect, general message that "Teachers are important, but important people don't teach."

The qualitative data suggest that together, perceptions of teachers' salary and social status have a powerful ability to affirm or disconfirm the "achiever" self-perception that appears to be an important identity characteristic for the high-achieving, uncommitted prospective teachers in this study. Through enrollment in advanced classes and admission to selective academic programs, focus group participants reported hearing throughout their academic careers that they were "a little bit above," as one student put it, or in some way "important." For these students, being "smart" was a salient part of their

identity that would be compromised if they pursued a career with a middling salary and unimpressive social status.

Furthermore, participants perceived that because the profession offers few opportunities for growth, advancement, or achievement, they would be unable to distinguish themselves from average teachers through working hard to earn a more impressive job title or a higher salary. Though many students discussed how teacher accountability measures have had perverse effects such as compromising teacher autonomy and "teaching to the test," they did not mention the intended benefits of these policies, including increased financial reward through performance pay, individual recognition for teaching success, or improved teacher quality. For many focus group participants, the profession's low/average salary reinforced its low/average social status, which when combined with minimal opportunity for financial growth, stood in direct opposition to their career potential as above average students. These connections among salary, social status and self-perceptions add a new element to the literature, which has almost exclusively analyzed the effects of teaching decision factors individually. Though each of these factors might not alone determine whether or not a high-achieving student chooses to teach, results from this study suggest that taken together, they prove a fairly lethal cocktail.

Curiously, although social status emerged as an important factor in the qualitative data, the social status variable was not a statistically significant predictor of intent to teach in the regression analyses for any of the three examined samples—uncommitted prospective teachers overall, higher-achieving students, or lower-achieving students. What's more, the coefficient for social status in the higher-achieving analyses was

negative, suggesting that the higher respondents rated their perception of the field's social status, the *less* likely they were to intend to teach. One explanation for this unexpected finding is that teachers' social status is in some way confounded with how seriously an individual is considering teaching and how much he or she knows about the field. Specifically, many focus group participants who were preparing to teach and/or had spent considerable time in K-12 schools or with K-12 teachers were more aware of the politics and pressures teachers experience than students who had less interest in the profession. In this way, students who are more likely to report intending to teach may also be more knowledgeable about the challenges teachers face and less likely to rate teaching highly on social status items related to respect for teachers as professionals.

Low reward: benefits, autonomy and respect. The quantitative analyses did not reveal a statistically significant relationship between the non-pecuniary benefits of teaching (i.e., vacation and holiday benefits, family-friendly schedule) and intent to pursue a teaching career for the uncommitted prospective teacher sample (RQ1) or the higher- or lower-achieving subsamples (RQ2), yet benefits emerged as a minor decision factor for some focus group participants who were considering teaching. Although most participants who were familiar with the occupation perceived that teaching offers attractive non-pecuniary benefits such as healthcare, retirement, job security, and vacation time, not every participant viewed these benefits in a positive light. Most of these high-achieving students, if not all, were in middle or high school during the first years of The Great Recession (2007-2009), and several recalled witnessing reductions in force that left teachers or support staff in their schools laid off, let go, or with reduced benefits. These experiences suggest that the non-pecuniary rewards of teaching, which

are often thought to be attractive aspects of profession, may be less enticing for this particular cohort of college-aged, uncommitted prospective teachers than they were for previous generations.

Furthermore, in several focus group discussions, participants noted perceiving that teaching not only offers minimal professional prestige, but that teachers often receive little respect from parents, administrators, politicians, policymakers and the general public. Many participants who had spent time in classrooms or who had close family members who taught believed teachers have less professional autonomy than they had in the past due to accountability pressures that encourage "teaching to the test." They also perceived that teachers must align their practices to frequently changing curricular standards and guidelines that dictate what they can and cannot teach in the classroom. One student, who will be prepared to teach upon earning her bachelor's degree, plans to look for non-classroom education careers because she is unwilling to "sign herself up" for the politics, pressure, and low respect she observed in K-12 schools. These findings echo and expand upon some of the concerns documented in two studies of minority college students (Ramirez, 2010) and high school students (Bianco et al., 2011). High-achieving undergraduates, especially those enrolled in a teacher preparation curriculum, are savvy about the lack of autonomy and respect that accompanies these pressures, which in some cases convinces them not to teach. Although two survey items that loaded on the social status scale touched on the idea of teacher respect,[44] the survey did not fully assess respondents' perceptions of teacher morale.

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[44] These items include: *Teachers feel valued by society. Teachers have high morale.*

Prior teaching and learning experiences. The prior teaching and learning experiences factor included three items that asked respondents whether they have had good teachers, inspirational teachers as role models, and positive learning experiences. Though this variable had a negative relationship with intent to teach for all three examined groups, it was only statistically significant for the higher-achieving subsample. While one might expect that students who have had positive experiences with teachers and good learning experiences would be more interested in a teaching and learning focused career, this finding indicates that among higher-achieving students, those who rate their teachers and their learning experiences more highly are less likely to intend to pursue a teaching career. The qualitative data shed little light on this unexpected finding as participants did not describe their previous experiences with teachers and schooling environments as particularly influential factors in their teaching-related career decisions.

One possible explanation for the negative effect of positive teaching and learning experiences on high-achieving students' intent to teach is that inspirational teachers and positive past learning experiences might prompt these students to consider careers in the fields in which they exhibit strong skills rather than in teaching itself. For example, a high school physics teacher might encourage or inspire her most talented students to pursue careers in engineering or biomedicine rather than in physics education. This explanation challenges the common perception that particularly effective or inspirational teachers motivate their students, especially those who are academically talented, to consider teaching careers.

A second explanation for the negative prior teaching and learning finding among high-achieving students is that with high test scores and strong educational backgrounds,

these students might have a wider range of occupational options than lower-achieving students with less positive teaching and learning experiences, and thus may be less likely to intend to pursue a teaching career. A third explanation is that higher-achieving students are simply (a) more likely to report positive teaching and learning experiences and (b) less likely to intend to teach. Data from this study do not speak to these hypotheses, which require further investigation.

Non-significant factors. In addition to highlighting the statistically significant predictors of uncommitted prospective teachers' intent to teach, it is also important to note the many variables that did not demonstrate a significant effect in the regressions for any group. These variables included perceived cost, non-pecuniary benefits, social status, job security, task demand, race and sex. Though focus group data suggest that many of these variables have at least a minor effect on higher-achieving students' intentions to pursue a teaching career, quantitative results indicate that as conceptualized on the survey, they have a smaller effect than the statistically significant predictors.

Interestingly, although salary perceptions are often thought to be a leading deterrent to teaching and emerged as such in the qualitative and quantitative data for higher-achieving students, this variable did not have a statistically significant effect on intent to pursue a teaching career for the full uncommitted prospective teacher sample or the lower-achieving subsample. The lack of effect may be due to the three salary items on the survey asking whether teachers earn a "good income" or are "well paid" rather than asking if they earn enough money to support the respondents' particular lifestyle expectations. In other words, one might perceive that an occupation offers a "good" salary in the abstract but not one commensurate with his or her personal needs, values,

and/or expectations. The qualitative data support this hypothesis in that some focus group participants specified that while teachers earn an "average" income, it is insufficient to meet their financial needs and preferences, especially in geographic areas with a high cost of living. These conversations suggest that a more specific set of salary items comparing respondents' perceptions of teachers' salaries to their own salary expectations (e.g., "As a teacher, I would earn enough money to support my planned lifestyle after graduation") may have produced different response patterns among survey respondents.

Teacher Certification and Recruitment Policy Context

This study produced several key findings related to uncommitted prospective teachers' views on different avenues for teacher preparation (e.g., undergraduate- vs. graduate-level preparation, alternative certification) and their opinions about how to attract prospective teachers to the profession, particularly those who are academically-talented. Some of these findings confirm existing trends in the literature while others augment previous work.

Teacher certification. Undergraduate students who are uncommitted prospective teachers often have multiple options for teacher preparation. Quantitative findings indicate that graduate-level preparation was attractive to more survey respondents than undergraduate-level preparation, programs outside a college/university, and teaching without licensure. Qualitative results reveal, however, that students vary with regard to how informed they are about these various preparation options. Though the majority of the high-achieving students in the sample were familiar with Teach for America, their perceptions about the program were mixed and very few were aware of alternative preparation options beyond TFA.

Undergraduate vs. graduate-level preparation. This study's quantitative findings demonstrate that uncommitted prospective teachers, regardless of achievement level, find graduate-level teacher preparation more attractive than undergraduate-level preparation. As suggested in several focus group discussions, graduate-level preparation may be more attractive because it commands a higher starting teaching wage and/or appears more prestigious than the undergraduate degree, especially for high-achieving students.

Alternatively, graduate-level preparation may have been more appealing to survey respondents because 65 percent were either juniors or seniors at the time of the survey and may not have wanted to change their majors or extend their graduation time frame. This possibility is supported by qualitative and quantitative findings. Half of the survey respondents said a major or minor reason they have not pursued teacher certification at the undergraduate level is that they would not able to complete the courses required for certification within their graduation time frame. In addition, almost half (45%) said they have not enrolled because they can earn their teaching certificate through another program after graduation. Both of these responses can be read as curricular cost issues. Many of the classes required for teacher certification have a series of prerequisites that necessitate several concurrent semesters of enrollment to complete. A student who decides to prepare to teach in her senior year, therefore, might be better advised to finish her current major and enroll in a 12-month master's program instead of completing the requirements at the undergraduate level. Furthermore, curricular opportunity cost was a particularly salient issue for several high-achieving focus group participants who were unwilling to give up classes they were passionate about in their academic major to fit in teacher certification requirements. These students said that if they decided to teach in the

future, they would go back for a master's degree or seek out an alternative program such as Teach for America.

Alternative certification. Although all the high-achieving focus group participants were at least minimally familiar with Teach for America, quantitative findings indicate that the uncommitted prospective teachers in this study are more interested in preparation programs housed in higher education institutions than in alternative programs or teaching without certification. Qualitative findings paint a slightly more nuanced picture and reveal that many high-achieving students who are unsure about their future career plans and/or are interested in short-term teaching careers find Teach for America's prestige, reputation for selectivity, and promise of future networking connections appealing. High-achieving students who are seriously considering long-term teaching careers, however, may be more concerned about whether short-term alternative certification programs provide adequate training and ongoing support for the high-needs environments in which they often place teachers.

Attracting students to teaching. Although uncommitted prospective teachers appear to find all seven financial recruitment incentives presented on the survey attractive, the most highly-rated were increased starting salaries for teachers and performance-based pay. This emphasis on raising teacher salaries aligns with the findings of at least three other studies of undergraduate students (Kyriacou & Coulthard, 2000; Alt et al., 2007; Hiler & Hatalsky, 2014).

Teacher salaries appear to be especially important for high-achieving, uncommitted prospective teachers. Results from the regression analysis for the higher-achieving subsample in this study reveal that the higher these students' rated teachers'

salaries, the more likely they were to intend to pursue a teaching career. Furthermore, high-achieving students who participated in the focus groups also emphasized that a higher starting salary and more room for salary and professional growth would make teaching more attractive, especially because many of these students pay a financial opportunity cost when choosing teaching over a more lucrative profession. Despite survey respondents' interest in performance-based pay, focus group participants did not mention this policy lever as an effective way to recruit talented students to teaching careers. The lack of focus group discussion around performance pay may have been as much a reflection of their unfamiliarity with these policies as of their disinterest in them.

