THE RELATIONSHIP BETWEEN TEACHER TRAINING PROGRAMS
AND TEACHER PERCEPTIONS OF STUDENT APATHY

A Thesis
submitted to the Faculty of the
Graduate School of Arts and Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Master of Public Policy
in Public Policy

By

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Washington, DC
April 15, 2011
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ABSTRACT

Prior research suggests that teacher expectations of their students have a powerful influence on student performance. Comparatively less research has explored how teacher expectations are shaped, particularly by the pre-service training teachers receive. Using the 1999-2000 Schools and Staffing Survey, a national survey of K-12 principals, teachers, and schools, I analyze how teachers who have earned certification through traditional education schools perceive their students compared to teachers who either have earned certification through alternative certification programs or are not certified. Specifically, I examine whether teachers in traditional and non-traditional groups differ in their degree of agreement with the statement that their students are apathetic, which is a proxy for teacher expectations. I find a statistically significant but small negative relationship between teachers attending traditional education schools and perceiving that their students are apathetic. However, I also find that teacher training explains relatively little variation in teacher perceptions of student apathy compared to other teacher characteristics, such as race, ethnicity, and age.
The writing of this thesis
is dedicated to
the students I have taught
and my students yet to come.

Special thanks to my advisor Thomas Wei for his guidance,
to Anne Hyslop and Sophie Kim for their feedback and fellowship,
to Eric Gardner for his time and patience,
to Marek Hlavac for his willingness to answer questions,
and to Kerry Donahue for her support and friendship.

Finally, thank you to my parents Beth and Richard Chapman
for both your high expectations and your love.

AMANDA B. JARRARD
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INTRODUCTION

The demand for highly effective teachers is increasing nationwide. In his 2011 State of the Union Address, President Obama declared that “Over the next 10 years, with so many baby boomers retiring from our classrooms, we want to prepare 100,000 new teachers in the fields of science and technology and engineering and math.” The President implored “every young person listening tonight who’s contemplating their career choice: If you want to make a difference in the life of our nation; if you want to make a difference in the life of a child — become a teacher. Your country needs you” (White House Office of the Secretary, 2011).

High-poverty schools, particularly those in urban or rural districts, struggle to attract highly effective teachers (Ingersoll, 1996). At the same time, the U.S. Department of Education has stated that alternative certification programs can help meet the demand for highly effective teachers in our nation that cannot be met with the number of “traditional” teachers graduating from traditional education programs at colleges and universities alone (U.S. Department of Education, 2002). In this paper, I define alternative certification programs as programs that do not require pre-service teacher candidates to earn certification through a formal degree program based at an accredited college or university.

Throughout the 1980s and 1990s, alternative certification programs grew in response to insufficient numbers of traditionally certified teachers (Dial & Stevens, 1993). In 1983, eight states had state-run alternative certification programs. By 2003, that number had risen to 43 states and the District of Columbia, and over 200,000 teachers had completed alternative certification programs (Humphrey and Weschler, 2007). The best-known examples of alternative certification programs include Teach For America, an AmeriCorps program that
recruits top college graduates to teach in the most underachieving school districts in the nation for two years, and Troops to Teachers, which trains former members of the armed forces to enter the classroom. In addition, many states and localities have their own alternative certification programs such as the New York City Teaching Fellows or Mississippi Teacher Corps programs which are designed to meet the need for teachers in hard to staff areas.

Recent research suggests a strong link between teacher quality and student outcomes (U.S. Department of Education, 2002; Kane & Staiger, 2008), and it is important that alternative certification programs produce teachers capable of meeting the challenges of educating all children in America’s public schools. Research remains inconclusive on whether teachers who participate in alternative certification programs produce the same levels of student gains, on average, as teachers who earn certification through traditional university-based programs (Humphrey et al, 2002). While the research on the relationship between teacher training and test scores is inconclusive, a theory called the Pygmalion Effect suggests that teacher perceptions matter. Thus, in addition to exploring the link between teacher training and test scores, researchers could also examine teacher perceptions as a leading indicator of student achievement.