Among the set of financial incentives on the survey, those intended to supplement the cost of undergraduate teacher preparation were less attractive than salary incentives, though still over 90 percent of uncommitted prospective teachers said these initiatives would somewhat or definitely encourage them to teach. Higher-achieving students were less attracted to financial incentives for undergraduate education than other respondents, which may be because academically-talented students are more likely to have their undergraduate costs covered through merit-based financial aid. In addition, females appear to find student teaching stipends slightly more appealing than males. This finding could be a function of how seriously the respondents were considering a teaching career. If the females in the sample were likely to be more committed to the profession than the males, they would likely be more aware of the responsibilities student teachers assume and how a financial stipend could help offset lost wages.

High-achieving focus group participants also suggested several non-financial means of recruiting talented teachers, each of which remains unexplored in the extant

literature. These students emphasized that reducing the negative social stigma around teaching by having higher academic standards for the profession, recruiting more talented students, and emphasizing the social value of teachers would make the field more appealing. These suggestions reinforce the importance of occupational social status in decisions about teaching, especially for high-achieving students. Several participants who were seriously considering teaching also indicated that eliminating the practice of "teaching to the test" would increase teacher autonomy and make the profession more engaging. This view may be more prevalent among the generation of prospective teachers who were in the first K-12 student cohort to be impacted by major standards-based accountability policies. With regard to college-level curricular issues, focus group participants recommended having challenging, education-focused courses available to students early in their academic careers to help cultivate an interest in the field.

Summary of Limitations

While this research makes a substantive contribution to the existing literature on the factors that influence uncommitted prospective teachers' career decisions related to teaching, it has several limitations that should be considered. These limitations pertain to the institutional context and characteristics of the study sample, the sample size, study design and data analysis, focus group data collection, and the use of SAT scores as a measure of academic achievement and teacher quality.

Institutional Context and Characteristics of the Sample

Aspects of the institutional context and characteristics of the students I sampled determine the limits of the generalizability/transferability of this study's findings and the applicability of its recommendations. This investigation focused on students at one

selective,[45] Research 1, public university where the College of Education enjoys a moderate level of prestige and respect compared to other academic disciplines. This institution is located in the mid-Atlantic region of the United States where the cost of living is among the highest in the country. In addition, the public school districts in the areas surrounding the university vary widely in reputation.

Due to the difficulty in identifying uncommitted prospective teachers, the sample for this research was drawn from a convenience group of students enrolled in select education courses at the university. It is possible that this sampling strategy excluded a contingent of uncommitted prospective teachers majoring in STEM fields who may not enroll in education courses because of the limited room in their curricula for electives and/or an interest in teacher preparation programs outside the university.

The majority of survey and focus group participants were female, white, had junior or senior class standing, and were not majoring in education. The cutoff for determining "high-achieving" status for this study (combined critical reading and mathematics SAT $\geq$ 1200) was relatively high. The "high-achieving" cutoff was 30 points above the 75th percentile score (1170) of the nearly 15,000 Baccalaureate and Beyond survey respondents who earned their bachelor's degrees in 2008 and reported teaching at the K-12 level in 2012 (National Center for Education Statistics, 2014). In general, this study's participants, particularly those who took part in the focus groups, represent a relatively elite group of undergraduate students, many of whom appeared to be quite achievement-oriented. Their experiences, values, and teaching-related decision

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[45] The middle 50 percent of admitted freshmen for fall 2014 at this university scored between 1260 and 1410 on the SAT.

factors may not generalize to lower-achieving undergraduates or students who attend less selective colleges or universities.

In addition, compared to the overall undergraduate population at the university, the sampling strategy yielded a survey sample with an overrepresentation of white students and a slight underrepresentation of each racial/ethnic minority category except Hispanic. The focus group sample comprised an even greater overrepresentation of white students and an underrepresentation of Black or African American and Hispanic students. Both the survey and focus group samples had overrepresentations of females, but this might be expected given that women tend to be more attracted to education fields than men.

Students in the survey and focus group samples varied with regard to their commitment to teaching. Though all focus group participants indicated a current or past interest in teaching on the survey, some were more seriously considering teaching than others. Participants' degree of commitment to the field may also have affected study findings. For instance, participants who were more committed to teaching may have had more exposure to the K-12 environment and may have completed more teacher preparation coursework.

Sample Size

Although over 650 students completed the study survey, less than half of those respondents qualified as uncommitted prospective teachers and only about a fifth qualified as high-achieving, uncommitted prospective teachers. The moderate size of the sample may have affected the statistical power of the regression analyses to detect small effects among the many predictors and the outcome variable.

Study Design and Data Analysis

Because this investigation is cross-sectional, not longitudinal, it examines participants' *intentions* to pursue a teaching career rather than their actual career decisions. The benefit of this design is that it captures undergraduates' experiences, perceptions, and values while they are making important decisions about their academic majors and post-graduate plans rather than asking them to reflect upon their decisions in retrospect; however, the trade-off is that intentions may differ substantially from actions.

My decision to structure the study around Watt and Richardson's (2007) pre-existing theoretical framework and FIT-Choice scale enforced some design constraints. The FIT-Choice scale includes 17 subscales, each of which has only three survey items. While conducting the exploratory factor analyses for this study, several technical issues became apparent which prevented me from using some of the survey items in subsequent analyses. Specifically, I removed all the job transferability and social dissuasion items from the analysis because they had low inter-item correlations and low measure of sampling adequacy scores, respectively.[46] For this reason, neither of these two scales was included in the regression analyses. Excluding social dissuasion as a factor was particularly unfortunate given the emphasis focus group participants placed on the quantity of negative messages they heard about the profession. I also eliminated a quarter of the social utility item set due to high inter-item correlations.[47] This adjustment may have contributed to the remaining social utility items loading on one factor in the final

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[46] As recommended by Pett, Lackey and Sullivan (2003), I removed all job transferability items because they did not correlate at least |.40| with one or more other items in the analysis. I also removed all social dissuasion items because they had MSA scores ≤ |.70|, which indicated low inter-item correlations.

[47] I removed three social utility items that correlated ≥ |.80| with one or more other items in the analysis.

EFA rather than on separate factors as theoretically expected. Although each of these sets of item deletions was empirically advisable (Pett, Lackey & Sullivan, 2003), they may have resulted in fewer conceptually-distinct factors and prevented potentially valuable explanatory variables from being included in the regression analyses.

Focus Group Data Collection

This study also has limitations related to the focus groups. Two of the focus groups had only two or three participants, and one was an individual interview. The group nature of the method was limited in these small discussions, and non-existent in the interview; however, these more intimate conversations allowed each participant time to express his or her thoughts. In addition, because the survey item that identified uncommitted prospective teachers was an imperfect indicator of interest in teaching, most focus groups included one or more participants who were at least moderately committed to teaching. The presence of these individuals in each group may have affected the extent to which other participants candidly expressed their perceptions of the profession and may explain why few voiced a negative personal perception of teaching or teachers.

Use of SAT Scores

A final limitation concerns the use of standardized test scores as a single measure of academic achievement. Standardized tests are often correlated with demographic factors such as race and socioeconomic status and are limited by their inability to assess complex subject matter knowledge and pedagogical skills. Though standardized tests are an imperfect measure of teacher quality and student learning, they are of high interest to the education policy community, and they provide a standardized measure of academic achievement for large groups of students and teachers.

Recommendations

The results discussed in this chapter point to a series of recommendations for (a) future research on the factors that influence undergraduates' occupational decisions and (b) policies and practices aimed at recruiting talented individuals to K-12 teaching careers. It is important to note that the following recommendations are based on findings that emerged from a particular institutional context nested within a particular community, as previously described in the *Limitations* section of this chapter.

Future Research

This dissertation provides a solid foundation for our understanding of the important factors in uncommitted prospective teachers' decisions about teaching, particularly those of high-achieving undergraduate students; however, it also highlights several fruitful opportunities for additional research on the topic. Specifically, future research directed at refining the survey instrument used in this study, expanding study samples, utilizing different research designs and analytic strategies, and exploring the relationships among salary, social status, professional growth, self-perceptions and intent to teach would be empirically, theoretically, and practically informative.

Conceptual adjustments and instrument refinement. Further empirical work to identify and validate the theoretical constructs that contribute to undergraduates' teaching decisions could both inform policymakers' teacher recruitment decisions and add to the existing literature on how expectancy-value theory functions in occupational contexts.

In this investigation, a subjective task value concept (interest value), a self-perception concept (perceived teaching ability) and a socialization influence concept (social encouragement) loaded onto one factor in the exploratory factor analysis. This

multifaceted interest/ability/encouragement factor emerged as the most influential variable in the regression analyses. Because it is unique among the many studies that examine similar expectancy-value constructs in the preservice teacher population (e.g., Watt & Richardson, 2007; Watt et al., 2012), this factor warrants further investigation. Interested researchers might consider examining the relationships among these concepts and how they influence teaching-related career decisions for the uncommitted prospective teacher population.

Similarly, items from the four social utility subscales that Watt and colleagues (2007, 2012) found to be empirically distinct among preservice teachers (shape future of children/adolescents, enhance social equity, make social contribution, work with children and adolescents) loaded together onto one social utility factor in this study. As noted above, this investigation may have failed to differentiate among these subscales because I omitted several items due to high inter-item correlations or because of substantive differences in the preservice and uncommitted prospective teacher populations. Future studies might consider testing a larger bank of social utility subscale items so that if poor-performing items must be deleted, a sufficient number remain to differentiate among theoretically-distinct latent constructs. Using both exploratory and confirmatory factor analyses in an investigation of this type could also provide insight into whether all four social utility subscales contribute to a higher-order social utility factor for uncommitted prospective teachers. Results from the focus group discussions in this study suggest that an interest in working with children and adolescents may not be uniformly related to how socially valuable one finds a teaching career; thus, it might be interesting to examine the relationships between this and the other social utility subscales.

Researchers could also consider developing a series of survey items that assess respondents' task demand perceptions specifically related to the intellectual challenge of teaching. Although Watt and Richardson (2007) noted that they expected their two task demand subscales—expert career and workload—to be inversely related to interest in teaching, many focus group participants were intentionally seeking an intellectually challenging career. Intellectual challenge, therefore, may be a dimension of task demand that is positively related to intent to teach, especially for academically-talented prospective teachers.

Task return is a fourth area ripe for additional empirical attention. As previously mentioned, future work might investigate whether more personal salary items such as "*Teaching would provide an adequate salary for the type of lifestyle I plan to lead*" could capture respondents' perceptions of not just a teaching salary in general, but the fit between teaching and their salary expectations. These changes might result in stronger relationships between salary perceptions and teaching intentions for these populations.

A limitation of mine and Watt and colleagues' theoretical frameworks is that they do not fully account for the many psychological and sociological antecedent factors that Eccles and colleagues (1983) purport affect values, expectancies, and choices. These factors include the input of socializers (e.g., parents, teachers and peers), gender-role beliefs, self-perceptions and the self concept, and task perceptions, among others (Eccles [Parsons] et al., 1983, Eccles et al., 1999). Focus group findings from this study indicate that many high-achieving, uncommitted prospective teachers perceive that they are capable of and expected to pursue a field of study and a profession with high social status and financial returns. To extend this study's findings, investigators might further examine

how important socializers shape these academically-talented students' self-perceptions and their occupational goals, and how these students' self and task perceptions and goals subsequently impact their career choices.

Interested researchers might also consider adding survey items that address the self-perception costs associated with teaching that emerged during the focus group conversations by either incorporating identity-related items in the perceived cost subscale or constructing a new scale for attainment value. These items could focus on the potential of teaching to confirm salient self-perceptions, perhaps related to making a social contribution or securing a high-status, well-respected occupation.