Studies have demonstrated that students respond positively to teachers holding high expectations for them through what has been coined the Pygmalion Effect, a self-fulfilling prophecy where students perform at the levels at which teachers expect them to perform (Rosenthal & Jacobson, 1968; Rist, 1970). Studies also suggest that teachers can be trained to have higher expectations for students and to perceive students more positively (Guskey, 1982). However, I am unaware of any studies exploring whether teachers coming out of traditional education schools or alternative certification programs differ in their expectations for or
perceptions of students upon entering the classroom. My research attempts to build on the body of literature around teacher training by exploring this relationship between teacher training and teacher perceptions.

**Literature Review**

*The Pygmalion Effect*

In the late 1960s and early 1970s, researchers began to examine the role that teacher expectations play in student performance. Rosenthal and Jacobsen’s 1968 study first proposed a Pygmalion effect, suggesting that students would meet the academic expectations their teachers set for them. To demonstrate this effect, the authors gave an intelligence test to every student at an elementary school at the start of a school year. They then randomly assigned 20 percent of the students in the school to an experimental group and told the teachers of the students in the experimental group that these students had large amounts of potential for growth during the school year. At the end of the school year when Rosenthal and Jacobsen re-tested all of the students, they found statistically significantly more growth in test scores for the experimental group, the group which teachers expected to show the most growth, than for the students included in the control group. Furthermore, the experimental group not only showed more academic growth, but their teachers also rated them more positively on other key attributes including happiness, intellectual curiosity, and social adjustment (Rosenthal & Jacobson, 1968; Rosenthal, 1994).

The proposed mechanism is that teachers unconsciously communicate their expectations by the feedback they provide students. Teachers demand better performance from students for
whom they have high expectations. Even when all students meet the expectations set forth by the teacher, teachers nevertheless tend to praise their high-expectation students more than their low-expectation students (Brophy & Good, 1970). In addition, peer behaviors, attitudes, and actions reinforce the expectations communicated by teachers. For example, teachers frequently place students in “ability” groups based on perceptions of students’ race and socioeconomic status. Students perform according to the level of the group in which they are placed, partially because other students adopt their teacher’s attitudes toward and labeling of their peers (Rist, 1970).

Teacher Training and Multicultural Sensitivity

While existing evidence suggests that teachers’ expectations for their students matter, there is much less evidence on how to increase these expectations. It may be possible to raise teachers’ expectations for students through training if the importance of high expectations is uniformly emphasized in a manner similar to pedagogy or classroom management (Guskey, 1982). However, teacher training varies greatly across the thousands of traditional education schools and the hundreds of alternative certification programs in the United States, and it is particularly unclear how much emphasis is placed on expectations in alternative certification programs (Wilson et al, 2001; Zeichner & Schulte, 2001). Humphrey and Weschler (2007) describe the dilemma in grouping alternative certification programs:

Alternative certification program participants are a diverse group of individuals who defy generalization. In addition, we find a great deal of variation between and within alternative certification programs. In contrast to simplistic characterizations, we find teacher development in alternative certification to be a function of the interaction between the program as implemented, the school
context in which participants are placed, and the participants' backgrounds and previous teaching experiences.

Alternative certification programs differ on characteristics such as selection criteria, goals, support, and ongoing professional development (Humphrey et al., 2002). Compared to participants in traditional certification programs, participants in alternative certification programs may represent a more diverse population as they are recruited from many different educational and professional settings (Stoddart, 1993; Wise, 1994; Humphrey et al., 2002). Teachers trained in alternative certification programs are also more likely to be male, over thirty, and minorities (Humphrey et al., 2002) and more likely to teach in diverse and low-income settings (Natriello & Zumwalt, 1993). They are also more likely to choose to teach in urban settings (Corbin, 1991; Stoddart, 1992).