To build on the results obtained from the qualitative portion of this research, future studies might specifically examine the complex relationships among salary, social status, professional growth and self-perceptions for high-achieving students. The qualitative findings suggest that these variables are related in ways that may produce a powerful effect on high-achieving students' teaching-related career decisions. Understanding how these concepts affect one another may lead to more effective teacher recruitment and retention initiatives.

Finally, self-concept of teaching ability (a component of the interest/ability/encouragement factor) and social utility value emerged as the most important predictors of intent to teach in the quantitative analyses, but were rarely discussed during the focus groups. In future qualitative inquiries similar to those in this study, researchers might ask participants more explicitly about if and how their self-concept of teaching ability and their social utility value for a teaching career affect their teaching career decisions. Assessing these aspects of the decision process more directly

might shed additional light on why these factors emerged as more influential in this study's quantitative than qualitative findings.

Research design and data analysis. One of the limitations to this study is that the moderate-sized sample of uncommitted prospective teachers who responded to the survey ($n = 294$) may have limited the statistical power of the regression analyses to detect smaller effects. To increase power, researchers could consider augmenting the sample of uncommitted prospective teachers who complete the survey, perhaps by including undergraduates from other institutions both similar and dissimilar to the university sampled in this study. Alternatively, future investigations might examine the effects of fewer factors to increase the power of analyses, or run EFAs on subsets of items (e.g., values, task perceptions, socialization influences) rather than the entire item set. Investigators might also consider paying careful attention to recruiting men and racial/ethnic minority students for future quantitative and qualitative inquiries because both groups were underrepresented in this study. These adjustments to the study sample would likely increase statistical power and improve the generalizability/transferability of findings.

In addition to changing the size and makeup of the study sample, scholars could also explore this topic using different analytic methods or research designs. For instance, researchers might examine whether using a quantitative analytic technique other than ordinal logistic regression, such as confirmatory factor analysis, yields similar results. Another option is a longitudinal study of undergraduate uncommitted prospective teachers that assesses the factors that predict their intentions to teach during their undergraduate careers as well as their actual occupational choices after graduation.

Although the regression analyses in this study did not identify a statistically significant link between social status and intent to teach, focus group participants portrayed this construct as very influential in their teaching-related career decisions. As discussed above, this lack of effect may be caused by a confounding relationship between social status and knowledge about or experience with K-12 teaching. That is, individuals who are interested in and/or preparing to teach may have more exposure to the K-12 environment, which may foster more negative perceptions about implications of educational policies and politics on teachers' social status. Controlling for experience in schools or relationships with teachers would help explore this hypothesis.

Policy and Practice

Results from the quantitative portion of this study indicate that uncommitted prospective teachers with high SAT scores, positive prior learning experiences and good teachers, low social utility value for teaching, and low interest/ability/encouragement in teaching will be the especially difficult to recruit to K-12 careers. Research suggests, however, that some of these high-achieving individuals may have the potential to positively influence student achievement. Their status as being among the "best and brightest" might also bring increased prestige and respect to teaching if they can be recruited to careers in the classroom. Policymakers and higher education administrators, therefore, should be motivated to develop policies and practices that make teaching more attractive for these students. Findings from both the quantitative and qualitative portions of this study point to a set of potential recruitment recommendations for each of these constituencies. While this investigation does not examine extant literature pertaining to

the efficacy of the following recommendations, it does provide empirical support for further research in these areas.

Higher education administrators. According to this study's findings, administrators in schools of education might consider taking several steps to increase students' commitment to teaching by engaging their interest in the profession early, working to combat negative messages about teaching, and creating unique learning opportunities for high-achieving students.

All students have substantial exposure to the K-12 learning environment; consequently, many think they know what it means to be a teacher, and their perceptions are not always flattering. Notably, the focus group participants in this study who were preparing to teach and had completed education courses and/or student teaching experiences, found teaching to be more cognitively demanding than they expected. For these students, preparing to teach exposed them both to the challenge of conveying abstract ideas to children and the complexity of the educational system. Though this finding suggests that engaging education courses might have the potential to spark students' respect for and interest in the field, several focus group participants noted that at least at the institution examined in this study, students have few opportunities to enroll in education courses unless they are already education majors. Universities might help thwart the "those who can't do, teach" mentality by offering challenging lower-level general education courses that are not restricted to students currently studying education. Ideally, these courses could be taught by engaging faculty and could allow students an opportunity to practice or observe teaching. This type of interesting, rigorous experience might reframe some of the negative messages students hear about the ease of the field

while strengthening students' perceived teaching ability by allowing them exposure to the classroom.

Schools of education might consider embedding these freshman or sophomore-level courses into a broader co-curricular program, such as a learning community, that focuses on K-12 education and targets high-achieving students. One of the barriers to teaching for these students is their perception that education is an easy major that fails to engage their academic potential and often enrolls less-talented students. A selective co-curricular program especially for strong students might create a level of prestige around teaching that satisfies these students' desire to differentiate themselves from the general student population while providing a community of peer and faculty support and encouragement around teaching. Like other co-curricular programs, this initiative could expand upon an existing course or major curriculum by incorporating experiences outside the postsecondary classroom, such as opportunities to volunteer in K-12 schools and attend seminars or events related to teaching and education policy. Results from this study suggest that messages about teaching can be quite influential for these students. Administrators and faculty members responsible for this program might work to provide high-achieving participants with mentors who encourage their interest in the field and deliver honest, balanced messages about the challenges and benefits of teaching.

In addition, university personnel could focus on recruiting interested students to teacher preparation early in their post-secondary careers to help them plan for the many sequential courses they need for certification while also offering the option of completing a degree in another discipline. Results from this study reveal that curricular cost issues are a major or minor reason why half of undergraduates who are interested in teaching do

not complete certification requirements at the undergraduate level. The substantial number of AP/IB and transfer credits most freshman bring to college can help with degree planning by offering curricular flexibility and often, room for a double major in a four-year time frame. Academic affairs professionals might capitalize on this flexibility by providing information at orientation or in targeted first- and second-year courses about how to balance bachelor's-level teacher certification courses (where available) with a major in the student's selected academic discipline.

Policymakers. This research suggests two potential recommendations for policymakers who seek to recruit talented K-12 educators. The first recommendation is to consider launching a marketing campaign to combat the many negative messages about teaching that millennial students often hear. These students were among the first K-12 group to be ushered through the teacher accountability policies implemented in the *No Child Left Behind* legislation and were also in their middle and high school years when the economy crashed and The Great Recession left states and school districts cutting budgets and reducing staff. Coupled with the discouraging messages that already abound about the profession's low pay and low social status, many of these students heard the implicit or explicit message that teachers are forced to "teach to the test," that they are often political "scapegoats," and that their jobs are unstable and their benefits are diminishing. If there were a time to focus on rebuilding the image of teaching as a desirable profession, now is likely it. This marketing campaign might highlight avenues for advancement through teaching and K-12 education and the potential for salary growth. Because many individuals in the millennial generation and beyond plan to have more than one career in their lifetime, the campaign might highlight the range of skills

teachers gain and how these skills might transfer to other closely-related occupations such as educational technology, curriculum development, administration, and policy.

The second potential policy recommendation emerging from this study is to consider renewing the effort to develop a teaching career ladder. While the high-achieving students in this study acknowledged that teachers' starting salaries are comparable to those of the other occupations they were considering, they perceived that salary growth in teaching is minimal, and the profession provides rare opportunities for promotion or substantial salary increases. In general, high-achieving students are competitive achievers who enjoy challenge, advancement, and rewards for excellence, but focus group participants in this study perceived that teaching offers little in the way of these important occupational characteristics. To attract talented prospective teachers to the field, these individuals need to perceive that teaching affords financial benefits commensurate with their skills as well as opportunities for promotion and professional growth. Although policymakers have attempted many initiatives aimed at improving this aspect of teaching including myriad permutations of performance pay and career ladders that have produced only small and mixed results, findings from this research reinforce the importance of professional growth to teacher recruitment.

Current and former teachers and collegiate instructors. The final potential recommendation emerging from this study pertains to current and former K-12 teachers and postsecondary faculty teaching in colleges of education. Many focus group participants recounted hearing discouraging messages about teaching from former teachers, family and friends who currently teach or have previously taught, and occasionally from college-level education course instructors. While every professional

has frustrating aspects of his/her career, teachers and collegiate instructors have a uniquely large audience of up to hundreds of youths and young adults who are at an impressionable stage of their occupational decision-making processes. Teachers and instructors might consider being increasingly mindful of the fact that their students often remember the negative comments they make about their jobs in class or on social media. While not every student who considers a career in social work, for instance, has daily access to a social worker who occasionally shares the ups and downs of her career, they do interact almost every day with their teachers and instructors. The onus is on these educators, then, to present a balanced and professional portrayal of a teaching career, to the extent possible.

Conclusion

This investigation led to several conclusions that expand upon existing literature and provide empirical support for actionable policy, practice and future research. The quantitative analysis of survey data from uncommitted prospective teachers identified three significant predictors of these undergraduates' intentions to pursue a teaching career: SAT score, interest/ability/encouragement (interest in teaching, perceived teaching ability, and social encouragement to teach), and social utility (how socially useful one finds teaching).

Quantitative and qualitative data on high-achieving, uncommitted prospective teachers specified several factors that are particularly influential in these students' teaching-related decisions. Regression analyses revealed that salary perceptions, social utility value, prior teaching and learning experiences, and interest/ability/encouragement all have statistically significant relationships with high-achieving students' teaching

intentions. Focus group discussions identified dissuading messages about teaching, as well as perceptions about teacher salary, opportunities for professional growth in the field, the social status of the teaching profession, and respect for teachers as the most influential factors in whether these students choose to teach. Future research should explore the complex relationships among salary, social status, professional growth, and self-perceptions within this population.

Another important finding of this study is that uncommitted prospective teachers are often deterred from earning their teaching certification at the undergraduate level (where it's available) because they do not have time to complete their initial academic major and teacher certification requirements within their desired graduation time frame. High-achieving students are also dissuaded from majoring in education because they perceive it to be an easy major that leads to a career with a low salary, minimal room for professional growth, and little social prestige. These findings provide justification for policymakers to continue efforts to develop effective career ladder and performance pay initiatives for teachers. Higher education administrators may also have the potential to mitigate some of the academic planning and perception issues by sparking promising prospective teachers' interest in teaching during their early undergraduate years through engaging, rigorous introductory education courses and degree planning initiatives.

Results from this study lay a strong foundation upon which to build future knowledge about the factors that influence whether interested undergraduates, especially those who are academically-talented, choose careers in teaching. This investigation also produced empirically-sound data to support new or ongoing teacher recruitment initiatives within higher education institutions or at broader policy levels.

APPENDIX A: Definition of Terms

Academic achievement is the capacity to perform educational tasks. These tasks are often cognitive in nature, meaning they draw on perception, memory, acquisition of knowledge and expertise, comprehension and production of language, problem solving, creativity, decision making, and reasoning (Kellogg, 1995). Academic achievement is frequently measured in a school or collegiate setting by written assessments such as standardized tests or cumulative measures of performance such as teacher-assigned grades or grade point averages. In this study, I use college entry exam scores (SAT/ACT) as the measure of academic achievement.

Attainment value is the importance once ascribes to doing well on a task (Eccles [Parsons] et al., 1983).

Expectancies for success are an individual's beliefs about how well he or she will perform on particular tasks or activities (Eccles & Wigfield, 2002).

Inservice teachers are individuals who are employed as public, K-12 classroom teachers.

Interest value is determined by the enjoyment one anticipates experiencing if he or she were to engage in a particular activity or behavior.

Perceived cost is the perceived direct or indirect financial, emotional, or opportunity cost associated with a behavior option.

Personal utility value is the extent to which a task or career allows an individual to meet his or her short- or long-term personal goals.

Preservice teachers are students who are currently preparing to become teachers. Preservice teachers might be graduate or undergraduate students who are enrolled in a teacher preparation program that may or may not be affiliated with a university.

Prospective teachers are individuals who are considering or planning for a career in teaching have not yet assumed a teaching position. Prospective teachers who are enrolled in a teacher preparation program are also referred to as preservice teachers. Prospective teachers who are interested in a career in teaching but are not enrolled in a teacher preparation program, and may not be fully committed to the career in general, are referred to as uncommitted prospective teachers. Prospective teachers, whether preservice or uncommitted, can be undergraduate or graduate students, or mid-career adults.

Self-concept of ability reflects an individual's broad perceptions about his or her current competence at a given activity (Eccles [Parsons] et al., 1983; Wigfield, 1994). Whereas expectancies for success are defined as an individual's beliefs about his or her *future* performance, self-concept of ability is one's perception of his or her *current* competence (Wigfield & Eccles, 2000).

Perceived teaching ability is one's belief about how well he or she would perform the general task of teaching.

Social utility value is the extent to which a career or task allows an individual to meet his or her short- or long-term social goals.

Subjective task values are the incentives or reasons for engaging in a particular activity (Eccles & Wigfield, 2002) and they are determined by how a task meets different needs of particular individuals (Wigfield, 1994). Eccles (2005) has also described subjective

task values as the qualities of a task that "contribute to the increasing or decreasing probability an individual will select it" (p. 109). In the Eccles model, subjective task values are a function of four major subcomponents: (1) attainment value; (2) interest value; (3) utility value; and (4) perceived cost.

Task demand is the term Watt and Richardson (2007) use for Eccles' and Wigfield's term "task difficulty" (defined below). This study also uses the term task demand as synonymous with task difficulty.

Task difficulty refers to an individual's perception of how challenging a particular task or activity will be and how much effort will be required to complete it (Eccles & Wigfield, 1995).

Task perceptions are an individual's perceptions about a particular task or career. This study measures perceptions of task demand and task return.

Task return is an individual's perception of how a particular task or career is rewarded. This study measures the extent to which individuals perceive that teaching is a career with high social status, high morale, and a competitive salary

Uncommitted prospective teachers are individuals who have some degree of interest in a teaching career, but are uncertain as to whether they will teach in the future. The uncommitted prospective teachers in this study are all undergraduate students who communicated their degree of interest in teaching by their responses on this study's survey.

Utility value is determined by the potential of a task, activity, or choice option to facilitate one's short- or long-term goals or to allow one to acquire desired immediate or long-range external rewards (Eccles, 2011).

APPENDIX B: Development of Data Sources

Research Question	Higher-Order Construct	Sub-construct	Questionnaire Item	Focus Group Question
Identifiers/Linking Variables			1. UID 2. Name 3. E-mail	1. Let's start by having everyone state their name and major.

Responses to Intent to Teach questions were used to (a) answer research questions 1 and 2; (b) direct respondents to appropriate questions throughout the survey; and (c) identify potential focus group participants.	Outcome Variable: Intent to Teach		4. Please circle that number that best corresponds with the likelihood that you will either teach or prepare to teach at the k-12 level after earning your bachelor's degree. (7-point scale, labeled "Extremely unlikely," "Very Unlikely," "Unlikely," "Am Not Sure," "Likely," "Very Likely," "Extremely Likely.")	2. Please tell me about your current career plans for after graduation.
				
				3. Please describe your interest in a teaching career.
				  a. [*Prompt*] Is teaching a career you have considered in the past or are currently considering?
				  b. [*Prompt*] How has your interest in becoming a teacher evolved over time?

			5. Which of the following best describes your current interest in a teaching career?
			  a. I am not currently and have never considered a career in teaching.
			  b. I have considered a career in teaching in the past, but am not currently considering it.
			  c. I may consider teaching as a future career, but I'm not planning to teach after graduation.
			  d. Teaching or preparing to teach is one of multiple career options I'm considering for after graduation.	

			e. Assuming I get a teaching job, I will definitely teach immediately after graduation or after I earn my teacher certification.	
			6. If you were to become a teacher, which of the following subjects and grade levels would be of most interest to you? a. Early Childhood Education (pre-K through 3rd grade) b. Elementary Education (1st-6th grade) c. Middle School Math or Science (4th-9th grade) d. Middle School English Language Arts or Social Studies (4th-9th grade) e. 7th-12th grade Math or Science f. 7th-12th grade English, History, Geography or Social Studies g. Special Education (any grade level) h. Other	
Stem for questions 7-57: "Please indicate the degree to which you agree or disagree with each of the following statements:" *[7-point scale, 3 labeled points: Strongly Agree, Neither Agree nor Disagree, Strongly Disagree]*				
1. To what extent are uncommitted prospective teachers' intentions to pursue a teaching career related to:	Socialization influences	Social dissuasion	7. Others have encouraged me to pursue careers other than teaching. [†] 8. Others told me teaching was not a good career choice. [†] 9. Others influenced me to consider careers other than teaching. [†]	4. What sorts of messages do you hear from your friends, family and/or other important people in your life about a career in teaching?

1a. Messages they receive about teachers and a teaching career, and their previous teaching and learning experiences.		Social encouragement	10. My friends think I should become a teacher. [†] 11. My family thinks I should become a teacher. [†] 12. People I have worked with think I should become a teacher. [†]	
		Prior teaching and learning experiences	13. I have had inspirational teachers. [†] 14. I have had good teachers as role models. [†] 15. I have had positive learning experiences. [†]	
1b. Their self-concept of teaching ability.	Self-concept of teaching ability		16. I have the qualities of a good teacher. [†] 17. I believe I would have good teaching skills. [†] 18. Teaching is a career suited to my abilities. [†] 19. If I were to complete the necessary preparation (i.e. coursework and student teaching), I think I would be a good teacher. 20. I think I would be a good teacher even without teacher preparation (i.e. coursework and student teaching).	
1c. Their task perceptions of teaching (i.e., perceptions about	Task demand		21. If I were a teacher, I would have a heavy workload. [†] 22. Teaching would be emotionally demanding. [†] 23. Teaching would be hard work. [†]	

task demand and task return).	Task return	Social status and teacher morale	24. Teachers are perceived as professionals. † 25. Teaching is perceived as a high-status occupation. † 26. Teaching is a well-respected career. † 27. Teachers have high morale. † 28. Teachers feel valued by society. † 29. Teachers feel their occupation has high social status. †	
		Salary	30. Teaching is well paid. † 31. Teachers earn a good salary. † 32. Teaching offers opportunities for promotion and career growth.	
1d. Their subjective task values for a teaching career (interest value, personal utility value, social utility value, and perceived cost).	Interest value		33. I am interested in teaching. † 34. I have always wanted to be a teacher. † 35. I believe I would like teaching. †	5. When you think about your future career, what kinds of features would you ideally like it to have? [if necessary—When I say "features," I'm referring to benefits such as wages, vacation time, health care and retirement benefits, working environment, co-workers, etc. Could also have a card with various "features" available for them to discuss.] 6. Which of these features are "musts"? In other words,
	Personal utility value	Job security	36. Teaching would offer me a steady career path. † 37. Teaching would provide me with a reliable income. † 38. Teaching would be a secure job for me. †	
		Non-pecuniary benefits	39. Teaching is an attractive profession for me because it would fit with the responsibilities of having a family. † 40. I value that if I were a teacher, school holidays would fit in with family commitments. † 41. I like the idea that if I were a teacher I would have lengthy holidays. †	

		42. It is attractive to me that if I were a teacher, I would have a short workday. [†]	which are the most important aspects of your future career?
			
			7. How does a career as a teacher stack up to your other career options with regard to these "must" features?
			  a. [Prompt] What specific aspects of teaching make it an attractive career for you?
			  b. [Prompt] What specific aspects of teaching make it unattractive to you?

Social utility value	Enhance social equity	43. I would consider/am considering teaching because it would allow me to raise the ambitions of under-served youth. [†] 44. Teaching is an attractive profession for me because it would allow me to benefit the socially disadvantaged. [†] 45. I like the idea that teaching would allow me to work against social disadvantage. [†]	
	Make social contribution	46. Teaching is an attractive profession for me because it would allow me to provide a service to society. [†] 47. I would consider/am considering teaching because teachers make a worthwhile social contribution. [†] 48. I like the idea that teaching would enable me to give back to society. [†]	
Perceived cost		49. I would make less money in teaching than in my other career options. 50. I would have to accumulate student loan debt to prepare to teach.* 51. If I had to forego income from another job in order to teach, it would be worth it. 52. Preparing to become a teacher would require a lot of time.	

| | | 53. Preparing to teach sounds like it requires more effort than I'm willing to put into it.*
 54. When I think about the work required to become a teacher, I'm not sure it's worth it in the end.*
 55. It seems that teachers have such a heavy workload they can't do other activities.
 56. Having a teaching job would take too much time away from other activities that are important to me.
 57. The amount of effort it would take to be a good teacher is not worth it to me. | |
| 2. How do the relationships between the expectancy-value factors outlined in question one and intent to pursue a teaching career affect higher-achieving, uncommitted prospective teachers, in particular? | *Note: All items pertaining to research question one were used to answer research question two (in conjunction with institutional data on respondents' SAT/ACT test scores).* | |

3. What reasons do uncommitted prospective teachers give for not pursuing teacher certification while completing their bachelor's degree?	Teacher Certification	58. Are you currently enrolled in a teacher preparation program at [this university]? [Yes, No]
		
		59. Have you considered majoring in education or earning your teaching certificate from the [this university]? [Yes, No]
		
		60. Please indicate the degree to which each of the following reasons explains why you are not currently pursuing teacher certification at [this university]. [7-point scale, 3 labeled points: Major Reason, Minor Reason, Not a Reason]
		  a. I have not applied yet
		  b. I was not accepted into my preferred teacher certification program at [this university].
		  c. I would not be able to complete all the courses necessary for certification and still graduate in my desired time frame.
		  d. The courses required for teacher certification did not seem interesting.
		  e. The courses required for teacher certification seemed too easy.
		  f. I can earn my teaching certificate after graduation through another program.
			8. For those of you who will probably decide not to become a teacher, what factors will influence your final decision?
			