In addition, Stoddart’s (1993) qualitative study of approximately 200 teacher interns found that alternatively certified teacher interns were less likely to perceive urban students as “culturally deficient” and more likely to hold more positive views of low-income and minority students than teacher interns trained in traditional programs. Stoddart also found that while 53 percent of university certified teacher candidates viewed student characteristics as the main source of student failure, only 30 percent of alternatively certified teacher interns viewed student characteristics in this way. While my study is similar to Stoddart’s, I use a representative sample of teachers, instead of teacher interns, to examine the link between teacher training and teacher perceptions.

Because the majority of teachers in America earn certification by completing traditional teacher training, improving training that will lead to their having high expectations for their students is especially important. A 1987 American Association of Colleges for Teacher
Education analysis found that the majority of pre-service, traditional teachers were white, middle-class females who intended to teach in suburban or small town schools (American Association of Colleges for Teacher Education, 1987; Sleeter, 1993; Ng, 2003). White teacher candidates may be more likely to have preconceived biases about racial minorities that make it difficult for them to imagine themselves teaching in urban or minority schools (Groulx, 2001; Ng, 2003). Given the large numbers of racial minorities in our nation’s low-performing and urban public schools, dispelling biases teachers may hold during the training period is critical.

To prepare teachers to teach in urban schools, however, many traditional education schools have adopted an additive approach by which they require students to take one additional “diversity” course instead of incorporating opportunities to explore diversity fully into all other courses (Ladson-Villings, 1999, Ng, 2003). Multiculturalism is taught as content in many mainstream teacher education schools, but programs do not teach new teachers to examine their own biases or to be reflective about what they are experiencing in urban schools (Ng, 2003). Additionally, when non-minority students in traditional education programs study “at-risk” attributes of urban students they may draw negative conclusions about the communities in which these students live (Yeo, 1997). New teachers frequently believe that minority students fail because of “cultural deficits;” in other words, minority students lack some essential quality that students of the mainstream cultural group possess (Davis, 1995). Instructors in teacher training courses may reinforce this belief set while teaching multicultural courses by transmitting ideas of meritocracy and cultural hegemony (Davis, 1995). As a result, traditional training programs may perpetuate a cycle of failure in educational outcomes for minority students by failing to correct stereotypes and perceptions of minority students and urban education that pre-service teacher candidates may have (Yeo, 1997).
Research suggests that these effects can be mitigated, however, by revised teacher training methods. Improvements in student outcomes for teachers who participated in a Teacher Expectations and Student Achievement program suggest that teachers can be coached into having higher expectations for students in a program intended to explicitly teach the importance of high expectations (Lowenstein, 2009).

In sum, there is some concern that white teacher candidates may not perceive minority students as having the resources and capabilities to learn because students have backgrounds and experiences that are not congruent with those of their teachers. Because alternative certification programs tend to attract diverse candidates and place teachers in high minority and urban districts, alternative certification programs may have effective methods for teaching multiculturalism and high expectations that could be incorporated into the curricula of traditional education schools.

**Research Question and Hypothesis**

This study seeks to build on prior research by examining whether traditional or non-traditional teacher training is associated with teachers having more positive perceptions of, and thus higher expectations for, their students. Specifically, I explore the question:

*Are teachers who attend traditional teacher training programs less likely to perceive their students as being apathetic than teachers who attend alternative training programs or are not certified?*
This question adds to the theoretical framework and evidence about teacher expectations presented in earlier studies by examining the link between teacher training programs and teachers’ perceptions of their students.

Teachers who have high expectations for students can positively influence student achievement (Rosenthal, 1968; Rist, 1970), which suggests that teacher education programs should strive to train their teachers to have high expectations. But because traditional teacher education schools do not appear to emphasize multicultural awareness or the importance of holding high expectations for all students, I hypothesize that the perceptions of teachers who received certification through traditional training programs will be no higher than those of teachers who are not certified or who received certification by completing alternative programs.

Some alternative programs stress high expectations and value diversity. Two of Teach For America’s (TFA) core values reflect an emphasis on high expectations. “Relentless pursuit of results” states that TFA corps members and alumni will achieve “ambitious, measurable results,” while “Sense of possibility” describes the idea that TFA corps members will “think boldly” (Smith, 2006). This emphasis on bold thinking to achieve ambitious results requires that a teacher believe his students can achieve.

In traditional education schools, a lack of focus on expectations and teacher perceptions means that despite having attended years of teacher training, a teacher may have no higher expectations for students than teachers who enter the profession any other way. However, because much variation exists between alternative certification programs, I cannot predict with certainty that, on average, alternative certification programs do a better job at preparing teachers to have high expectations.
**CONCEPTUAL MODEL**

As Figure 1 shows, teacher beliefs matter because teacher beliefs translate into teacher actions in four principle ways. First, a teacher may reflect nonverbally that he favors a group of students or believes that those students possess more motivation to learn. Second, if a teacher believes that a group of students is highly motivated to learn, then the teacher may be more likely to work harder to teach those students or to teach that group more challenging material. Conversely, if a teacher does not perceive his students as being motivated to learn, he may not feel motivated to teach students more difficult material. If one group of students does not receive the same instruction that another receives, then that group of students remains less likely to make the same academic gains despite potentially possessing the same initial skill set and potential.

*Figure 1: Conceptual Model*

Third, within a given classroom, a teacher may give students that he perceives as highly motivated more chances to demonstrate learning, either by calling on a given group of students...
more frequently or by allowing those students more time to answer a question verbally or complete an exam. Finally, a teacher may offer more feedback to students that he perceives as motivated. This feedback allows students to know whether they are meeting learning goals and to make adjustments. If a teacher views a student as lacking motivation and fails to offer appropriate levels of feedback, the student may not make significant academic gains and may not know he is failing to meet learning goals (Rosenthal, 1994). These negative teacher actions, or lack of positive teacher actions, result in student beliefs about their own efficacy being low. Furthermore, the actions of students’ peers reflect teacher beliefs and actions and can intensify students’ beliefs about themselves. As illustrated in Figure 1, student beliefs translate to student actions. Students who have negative beliefs about their own abilities or potential may fail to complete homework or may not participate in class. These student actions then influence student achievement outcomes.

The pathways between teacher perceptions and student achievement have been well-established. My research instead focuses on the less-researched relationship between teacher training and teacher perceptions, illustrated in the first two boxes of Figure 1. Is there evidence that traditional teacher training programs are more successfully inculcating teachers to have positive perceptions of students? Is this an area where both traditional and alternative training programs could improve, resulting in higher levels of student achievement?

**Methodology**

I use four regression models to examine the relationship between teacher education and whether teachers perceive that student apathy is a major problem in their schools. In all models,
teachers are the unit of analysis. Models A and B estimate the relationship between teacher certification and a teacher’s perception of apathy:

\[
\text{Models A and B: } \text{Perception of Student Apathy} = \beta_0 + \beta_1 \text{ Traditional Teacher Training} + \gamma \text{ Teacher Controls} + \delta \text{ School Controls} + \epsilon
\]

The dependent variable, perception of student apathy, is a dummy variable equal to 1 if the teacher perceives apathy as a serious or moderate problem and equal to 0 if the teacher perceives apathy as a minor problem or not a problem in his school. The independent variable of interest, traditional teacher training, is also a dummy variable equal to 1 if a teacher earned certification through a bachelor’s education program, as part of a 5th year program, or as part of a master’s degree program. Traditional teacher training is equal to 0 if a teacher earned certification through an alternative program or through continuing professional development or if the teacher is not certified. \( \beta_0 \) is an intercept term, and \( \epsilon \) is a random error term.