			9. All of you have indicated that at some point, you have considered a career in teaching. Did you think about majoring in Education at [UNIVERSITY][48] and earning your teaching license while you complete
			
			10. Why did you decide not to pursue your teaching license while an undergraduate here at [UNIVERSITY]?

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[48] All instances of the university name on the survey and in the focus group protocol have been redacted to promote institutional anonymity.

		g. I can teach after graduation without certification. h. I'm not sure in which state I would eventually want to teach, so I don't want to earn my certificate in [STATE]. i. I'm not sure I want to teach. j. Other reason, please list. (box)	
4. What types of policies and/or incentives might encourage high-achieving uncommitted prospective teachers to become teachers?		61. If you decided to become a teacher, which of the following certification routes would be of interest to you? [Check all that apply] a. A college or university-based, undergraduate-level teacher education program b. A college or university-based, graduate-level teacher education program	11. If you decided to become a teacher at some point in your life, what sort of teacher preparation route would you choose and why? [*Note: Explain "teacher preparation route" as needed*]

		c. A teacher certification program based outside a college or university (e.g., Teach for America) d. No certification route; I would teach in a private school 62. If you decided to become a teacher and were selecting a teacher certification program, please rate how important each of the following characteristics would be: [7-point scale, 3 labeled points: Extremely Important, Somewhat Important, Not At All Important] a. Program is short b. Program has a strong reputation c. Program is affordable d. Program is high quality e. Program is offered at a college/university f. Program has a lengthy student teaching experience g. Program has a short student teaching experience	12. What policies, programs, incentives or other changes might make teaching a more attractive career for students like you? a. [*Prompt*] Specific Financial Incentives b. [*Prompt*] Alternative certification
	Financial incentives	63. Please indicate the degree to which each of the following policy initiatives would encourage you to pursue a career in teaching. [7-pt scale, 3 labeled points: Not At All Encourage, Somewhat Encourage, Definitely Encourage) a. An undergraduate scholarship to earn teacher certification b. Reduced or free tuition for undergraduate courses required for teacher certification	

		c. A scholarship to earn a master's degree in teaching d. A stipend (small salary) for time spent student teaching e. Higher starting salaries for teachers f. Teacher salaries or bonuses based on teacher performance g. Student loan forgiveness programs for teachers 64. How much do you think the average new teacher makes in the [STATE]? a. $25,000-$35,000 b. $35,000-$45,000 c. $45,000-$55,000 d. $55,000-$65,000 e. more than $65,000 65. How much would the beginning salary need to be for you to seriously consider teaching? a. $25,000-$35,000 b. $35,000-$45,000 c. $45,000-$55,000 d. $55,000-$65,000 e. more than $65,000	

Note: Items marked with (†) are adapted from the FIT-Choice scale (Watt & Richardson, 2007). Items marked with (*) are adapted from Battle and Wigfield (2003)

APPENDIX C: Survey

Name: _____

E-mail address: _____

UID#: _____

> Your name and/or UID will be used to link your survey responses to academic (major and SAT/ACT scores) and demographic (race/ethnicity, gender) information maintained by [the university]. Your information will remain confidential, as detailed on the consent form.

Please circle the number that best corresponds with the extent to which you disagree or agree with each of the following statements.

	Strongly Disagree		Neither Agree nor Disagree			Strongly Agree	
Others have encouraged me to pursue careers other than teaching.	1	2	3	4	5	6	7
My friends think I should become a teacher.	1	2	3	4	5	6	7
My family thinks I should become a teacher.	1	2	3	4	5	6	7
People I have worked with think I should become a teacher.	1	2	3	4	5	6	7
I have had inspirational teachers.	1	2	3	4	5	6	7
I have had good teachers as role models.	1	2	3	4	5	6	7
I have had positive learning experiences.	1	2	3	4	5	6	7
Others told me teaching was not a good career choice.	1	2	3	4	5	6	7
I have the qualities of a good teacher.	1	2	3	4	5	6	7
I believe I would have good teaching skills.	1	2	3	4	5	6	7
Teaching is a career suited to my abilities.	1	2	3	4	5	6	7
Others influenced me to consider careers other than teaching.	1	2	3	4	5	6	7
If I were a teacher, I would have a heavy workload.	1	2	3	4	5	6	7
Teaching would be emotionally demanding.	1	2	3	4	5	6	7
Teaching would be hard work.	1	2	3	4	5	6	7
If I were to complete teacher preparation (i.e., coursework and student teaching), I think I would be a good teacher.	1	2	3	4	5	6	7
I think I would be a good teacher even without teacher preparation (i.e., coursework and student teaching).	1	2	3	4	5	6	7

Please check the box (e.g., ⊠ , ☑, ■) that corresponds with your response.

How much do you think the average *new* teacher makes in the [STATE]?

- ☐ $25,000-$35,000
- ☐ $35,000-$45,000
- ☐ $45,000-$55,000
- ☐ $55,000-$65,000
- ☐ more than $65,000

How much would the beginning salary need to be for you to seriously consider teaching?

- ☐ $25,000-$35,000
- ☐ $35,000-$45,000
- ☐ $45,000-$55,000
- ☐ $55,000-$65,000
- ☐ more than $65,000

Please circle the number that best corresponds with the extent to which you disagree or agree with each of the following statements.

	Strongly Disagree		Neither Agree nor Disagree			Strongly Agree	
Teachers are perceived as professionals.	1	2	3	4	5	6	7
Teaching is perceived as a high-status occupation.	1	2	3	4	5	6	7
Teaching is a well-respected career.	1	2	3	4	5	6	7
Teachers have high morale.	1	2	3	4	5	6	7
Teachers feel valued by society.	1	2	3	4	5	6	7
Teachers feel their occupation has high social status.	1	2	3	4	5	6	7
Teaching is well paid.	1	2	3	4	5	6	7
Teachers earn a good salary.	1	2	3	4	5	6	7
Teaching offers opportunities for promotion and career growth.	1	2	3	4	5	6	7
I am interested in teaching.	1	2	3	4	5	6	7
I have always wanted to be a teacher.	1	2	3	4	5	6	7
I believe I would like teaching.	1	2	3	4	5	6	7
Teaching would offer me a steady career path.	1	2	3	4	5	6	7
Teaching would provide me with a reliable income.	1	2	3	4	5	6	7
Teaching would be a secure job for me.	1	2	3	4	5	6	7
Teaching is an attractive profession for me because it would fit with the responsibilities of having a family.	1	2	3	4	5	6	7
I value that if I were a teacher, school holidays would fit in with family commitments.	1	2	3	4	5	6	7
I like the idea that if I were a teacher I would have lengthy holidays.	1	2	3	4	5	6	7
It is attractive to me that if I were a teacher I would have a short workday.	1	2	3	4	5	6	7

I would consider/am considering teaching because it would allow me to raise the ambitions of under-served youth.	1	2	3	4	5	6	7
Teaching is an attractive profession for me because it would allow me to benefit the socially disadvantaged.	1	2	3	4	5	6	7
I like the idea that teaching would allow me to work against social disadvantage.	1	2	3	4	5	6	7

Please circle the number that best corresponds with the likelihood that you will either teach or prepare to teach at the K-12 level after earning your bachelor's degree.

Extremely Unlikely	Very Unlikely	Unlikely	Am Not Sure	Likely	Very Likely	Extremely Likely
1	2	3	4	5	6	7

Please circle the number that best corresponds with the extent to which you disagree or agree with each of the following statements.

	Strongly Disagree			Neither Agree nor Disagree			Strongly Agree
Teaching is an attractive profession for me because it would allow me to provide a service to society.	1	2	3	4	5	6	7
I would consider/am considering teaching because teachers make a worthwhile social contribution.	1	2	3	4	5	6	7
I like the idea that teaching would enable me to give back to society.	1	2	3	4	5	6	7
I would make less money in teaching than in my other career options.	1	2	3	4	5	6	7
I would have to accumulate student loan debt to prepare to teach.	1	2	3	4	5	6	7
If I had to forego income from another job in order to teach, it would be worth it.	1	2	3	4	5	6	7
Preparing to become a teacher would require a lot of time.	1	2	3	4	5	6	7
Preparing to teach sounds like it requires more effort than I'm willing to put into it.	1	2	3	4	5	6	7
When I think about the work required to become a teacher, I'm not sure it's worth it in the end.	1	2	3	4	5	6	7
It seems that teachers have such a heavy workload they can't do other activities.	1	2	3	4	5	6	7
Having a teaching job would take too much time away from other activities that are important to me.	1	2	3	4	5	6	7
The amount of effort it would take to be a good teacher is not worth it to me.	1	2	3	4	5	6	7

Please indicate the degree to which each of the following policy initiatives would encourage you to pursue a career in teaching.

	Not At All Encourage			Somewhat Encourage		Definitely Encourage	
An undergraduate scholarship to earn teacher certification	1	2	3	4	5	6	7
Reduced or free tuition for undergraduate courses required for teacher certification	1	2	3	4	5	6	7
A scholarship to earn a master's degree in teaching	1	2	3	4	5	6	7
A stipend (small salary) for time spent student teaching	1	2	3	4	5	6	7
Higher starting salaries for teachers	1	2	3	4	5	6	7
Teacher salaries or bonuses based on teacher performance	1	2	3	4	5	6	7
Student loan forgiveness programs for teachers	1	2	3	4	5	6	7

Which of the following best describes your interest in a K-12 teaching career? [Select only one response]

☐ I am not currently and have never considered a career in teaching. *(Survey complete! Please provide your name and UID on page 1.)*

☐ I have considered a career in teaching in the past, but am not currently considering it.

☐ I may consider teaching as a future career, but I'm not planning to teach after graduation.

☐ Teaching or preparing to teach is one of multiple career options I'm considering for after graduation.

☐ Assuming I get a teaching job, I will definitely teach immediately after graduation or after I earn my teacher certification.

Are you currently enrolled in a teacher preparation program at [this university]?

☐ Yes   *(Survey complete! Please provide your name and UID on page 1.)*

☐ No

If you were to become a teacher, which of the following subjects and grade levels would be of most interest to you?

☐ Early Childhood Education (pre-K through 3rd grade)

☐ Elementary Education (1st-6th grade)

☐ Middle School Math or Science (4th-9th grade)

☐ Middle School English Language Arts or Social Studies (4th-9th grade)

☐ 7th-12th grade Math or Science

☐ 7th-12th grade English, History, Geography or Social Studies

☐ Special Education (any grade level)

☐ Other

If you decided to become a teacher, which of the following certification routes would be of interest to you? [Check all that apply]
- ☐ A college or university-based, undergraduate-level teacher education program
- ☐ A college or university-based, graduate-level teacher education program
- ☐ A teacher certification program based outside a college or university (e.g., Teach for America)
- ☐ No certification route; I would teach in a private school

If you decided to become a teacher and were selecting a teacher certification program, please rate how important each of the following program characteristics would be.

	Not at all Important		Somewhat Important			Extremely Important	
Program is short	1	2	3	4	5	6	7
Program has a strong reputation	1	2	3	4	5	6	7
Program is affordable	1	2	3	4	5	6	7
Program is high quality	1	2	3	4	5	6	7
Program is offered at a college/university	1	2	3	4	5	6	7
Program has a lengthy student teaching experience	1	2	3	4	5	6	7
Program has a short student teaching experience	1	2	3	4	5	6	7

Have you considered majoring in education or earning your teaching certificate from [this university]?
- ☐ Yes
- ☐ No

Please indicate the degree to which each of the following reasons explains why you are not currently pursuing teacher certification at [this university].

	Not a Reason			Minor Reason			Major Reason
I have not applied yet.	1	2	3	4	5	6	7
I was not accepted into my preferred teacher certification program at [this university].	1	2	3	4	5	6	7
I would not be able to complete all the courses necessary for certification and still graduate in my desired time frame.	1	2	3	4	5	6	7
The courses required for teacher certification did not seem interesting.	1	2	3	4	5	6	7
The courses required for teacher certification seemed too easy.	1	2	3	4	5	6	7
I can earn my teaching certificate after graduation through another program.	1	2	3	4	5	6	7

I can teach after graduation without certification.	1	2	3	4	5	6	7
I'm not sure in which state I would eventually want to teach, so I don't want to earn my certificate in [STATE].	1	2	3	4	5	6	7
I'm not sure I want to teach.	1	2	3	4	5	6	7
Other (please list):							

Thank you for completing this survey!

APPENDIX D: Focus Group Protocol

Focus Group Script

Hello everyone and welcome. My name is Amanda Bowsher and I am a doctoral student and researcher in the Education Policy Studies department at [UNIVERSITY]. I will be moderating our discussion today about your career decisions and your perceptions of a career in teaching. This focus group is part of a larger study that involves several focus groups with students like yourselves as well as the survey you completed in your [insert course]. I'm going to read the following information from a script to ensure that I communicate all of the necessary information about our discussion.