Model A uses ordinary least squares (OLS) estimation and directly controls for the variables present in the data that may be related to a teacher’s perceptions of his students. The teacher control variables (\( \gamma \)) include the teacher’s gender, race, ethnicity, age, and education level as well as the grade and Title 1 status of his students. School-level variables (\( \delta \)) control for whether the school has admission requirements, whether the school is for “at-risk” students, whether the school has students eligible for free or reduced price lunch, whether the school has Title 1 teachers, whether the school is an elementary (grade K-8) or high school (grades 9-12), and the racial composition of the teachers at the school. Missing data indicator variables were included for school-level data on free or reduced price lunch and whether a school has Title 1 teachers.
Model B includes the same variables as those in Model A, but I use a probit regression model instead of OLS. This approach may be more valid given that the independent variable of interest, whether a teacher earned certification through a traditional teacher training program, is dichotomous.

Because there are potentially selection biases both from teachers self-selecting into traditional education schools or alternative certification programs and from teachers not being randomly assigned to schools, I use the propensity score regression method in Model C to control for differences in traditional and alternative certification teachers:

**Model C:**

**First Stage:** \[ Traditional = \beta_0 + \beta_1 \text{Male} + \beta_2 \text{American Indian} + \beta_3 \text{Asian} + B_4 \text{Black} + \beta_5 \text{Hispanic} + \beta_6 \text{Thirty} + \beta_7 \text{Forty} + \beta_8 \text{Fifty} + \varepsilon \]

**Second Stage:** \[ \text{Perception of Student Apathy} = \beta_0 + \beta_1 \text{Traditional Teacher Training} + \beta_2 P\_Score + \beta_3 P\_Score \times \text{Traditional Teacher Training} + \gamma \text{Teacher Controls} + \delta \text{School Controls} + \varepsilon \]

To create the propensity scores in the first stage, I regress the dichotomous indicator of traditional teacher training program participation on a teacher’s sex, race, and age using a probit model. The second stage employs an OLS regression of teacher’s perception of student apathy on the school-level controls used in Models A and B, the predicted propensity scores estimated in the first stage, and an interaction term between the predicted propensity scores and a dummy variable indicating whether a teacher received certification by attending a traditional education school. \( \beta_0 \) is an intercept term, and \( \varepsilon \) is a random error term.
Model D, an OLS model with school fixed effects, estimates the relationship between teacher training and perceptions of apathy:

**Model D**: \( \text{Perception of Student Apathy} = \beta_0 + \beta_1 \text{Traditional Teacher Training} + \gamma \text{Teacher Controls} + \delta \text{School Fixed Effects} + \varepsilon \)

Including a school-level fixed effect exploits within-school variation in teachers and helps control for confounding factors that I do not explicitly measure since teachers from the same school should be more homogeneous than teachers from different schools. In addition to including school fixed effects, I control for teacher characteristics including sex, race, age, additional education, and union membership. \( \beta_0 \) is an intercept term, and \( \varepsilon \) is a random error term.

In all four regression models, \( \beta_1 \) is the coefficient of interest, as it measures the average difference between traditional and non-traditional teachers’ perceptions of student apathy, after controlling for the stated factors. According to my hypothesis, this should be close to zero and insignificant, given that my hypothesis implies that there should be no differences between how traditional and non-traditional teachers perceive student apathy.

**Limitations**

Selection bias is an important concern in this study. I make the assumption that what affects how motivated teachers perceive their students to be is the training, or lack of training, they received. However, we are not able to randomly assign pre-service teachers to traditional education programs, alternative certification programs, or groups receiving no training. Individuals who enter alternative teacher certification programs such as Teach For America or
New York Teaching Fellows may have different baseline characteristics from individuals who earn their teaching certificates through traditional education schools. Pre-existing differences may bias how motivated different groups of teachers perceive students to be. Models A to D employ various estimation strategies in an attempt to control for the self-selection of teachers into different types of teacher training programs.

Selection bias also exists in how teachers are assigned to districts, schools, and classes of students within schools. The baseline quality of students, the school climate and culture, or a school's administration during a teacher’s first year of teaching may influence the way the teacher perceives his students holding all else equal. Ideally, this type of research would show that the same teacher with the same students would have different perceptions if he took a different certification route. However, I am unable to randomly assign teachers to schools or classrooms. Still, I try to address some of these issues by controlling for certain school characteristics, such as the racial composition of the teachers at the school, whether students at the school receive free or reduced-price lunch, and whether the school is intended to serve at-risk students.