This is a focus group, which is a research method useful for gaining information about a topic in a comfortable environment. As participants, I ask you to maintain the confidentiality of today's discussion and not share the content with anyone outside the focus group. With your permission, I will be tape recording the session so that the notes will accurately reflect the conversation. Your identity will be kept confidential. Later, I will analyze your responses and report them, no names included, in my dissertation, which will be read by faculty at [University of Maryland] and may be published for the larger Education research community.

Now I would like you to write the name you would like to be called by today on both sides of the card in front of you. These are the names we will use to talk with each other during today's session, but they need not be your real name.

In order for our discussion to be productive, I ask that you speak clearly and one at a time, and that you think about the questions and answer candidly. Keep in mind that you don't have to answer every question. While at times you may disagree with the comments made by others, please respect their right to say what they think. At this point, if you would like to leave and not participate in the focus group, feel free to do so now. [IF ANYONE GETS UP, THANK THEM FOR THEIR TIME.]

Now I will distribute a consent form about this project. [DISTRIBUTE CONSENT FORM AND GIVE TIME TO READ AND SIGN]. Please take a few minutes to read this form and if you feel comfortable doing so, sign the form indicating that you understand the purpose and procedure of this study, and that you agree to participate. [HAVE PARTICIPANTS RETURN SIGNED INFORMED CONSENT FORMS. IF ANYONE DOES NOT WANT TO SIGN, AND CHOOSES TO LEAVE, THANK THEM FOR THEIR TIME.]

Guiding Questions for Focus Group Protocol Development

General Questions

1. Let's start by having everyone state their name and major.

2. Please tell me about your current career plans for after graduation.

Interest in Teaching

3. Please describe your interest in a teaching career.
    a. [*Prompt*] Is teaching a career you have considered in the past or are currently considering?
    b. [*Prompt*] How has your interest in becoming a teacher evolved over time?

Messages about Teaching

4. What sorts of messages do you hear from your friends, family and/or other important people in your life about a career in teaching?

Ideal Career Features and Assessment of Teaching Along These Factors

5. When you think about your future career, what kinds of features would you ideally like it to have? [if necessary—When I say "features," I'm referring to benefits such as wages, vacation time, health care and retirement benefits, working environment, co-workers, etc. *Could also have a card with various "features" available for them to discuss*.]

6. Which of these features are "musts"? In other words, which are the most important aspects of your future career?

7. How does a career as a teacher stack up to your other career options with regard to these "must" features?
    a. [*Prompt*] What specific aspects of teaching make it an attractive career for you?
    b. [*Prompt*] What specific aspects of teaching make it unattractive to you?

Deciding Not to Teach

8. For those of you who will probably decide not to become a teacher, what factors will influence your final decision?

9. All of you have indicated that at some point, you have considered a career in teaching. Did you think about majoring in Education at [UNIVERSITY] and earning your teaching license while you complete your undergraduate degree?

10. Why did you decide not to pursue your teaching license while an undergraduate here at [UNIVERSITY]?

11. If you decided to become a teacher at some point in your life, what sort of teacher preparation route would you choose and why? [*Note: Explain "teacher preparation route" as needed*]

Making Teaching More Attractive

12. What policies, programs, incentives or other changes might make teaching a more attractive career for students like you?
    a. [*Prompt*] Financial Incentives
    b. [*Prompt*] Alternative certification

APPENDIX E: Recruitment Documents

Instructor Recruitment Letter/Email for Survey

Dear [Instructor],

I hope your [semester] has started off well. I am a current doctoral candidate in the Education Policy Studies department at the University of Maryland and an advisee of Jennifer King Rice. I am writing to tell you about a study I am conducting for my dissertation and to see if you would be willing to administer a 20-minute survey during one course period in each of your [insert course] sections later this semester.

This study will focus on the career decisions of undergraduates who are considering or have considered becoming a teacher. This will be a mixed method study, with a survey then follow-up focus groups. With your permission, the survey will be administered in [insert course] and focus group participants will be recruited via email from among survey participants. I have targeted your course for participation in this study because your course may either enroll students who have an interest in education or teaching, or who have high SAT/ACT test scores.

I am certain you recognize the importance of recruiting and educating the highest quality public school teachers and I hope you will consider this request. Since the study focuses exclusively on students enrolled at [this university], I expect the results to have implications for teacher preparation and recruitment [here], in particular, and overall teacher recruitment, in general.

Please contact me by [email] or [phone] regarding whether or not you are able to participate. If I have not heard from you within a week, I will also follow-up by telephone. I am happy to address any additional questions or considerations you may have as well. Please note that this study has been reviewed by and received clearance through the Institutional Review Board at [this university].

Thank you for your consideration of this request.

Sincerely,

Amanda N. Bowsher
Doctoral Candidate
Education Policy Studies

Pilot Study Paper-based Survey Participant Recruitment Script
[read prior to survey administration]

We are going to use approximately 20 minutes of class time today to allow you the opportunity to participate in a study of college students' views about careers in teaching by completing a survey. Your participation in this project is completely voluntary and will not, in any way, affect your performance in this course. If you choose not to participate in the survey, you are welcome to use the next 20 minutes as you like. If you decide to leave the room, please plan to return by [insert time] so we can begin class.

For those of you participating, the first two pages of the survey are a consent form, which you will need to sign, date and submit with your completed survey to participate in the study. I'll go ahead pass out the surveys now. The researcher conducting this study thanks you for your time and thoughtful responses.

Main Study Paper-based Survey Participant Recruitment Script
[read prior to survey administration]

We are going to use approximately 20 minutes of class time today to allow you the opportunity to participate in a study of college students' views about careers in teaching by completing a survey. Your participation in this project is completely voluntary and will not, in any way, affect your performance in this course. Anyone who participates in the survey and provides his/her email address on the survey will be entered in a drawing to win one of several $50 Amazon gift cards.

If you choose not to participate in the survey, you are welcome to use the next 20 minutes as you like. If you decide to leave the room, please plan to return by [insert time] so we can begin class.

For those of you participating, the first two pages of the survey are a consent form, which you will need to sign, date and submit with your completed survey to participate in the study and be eligible for the gift card drawing. The researcher will invite a subset of students who complete the survey via email to participate in a focus group to further discuss your experiences and opinions about teaching careers. All students who participate in a focus group will receive a $10 Amazon gift card. I'll go ahead pass out the surveys now. The researcher conducting this study thanks you for your time and thoughtful responses.

Pilot Study Web-based Survey Participant Recruitment Email

Dear [insert class] students,

I am a doctoral student in the Education Policy Studies department at the University of Maryland and I would like to invite you to participate in a study I am conducting about how undergraduate students decide whether or not to become public school teachers. Your participation involves completing a web-based survey which will take about 20 minutes of your time.

Please click on this link [hyperlink] to complete the survey. Your responses will help provide valuable information to researchers, policymakers, and educational administrators about how to recruit promising teachers.

Thank you in advance for your time. If you have any questions about this study, please feel free to contact me at [email] or [phone].

Amanda N. Bowsher
Doctoral Candidate
Education Policy Studies

Main Study Web-based Survey Participant Recruitment Email

Dear [insert class] students,

I am a doctoral student in the Education Policy Studies department at the University of Maryland and I would like to invite you to participate in a study I am conducting about how undergraduate students decide whether or not to become public school teachers. Your participation involves completing a web-based survey which will take about 20 minutes of your time. All students who complete the survey will be entered in a drawing to win one of several $50 Amazon gift cards.

Please click on this link [hyperlink] to complete the survey. Your responses will help provide valuable information to researchers, policymakers, and educational administrators about how to recruit promising teachers.

Based on your answers to the survey items, you may be invited to participate in a focus group in the next few weeks so we can hear more about your thoughts and experiences. If you are invited and choose to participate in a focus group, you will receive a $10 Amazon gift card to compensate you for your time.

Thank you in advance for your time. If you have any questions about this study, please feel free to contact me at [email] or [phone].

Amanda N. Bowsher
Doctoral Candidate
Education Policy Studies

Focus Group Participant Recruitment Email (Main Study Only)

Hello [Student Name],

[paper survey participants] Thank you for taking part in the survey administered in your [insert course] earlier this semester. As [your instructor] mentioned in class, I am conducting a series of follow-up focus groups to learn more about your thoughts about a teaching career and your experiences selecting among career options. Based on your responses to the in-class survey, I believe you will have a lot to add to this conversation and I would like to invite you to participate in one of the focus groups.

[web-based survey participants] Thank you for completing the web-based survey earlier this semester on your thoughts about a career in teaching. As you may remember from my first email, I am conducting a series of follow-up focus groups to learn more about your thoughts about a teaching career and your experiences selecting among career options. Based on your responses to the web survey, I believe you will have a lot to add to this conversation and I would like to invite you to participate in one of the focus groups.

The focus group discussion will last about 1.5 to 2 hours and will consist of a group discussion with about 4-12 of your peers. If you choose to participate, you will receive a $10 Amazon gift card to compensate you for your time. Snacks will also be available during our discussion.

I will be holding three focus groups this semester and you're welcome to attend any one of the three. Please let me know by [deadline date] which day/time will work best for you.

- [insert days/times]

I hope you will take the opportunity to participate in this portion of the study. Your thoughts and experiences will help us better understand how students like yourself think about a career in teaching and the results of this study may be used to improve teacher recruitment [at this institution] and elsewhere. If you have any questions, please feel free to contact me at [email] or [phone].

Amanda N. Bowsher
Doctoral Candidate
Education Policy Studies

APPENDIX F: Factor Analysis Tables

Table F1

Factor Analysis Item Descriptive Statistics

Theoretical Construct		Item	M	SD
Higher order	Sub-construct			
Socialization influences	*Social dissuasion*	1. Others have encouraged me to pursue careers other than teaching.	5.25	1.51
		2. Others told me teaching was not a good career choice.	4.27	1.71
		3. Others influenced me to consider careers other than teaching	5.09	1.38
	Social encouragement	4. My friends think I should become a teacher.	4.41	1.51
		5. My family thinks I should become a teacher.	3.97	1.56
		6. People I have worked with think I should become a teacher.	4.57	1.40
Perceived teaching ability	*Prior teaching and learning experiences*	7. I have had inspirational teachers.	6.07	1.08
		8. I have had good teachers as role models.	6.13	1.04
		9. I have had positive learning experiences.	6.13	1.06
		10. I have the qualities of a good teacher.	5.33	1.05
		11. I believe I would have good teaching skills.	5.56	1.09
		12. Teaching is a career suited to my abilities.	5.23	1.15
Task demand	*Expert career*	13. Teaching requires high levels of expert knowledge.	5.23	1.32
		14. Teachers need highly specialized knowledge.	5.19	1.23
		15. Teachers need high levels of technical knowledge.	4.85	1.26
	High demand	16. If I were a teacher, I would have a heavy workload.	5.01	1.37

		17. Teaching would be emotionally demanding.	5.29	1.42
		18. Teaching would be hard work.	5.59	1.23

Task return	*Social status*	19. Teachers are perceived as professionals.	5.47	1.34
		20. Teaching is perceived as a high-status occupation.	3.79	1.43
		21. Teaching is a well-respected career.	4.93	1.44
		22. Teachers have high morale.	5.26	1.15
		23. Teachers feel valued by society.	4.29	1.51
		24. Teachers feel their occupation has high social status.	3.74	1.38
	Salary	25. Teachers earn a competitive income.	2.81	1.33
		26. Teaching is well paid.	2.63	1.25
		27. Teachers earn a good salary.	2.80	1.31