An additional limitation of my analysis is that my data do not identify the racial composition of the students in a teacher’s classroom. It may be the case that non-minority teachers are more likely to have negative perceptions of their students because they have biases against minority students. Because my data do not identify the race of the students of the teachers in the sample, I am unable to test this possibility.

A final consideration is that one alternative way to test whether traditional education schools influence teachers’ expectations would be to measure how teachers’ expectations prior to
entering traditional education school change by the time they graduate. However, this approach requires longitudinal data on pre-service teachers, which I do not have in the data. An additional limitation of this approach is that it would ask teachers who are not currently classroom teachers to provide their opinions. It is possible that some teachers who attended traditional education schools do not ultimately teach in a classroom. It also is possible that a teacher who has never taught could imagine his classroom being comprised of a certain group of students with certain demographic factors or certain skill sets and could affirmatively state that he or she would have high expectations for those students. However, the pertinent question in this study is how teachers actually perceive the students currently in their classrooms, for whose achievement they are responsible. Thus, I focus on current teachers and their perceptions.

**DATA**

*The 1999-2000 Schools and Staffing Survey*

I use data on teacher preparation and perceptions of students from the 1999-2000 Schools and Staffing Survey (SASS) administered by the U.S. Department of Education’s National Center for Education Statistics (NCES), which consists of five components: a School District Survey, a Principal Survey, a School Survey, a Teacher Survey, and a Library Media Center Survey. Both public and private schools complete the survey, but I focus on the sample of public schools only, which includes 42,086 teachers.

My dependent variable measures how teachers perceive student apathy. As shown in Figure 2, the School and Staffing Survey asks teachers, “To what extent is apathy a problem in this school?” Teachers select among the following choices: a serious problem, a moderate
problem, a minor problem, or not a problem. How a teacher answers this question may be an effective proxy for a teacher’s perception of his students. I propose that if a teacher believes his students are apathetic toward their own learning, then that teacher is less likely to have high expectations for them. In other words, a teacher who believes that his students “just don’t care” may not feel motivated to perform the teacher actions that could lead to high levels of student achievement.

Figure 2: Teacher Rankings of Student Apathy

My independent variable of interest is whether a teacher received pre-service training through a traditional education school. As illustrated in Figure 3, a question on the survey asks teachers, “How did you earn your regular or standard state certificate or advanced professional certificate in your main teaching assignment field?” Teachers who answered that they earned their certification through part of a bachelor’s degree program, as part of a 5th year education program, or through a master’s degree program were coded as having received “traditional”
training because they earned certification a) at a college or university and b) through a formal
degree program. All other teachers were coded as non-traditional. This group included teachers
who received certification through an alternative certification program either before or after
beginning teaching or through continuing professional development, and teachers who were
teaching but not certified.

*Figure 3: Method of Earning Teacher Certification*

My sample was thus divided into two groups: traditional teachers who received
certification by attending education schools (n=27,860) and non-traditional teachers who were
not certified or received certification through a non-traditional certification program (n=10,876). I chose to isolate the traditional teachers as I am most concerned with whether traditional education schools are better at preparing teachers to have positive perceptions of students than other certification or training methods.