Interest value	28. I am interested in teaching.	4.66	1.57
	29. I have always wanted to be a teacher.	3.55	1.63
	30. I believe I would like teaching.	5.08	1.31

Personal utility value	*Job security*	31. Teaching would offer me a steady career path.	4.71	1.32
		32. Teaching would provide me with a reliable income.	4.10	1.46
		33. Teaching would be a secure job for me.	4.31	1.44
	Job transferability	34. Teaching would be a useful job for me to have when traveling.	4.58	1.53
		35. Teaching is an attractive career for me because a teaching qualification is recognized everywhere.	4.23	1.32
		36. I would consider/am considering teaching because a teaching job would allow me to choose where I wish to live.	4.19	1.49

	Non-pecuniary benefits	37. Teaching is an attractive profession for me because it would fit with the responsibilities of having a family.	5.17	1.42
		38. I value that if I were a teacher, school holidays would fit in with family commitments.	5.58	1.15
		39. I like the idea that if I were a teacher I would have lengthy holidays.	5.67	1.16
		40. It is attractive to me that if I were a teacher I would have a short workday.	4.97	1.47
		41. I like the idea that part-time teaching could allow more family time.	5.29	1.32
	Shape future of children/ adolescents	42. I find teaching to be an attractive career because it would allow me to shape child and adolescent values.	5.61	1.24
		43. I like the idea that if I were a teacher I could influence the next generation.	5.78	1.13
		44. I value that if I were a teacher, I would be able to have an impact on children/adolescents.	5.91	1.07
Social utility value	Enhance social equity	45. I would consider/am considering teaching because it would allow me to raise the ambitions of under-privileged youth.	5.26	1.41
		46. Teaching is an attractive profession for me because it would allow me to benefit the socially disadvantaged.	5.18	1.40
		47. I like the idea that teaching would allow me to work against social disadvantage.	5.26	1.41
	Make social Contribution	48. Teaching is an attractive profession for me because it would allow me to provide a service to society.	5.58	1.13
		49. I would consider/am considering teaching because teachers make a worthwhile social contribution.	5.35	1.30
		50. I like the idea that teaching would enable me to give back to society.	5.53	1.16

	Work with children/ adolescents	51. I find teaching attractive because I like working with children and adolescents.	5.65	1.34
		52. Teaching is attractive for me because I want a job that involves working with children and adolescents.	5.49	1.49
		53. I would consider/am considering teaching because it would allow me to work in a child and adolescent-centered environment.	5.39	1.51
Perceived cost		54. I would make less money in teaching than in my other career options.	5.75	1.37
		55. I would have to accumulate student loan debt to prepare to teach.	4.22	1.75
		56. If I had to forego income from another job in order to teach, it would be worth it.	3.68	1.39
		57. Preparing to become a teacher would require a lot of time.	5.05	1.26
		58. Preparing to teach sounds like it requires more effort than I'm willing to put into it.	3.31	1.36
		59. When I think about the work required to become a teacher, I'm not sure it's worth it in the end.	3.35	1.51
		60. It seems that teachers have such a heavy workload they can't do other activities.	3.36	1.52
		61. Having a teaching job would take too much time away from other activities that are important to me.	3.10	1.37
		62. The amount of effort it would take to be a good teacher is not worth it to me.	2.82	1.37

Table F2

Rationales for Deleted Items

Theoretical Construct		Item	Reason Omitted
Higher order	Sub-construct		
Socialization influences	*Social dissuasion*	1. Others have encouraged me to pursue careers other than teaching.	low MSA score
		2. Others told me teaching was not a good career choice.	low MSA score
		3. Others influenced me to consider careers other than teaching.	low MSA score
Personal utility value	*Job transferability*	34. Teaching would be a useful job for me to have when traveling.	low inter-item correlations
		35. Teaching is an attractive career for me because a teaching qualification is recognized everywhere.	insufficient loadings on factors
		36. I would consider/am considering teaching because a teaching job would allow me to choose where I wish to live.	insufficient loadings on factors
Social utility	*Shape future of children/ adolescents*	43. I like the idea that if I were a teacher I could influence the next generation.	high inter-item correlations
	Enhance social equity	46. Teaching is an attractive profession for me because it would allow me to benefit the socially disadvantaged.	high inter-item correlations
	Work with children/ adolescents	52. Teaching is attractive for me because I want a job that involves working with children and adolescents.	high inter-item correlations
Perceived cost		54. I would make less money in teaching than in my other career options.	low inter-item correlations
		55. I would have to accumulate student loan debt to prepare to teach.	low inter-item correlations

56. If I had to forego income from another job in order to teach, it would be worth it.	insufficient loadings on factors

Table F3

Rotated Factor Structure Matrix: Image Factoring with Direct Oblimin Rotation

	Factors								
Survey Items	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1. Social utility									
I would consider/am considering teaching because it would allow me to raise the ambitions of under-privileged youth.	**0.72**	0.04	0.01	0.11	0.18	-0.27	0.33	0.35	-0.16
I like the idea that teaching would allow me to work against social disadvantage.	**0.61**	-0.02	-0.02	0.09	0.22	-0.23	0.27	0.18	-0.06
Teaching is an attractive profession for me because it would allow me to provide a service to society.	**0.76**	-0.08	-0.14	0.20	0.26	-0.24	0.34	0.20	-0.14
I would consider/am considering teaching because teachers make a worthwhile social contribution.	**0.75**	-0.01	-0.17	0.14	0.11	-0.26	0.36	0.38	-0.20
I like the idea that teaching would enable me to give back to society.	**0.79**	-0.08	-0.16	0.20	0.17	-0.32	0.34	0.30	-0.20
I find teaching attractive because I like working with children and adolescents.	**0.55**	-0.05	-0.24	0.08	0.38	-0.23	0.52	0.11	-0.09
I would consider/am considering teaching because it would allow me to work in a child and adolescent-centered environment.	**0.64**	0.04	-0.17	0.09	0.35	-0.20	0.43	0.09	-0.15
I find teaching to be an attractive career because it would allow me to shape child and adolescent values.	**0.77**	-0.06	-0.12	0.16	0.28	-0.21	0.42	0.06	-0.12

I value that if I were a teacher, I would be able to have an impact on children/adolescents.	**0.76**	-0.13	-0.22	0.18	0.29	-0.20	0.38	0.03	-0.02

2. Salary

Teachers earn a competitive income.	-0.04	**<u>0.72</u>**	0.16	-0.05	0.06	-0.06	-0.05	0.11	<u>-0.47</u>
Teaching is well paid.	-0.05	**0.81**	0.10	-0.08	0.01	-0.01	-0.02	0.13	-0.33
Teachers earn a good salary.	-0.02	**0.79**	0.03	-0.09	0.03	-0.02	0.01	0.20	-0.32

3. Perceived cost

Preparing to teach sounds like it requires more effort than I'm willing to put into it.	-0.13	0.10	**0.60**	-0.15	-0.10	0.01	-0.27	-0.01	-0.03
When I think about the work required to become a teacher, I'm not sure it's worth it in the end.	-0.23	0.04	**0.67**	-0.17	-0.08	0.08	-0.18	-0.09	-0.01
It seems that teachers have such a heavy workload they can't do other activities.	0.04	-0.03	**0.77**	-0.04	-0.25	-0.14	-0.10	0.10	0.11
Having a teaching job would take too much time away from other activities that are important to me.	-0.03	0.06	**0.82**	-0.14	-0.19	-0.07	-0.16	0.00	0.03
The amount of effort it would take to be a good teacher is not worth it to me.	-0.24	0.15	**0.77**	-0.21	-0.08	0.02	-0.27	-0.11	-0.05

4. Prior teaching and learning experiences

I have had inspirational teachers.	0.21	-0.13	-0.16	**0.81**	0.13	-0.15	0.21	-0.01	-0.07
I have had good teachers as role models.	0.15	-0.07	-0.19	**0.84**	0.12	-0.14	0.19	0.02	-0.15
I have had positive learning experiences.	0.14	-0.05	-0.20	**0.71**	0.12	-0.19	0.21	0.03	-0.23

5. Non-pecuniary benefits

Teaching is an attractive profession for me because it would fit with the responsibilities of having a family.	0.34	0.06	-0.24	0.06	**0.60**	-0.07	0.35	0.24	-0.31

I value that if I were a teacher, school holidays would fit in with family commitments.	0.29	0.02	-0.27	0.15	**0.71**	-0.04	0.24	0.08	-0.22
I like the idea that if I were a teacher I would have lengthy holidays.	0.16	0.01	-0.11	0.14	**0.73**	0.07	0.04	-0.04	-0.13
It is attractive to me that if I were a teacher I would have a short workday.	0.07	0.09	-0.04	-0.05	**0.57**	0.10	-0.07	-0.13	-0.16
I like the idea that part-time teaching could allow more family time.	0.25	0.02	-0.06	0.11	**0.55**	-0.03	0.07	-0.02	-0.12

6. Task demand

Teaching requires high levels of expert knowledge.	0.24	0.05	-0.08	0.10	-0.02	**-0.74**	0.16	0.10	-0.13
Teachers need highly specialized knowledge.	0.23	0.07	-0.02	0.09	0.01	**-0.74**	0.20	0.02	-0.18
Teachers need high levels of technical knowledge.	0.19	0.04	0.03	0.13	0.02	**-0.68**	0.14	0.06	-0.23
Teaching would be emotionally demanding.	0.23	-0.26	0.10	0.26	-0.11	**-0.54**	0.13	0.25	0.00
If I were a teacher, I would have a heavy workload.	0.22	-0.14	0.16	0.24	-0.11	**-0.61**	0.14	0.27	-0.10
Teaching would be hard work.	0.25	-0.21	0.07	0.32	-0.09	**-0.59**	0.10	0.24	-0.10
Preparing to become a teacher would require a lot of time.	0.33	0.04	0.12	0.23	0.03	**-0.49**	0.10	0.26	-0.25

7. Interest/ ability/ encouragement

I am interested in teaching.	<u>0.47</u>	0.05	-0.15	0.06	-0.01	-0.13	**<u>0.64</u>**	0.49	-0.06
I have always wanted to be a teacher.	0.35	0.05	-0.07	0.00	0.02	-0.09	**0.51**	0.27	-0.04
I believe I would like teaching.	<u>0.44</u>	0.09	-0.31	0.09	0.13	-0.11	**<u>0.71</u>**	0.32	-0.21
I have the qualities of a good teacher.	0.30	-0.06	-0.29	0.30	0.21	-0.13	**0.63**	0.07	-0.13
I believe I would have good teaching skills.	0.29	0.01	-0.25	0.30	0.17	-0.13	**0.69**	0.07	-0.16
Teaching is a career suited to my abilities.	0.39	-0.04	-0.24	0.30	0.15	-0.19	**0.75**	0.20	-0.06
My friends think I should become a teacher.	0.37	-0.08	-0.09	0.07	-0.09	-0.29	**<u>0.61</u>**	<u>0.43</u>	-0.06
My family thinks I should become a teacher.	0.32	-0.03	0.02	0.02	-0.01	-0.25	**0.42**	0.35	0.01
People I have worked with think I should become a teacher.	0.26	-0.11	-0.07	0.18	0.02	-0.28	**0.56**	0.28	-0.07

8. Job security

Teaching would offer me a steady career path.	<u>0.40</u>	0.22	-0.18	0.07	0.18	-0.17	<u>0.49</u>	**<u>0.64</u>**	-0.27
Teaching would provide me with a reliable income.	0.20	<u>0.43</u>	-0.07	0.00	0.08	-0.15	0.29	**0.64**	-0.28
Teaching would be a secure job for me.	0.33	0.26	-0.19	-0.03	0.15	-0.07	0.39	**0.67**	-0.24

9. Social status

Teachers are perceived as professionals.	0.14	0.20	-0.21	0.23	0.27	-0.18	0.14	0.08	**-0.61**
Teaching is perceived as a high-status occupation.	0.11	0.35	0.05	0.05	0.16	-0.14	0.05	0.06	**-0.71**
Teaching is a well-respected career.	0.11	0.26	-0.04	0.10	0.17	-0.10	0.09	0.15	**-0.70**
Teachers have high morale.	0.21	0.04	-0.04	0.24	0.19	-0.27	0.12	-0.03	**-0.50**
Teachers feel valued by society.	0.05	0.33	0.03	0.00	0.10	-0.05	0.05	0.16	**-0.65**
Teachers feel their occupation has high social status.	0.04	0.43	0.14	0.02	0.18	-0.15	0.05	0.13	**-0.69**

Note. Underlined values indicate a double loading on two factors (≥ |.40|). Loadings highlighted in bold indicate the factor on which the item was placed.