The literature suggests that there are differences between individuals who enter traditional education schools and individuals who become teachers through alternative certification programs (Stoddart, 1993; Wise, 1994; Humphrey et al, 2002). The SASS data confirm these differences. As Table 1 shows, non-traditional and traditional teachers were significantly different on all control variables included in my regression models – e.g. sex, race, ethnicity, age, union membership, and completion of a master’s degree. Non-traditional teachers in my sample were more likely to be male, a racial minority (Asian, Black, or Hispanic), and under 40 than traditional teachers. They were also more likely to teach at Title 1 schools that receive federal assistance because they have a large population of students living in poverty, to teach at at-risk schools, and to teach at schools where less than 20 percent of the teachers are white. Traditional teachers were more likely to be members of labor unions, to have a Master’s degree, and to teach at schools where 85 percent or more of the teachers are white. Thus, the various models I estimate (as described in the previous section) attempt to control for these pre-existing differences that may otherwise confound the interpretation of my results.
Table 1: Teacher Summary Statistics

<table>
<thead>
<tr>
<th></th>
<th>Full Sample</th>
<th>Traditional</th>
<th>Non-Traditional</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.252</td>
<td>0.238</td>
<td>0.291</td>
<td>-0.053***</td>
</tr>
<tr>
<td>Black</td>
<td>0.081</td>
<td>0.067</td>
<td>0.117</td>
<td>-0.050***</td>
</tr>
<tr>
<td>White</td>
<td>0.892</td>
<td>0.907</td>
<td>0.852</td>
<td>0.055***</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.055</td>
<td>0.045</td>
<td>0.080</td>
<td>-0.035***</td>
</tr>
<tr>
<td>Age 30-39</td>
<td>0.220</td>
<td>0.213</td>
<td>0.237</td>
<td>-0.024***</td>
</tr>
<tr>
<td>Age 40-49</td>
<td>0.318</td>
<td>0.338</td>
<td>0.266</td>
<td>0.072***</td>
</tr>
<tr>
<td>Age 50 or older</td>
<td>0.293</td>
<td>0.303</td>
<td>0.269</td>
<td>0.034***</td>
</tr>
<tr>
<td>Member of a Union</td>
<td>0.790</td>
<td>0.800</td>
<td>0.764</td>
<td>0.036***</td>
</tr>
<tr>
<td>Has Bachelor Degree</td>
<td>0.993</td>
<td>0.999</td>
<td>0.979</td>
<td>0.020***</td>
</tr>
<tr>
<td>Has Masters Degree</td>
<td>0.462</td>
<td>0.493</td>
<td>0.381</td>
<td>0.112***</td>
</tr>
<tr>
<td>Has Advanced Graduate Certificate</td>
<td>0.019</td>
<td>0.021</td>
<td>0.014</td>
<td>0.007***</td>
</tr>
<tr>
<td>Teaches Title 1 Students</td>
<td>0.080</td>
<td>0.069</td>
<td>0.107</td>
<td>-0.038***</td>
</tr>
<tr>
<td>Teaches at an At-risk School</td>
<td>0.009</td>
<td>0.008</td>
<td>0.011</td>
<td>-0.003***</td>
</tr>
<tr>
<td>Teaches at a School with Admission Requirements</td>
<td>0.118</td>
<td>0.110</td>
<td>0.136</td>
<td>-0.026***</td>
</tr>
<tr>
<td>Teaches at an Elementary School (K-8)</td>
<td>0.740</td>
<td>0.755</td>
<td>0.702</td>
<td>0.053***</td>
</tr>
<tr>
<td>Teaches at a High School (9-12)</td>
<td>0.323</td>
<td>0.307</td>
<td>0.365</td>
<td>-0.058***</td>
</tr>
<tr>
<td>20-49% of Teachers at Teacher's School Are White</td>
<td>0.068</td>
<td>0.056</td>
<td>0.096</td>
<td>-0.040***</td>
</tr>
<tr>
<td>50-84% of Teachers at Teacher's School Are White</td>
<td>0.177</td>
<td>0.168</td>
<td>0.199</td>
<td>-0.031***</td>
</tr>
<tr>
<td>85-98% of Teachers at Teacher's School Are White</td>
<td>0.412</td>
<td>0.420</td>
<td>0.391</td>
<td>0.029***</td>
</tr>
<tr>
<td>99-100% of Teachers at Teacher's School Are White</td>
<td>0.311</td>
<td>0.327</td>
<td>0.270</td>
<td>0.057***</td>
</tr>
<tr>
<td>Teacher's School Has Students Eligible for Free or Reduced Lunch</td>
<td>0.984</td>
<td>0.985</td>
<td>0.982</td>
<td>0.003***</td>
</tr>
<tr>
<td>Teacher's School Has 1 or more Title 1 Teachers</td>
<td>0.018</td>
<td>0.018</td>
<td>0.018</td>
<td>0.001***</td>
</tr>
<tr>
<td>Number of observations</td>
<td>38,736</td>
<td>27,860</td>
<td>10,876</td>
<td></td>
</tr>
</tbody>
</table>