Table F4

Rotated Factor Pattern Matrix: Image Factoring with Direct Oblimin Rotation

	Factors								
Survey Items	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1. Social utility									
I would consider/am considering teaching because it would allow me to raise the ambitions of under-privileged youth.	**0.67**	0.05	0.10	0.01	0.02	-0.02	0.01	0.16	-0.02
I like the idea that teaching would allow me to work against social disadvantage.	**0.57**	0.03	0.07	0.00	0.10	-0.07	0.01	0.02	0.06
Teaching is an attractive profession for me because it would allow me to provide a service to society.	**0.73**	-0.04	-0.02	0.06	0.06	0.01	-0.02	0.01	-0.04
I would consider/am considering teaching because teachers make a worthwhile social contribution.	**0.72**	-0.02	-0.10	0.01	-0.10	0.01	-0.03	0.18	-0.11
I like the idea that teaching would enable me to give back to society.	**0.75**	-0.07	-0.08	0.04	-0.05	-0.05	-0.06	0.10	-0.12
I find teaching attractive because I like working with children and adolescents.	<u>0.32</u>	-0.03	-0.09	-0.09	0.26	-0.13	<u>0.34</u>	-0.07	0.04
I would consider/am considering teaching because it would allow me to work in a child and adolescent-centered environment.	**0.53**	0.07	-0.04	-0.05	0.17	-0.05	0.20	-0.11	-0.01
I find teaching to be an attractive career because it would allow me to shape child and adolescent values.	**0.75**	-0.01	0.02	0.02	0.06	0.02	0.13	-0.17	-0.03
I value that if I were a teacher, I would be able to have an impact on children/adolescents.	**0.75**	-0.04	-0.09	0.04	0.08	0.00	0.07	-0.17	0.07

2. Salary

Teachers earn a competitive income.	-0.02	**0.64**	0.12	0.04	-0.01	-0.05	-0.05	0.01	-0.23
Teaching is well paid.	-0.01	**0.81**	0.05	0.06	-0.04	-0.04	-0.02	0.03	-0.03
Teachers earn a good salary.	-0.01	**0.78**	-0.01	0.03	-0.02	-0.04	-0.03	0.11	-0.02

3. Perceived cost

Preparing to teach sounds like it requires more effort than I'm willing to put into it.	0.00	0.04	**0.56**	-0.05	0.01	0.02	-0.13	0.02	-0.05
When I think about the work required to become a teacher, I'm not sure it's worth it in the end.	-0.16	-0.03	**0.68**	-0.06	0.07	0.08	0.08	-0.06	-0.06
It seems that teachers have such a heavy workload they can't do other activities.	0.13	-0.01	**0.78**	0.07	-0.12	-0.04	0.03	0.05	0.11
Having a teaching job would take too much time away from other activities that are important to me.	0.10	0.04	**0.82**	-0.02	-0.06	0.00	0.02	-0.04	0.02
The amount of effort it would take to be a good teacher is not worth it to me.	-0.12	0.08	**0.75**	-0.08	0.07	0.00	-0.01	-0.08	-0.06

4. Prior teaching and learning experiences

I have had inspirational teachers.	0.07	0.04	-0.01	**0.80**	0.04	0.04	0.07	-0.05	0.08
I have had good teachers as role models.	0.00	0.06	-0.04	**0.85**	0.02	0.05	0.05	0.00	0.00
I have had positive learning experiences.	-0.04	0.03	-0.09	**0.68**	0.01	-0.02	0.08	-0.01	-0.12

5. Non-pecuniary benefits

Teaching is an attractive profession for me because it would fit with the responsibilities of having a family.	0.05	-0.06	-0.10	-0.08	**0.53**	-0.01	0.17	0.20	-0.17
I value that if I were a teacher, school holidays would fit in with family commitments.	0.02	-0.04	-0.12	0.03	**0.67**	-0.03	0.08	0.10	-0.04

I like the idea that if I were a teacher I would have lengthy holidays.	-0.02	-0.02	0.03	0.10	**0.75**	0.05	-0.05	0.05	0.04
It is attractive to me that if I were a teacher I would have a short workday.	0.00	0.02	0.04	-0.07	**0.58**	0.03	-0.10	-0.06	-0.05
I like the idea that part-time teaching could allow more family time.	0.13	0.01	0.05	0.06	**0.54**	-0.02	-0.05	0.00	0.04

6. Task demand

Teaching requires high levels of expert knowledge.	0.03	0.11	-0.15	-0.08	-0.01	**-0.78**	0.00	-0.05	0.04
Teachers need highly specialized knowledge.	0.00	0.12	-0.06	-0.09	0.01	**-0.78**	0.10	-0.17	-0.01
Teachers need high levels of technical knowledge.	-0.03	0.05	-0.01	-0.04	0.03	**-0.70**	0.04	-0.08	-0.09
Teaching would be emotionally demanding.	0.05	-0.21	0.09	0.14	-0.05	**-0.45**	-0.02	0.19	0.05
If I were a teacher, I would have a heavy workload.	0.00	-0.12	0.15	0.12	-0.05	**-0.53**	0.02	0.18	-0.02
Teaching would be hard work.	0.07	-0.19	0.06	0.18	-0.07	**-0.49**	-0.08	0.17	-0.05
Preparing to become a teacher would require a lot of time.	0.21	0.03	0.11	0.14	0.00	**-0.36**	-0.11	0.15	-0.11

7. Interest/ ability/ encouragement

I am interested in teaching.	0.23	0.04	-0.03	-0.03	-0.11	0.07	**0.48**	0.29	0.02
I have always wanted to be a teacher.	0.18	0.05	0.05	-0.07	-0.06	0.05	**0.45**	0.09	0.02
I believe I would like teaching.	0.17	0.04	-0.16	-0.05	-0.05	0.06	**0.58**	0.09	-0.13
I have the qualities of a good teacher.	-0.01	-0.05	-0.10	0.16	0.09	0.00	**0.60**	-0.10	-0.06
I believe I would have good teaching skills.	-0.02	0.03	-0.05	0.18	0.03	0.01	**0.68**	-0.13	-0.07
Teaching is a career suited to my abilities.	0.04	0.01	-0.04	0.18	0.04	-0.03	**0.69**	0.00	0.06
My friends think I should become a teacher.	0.08	-0.10	0.01	-0.07	-0.14	-0.13	**0.51**	0.24	-0.02
My family thinks I should become a teacher.	0.11	-0.02	0.09	-0.06	-0.01	-0.14	**0.33**	0.22	0.09
People I have worked with think I should become a teacher.	-0.06	-0.12	0.06	0.06	-0.01	-0.15	**0.53**	0.13	-0.02

8. Job security

Teaching would offer me a steady career path.	0.11	0.13	-0.10	-0.01	0.11	-0.01	0.25	**0.52**	-0.09
Teaching would provide me with a reliable income.	-0.03	<u>0.35</u>	-0.05	0.01	0.07	-0.05	0.10	<u>**0.57**</u>	-0.04
Teaching would be a secure job for me.	0.09	0.15	-0.13	-0.08	0.10	0.07	0.15	**0.60**	-0.08
9. Social status									
Teachers are perceived as professionals.	-0.02	0.02	-0.17	0.10	0.10	-0.08	0.01	0.00	**-0.55**
Teaching is perceived as a high-status occupation.	0.05	0.10	0.05	-0.03	-0.01	-0.01	0.00	-0.05	**-0.68**
Teaching is a well-respected career.	0.01	-0.01	-0.02	0.01	-0.01	0.05	0.00	0.06	**-0.70**
Teachers have high morale.	0.11	-0.10	0.01	0.11	0.04	-0.13	0.02	-0.14	**-0.49**
Teachers feel valued by society.	-0.01	0.07	0.03	-0.06	-0.05	0.07	0.01	0.07	**-0.65**
Teachers feel their occupation has high social status.	-0.06	0.19	0.15	-0.03	0.07	-0.06	0.02	0.04	**-0.60**

Note. Underlined values indicate a double loading on two factors ($\geq |.30|$). Loadings highlighted in bold indicate the factor on which the item was placed.

Table F5

Factor Correlation Matrix

Factor	1	2	3	4	5	6	7	8	9
1	1.00								
2	-0.06	1.00							
3	-0.13	0.05	1.00						
4	0.16	-0.16	-0.15	1.00					
5	0.26	0.07	-0.19	0.09	1.00				
6	-0.31	0.06	-0.06	-0.23	0.05	1.00			
7	0.44	0.00	-0.24	0.16	0.13	-0.18	1.00		
8	0.27	0.12	0.00	0.01	-0.07	-0.18	0.29	1.00	
9	-0.13	-0.37	0.02	-0.14	-0.24	0.19	-0.10	-0.13	1.00

APPENDIX G: Calculating Predicted Probabilities

Calculating predicted probabilities for selecting each of the dependent variable response options for intent to teach (unlikely, not sure, likely) given particular values on the predictor variables requires several steps. For example, to ascertain the predicted probability that an uncommitted prospective teacher who scored one standard deviation above the mean on interest/ability/encouragement would select likely (*L*) to teach, I calculated the cumulative probability of selecting a response at or below the second threshold (including unlikely (*U*) or not sure (*NS*)) and then subtracted that value from one because the probabilities for all response categories must sum to one. In the ordinal logistic regression model, predicted probabilities are logits for the *cumulative* probabilities, also known as cumulative logits (O'Connell, 2006). To determine the probability of a *U* or *NS* response, I first calculated the cumulative logit for the +1 SD interest/ability/encouragement scenario for model 2 by inserting the second threshold, +1 as the value for interest/ability/encouragement, and the mean (zero) for all other predictors:

$$\ln(\theta_{U \text{ or } NS}) = \alpha_{U \text{ or } NS} - \beta_{sx} - \beta_{rc} - \beta_{SAT} - \beta_{slry} - \beta_{p.t.l.} - \beta_{s.u.} - \beta_{i/a/e} = 1.05 - (+1)(.92) = .13$$

Next, I exponentiated the cumulative logit ($e^{.13} = \mathbf{1.14}$) to calculate the estimated cumulative odds (*co*) for a *U* or *NS* response. I then transformed this value into an estimated cumulative probability (*cp*) using $cp = (co/[1 + co]) = (1.14/[1+1.14]) = .53$ (O'Connell, 2006). In the final step, I subtracted .53 from 1, which yielded the probability a respondent with one standard deviation above the mean score for

interest/ability/encouragement would select the only higher response, *likely* intent to

teach (.47).

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