*** p<0.01, ** p<0.05, * p<0.1

Notes: All summary statistics are calculated using teacher weights. The “Difference” column was calculated by subtracting the “Non-Traditional” column from the “Traditional” column. Significance on the difference was calculated using a t-test. The label “Traditional” identifies teachers who earned certification by completing traditional teacher training at a college or university. “Non-traditional” refers to all other teachers. An “at-risk school” is a school specifically for students who have been suspended or expelled, who have dropped out, or who have been referred for behavioral or adjustment problems.
**Missing Data**

I dropped 3,350 observations from my model because there was not school-level data associated with the teacher-level information. While the teachers may have completed the survey, there was not a link connecting those teachers to a school. Because I include school-level controls, e.g. whether the school is an elementary or high school, the racial composition of the teachers at the school, and whether the school has students that receive free or reduced price lunch, I cannot include observations in my models that do not include characteristics about a teacher’s school. Once these 3,350 observations were dropped from the sample, only two variables still had missing data: the variable indicating whether any students within a school received free or reduced price lunch (658 missing observations) and the variable indicating whether a school had teachers teaching Title 1 students (4,466 missing observations). To prevent these observations from dropping out of the sample, I include missing data dummy variables in all of my models. My final sample includes observations from 38,736 teachers from 7,968 schools.

**RESULTS**

Table 2 reports the regression results for models A to D for the full sample of 38,736 teachers. Each column corresponds to a separate regression. Model A includes teacher and school-level controls and estimates coefficients using OLS regression; Model B includes teacher and school-level controls and estimates coefficients using a probit model; Model C uses a propensity score regression model to try to more robustly control for the self-selection of
teachers into traditional and non-traditional teaching programs; and Model D includes teacher controls and school fixed effects.

All of the models show a negative relationship between traditional teacher programs and teachers’ perceptions of student apathy, suggesting that teachers who attend traditional teacher are less likely to identify student apathy as being a major problem, although the coefficient in model D is insignificant. The other three models provide very similar estimates. However, none of the models appear to explain a large portion of the variation in teachers’ perception of student apathy as indicated by the low R-squared values.

Model A in Table 2 shows that the coefficient on traditional teacher training is statistically significant (p<0.1), but its magnitude is small. Teachers who participated in a traditional teacher training program were, on average, 1.64 percentage points less likely to perceive student apathy as problematic in their schools than teachers who were not certified or earned certification through an alternative teacher certification program. These results are inconsistent with my hypothesis that there would be no significant difference in the perceptions of traditional and non-traditional teachers. However, relative to a baseline of about 49 percent of teachers in the full sample who perceive student apathy as problematic, the 1.6 percentage point difference is quite modest.
Table 2: Regression Results on Apathy

<table>
<thead>
<tr>
<th>Model A: OLS</th>
<th>Model B: Probit</th>
<th>Model C: Propensity Score</th>
<th>Model D: School Fixed Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earned Certification through Traditional Teacher Training Program</td>
<td>-0.0164* (0.00885)</td>
<td>-0.0179* (0.00982)</td>
<td>-0.0175** (0.00890)</td>
</tr>
<tr>
<td>Male</td>
<td>-0.00262 (0.00844)</td>
<td>-0.00379 (0.00971)</td>
<td>-0.00874 (0.00805)</td>
</tr>
<tr>
<td>Black</td>
<td>-0.101*** (0.0181)</td>
<td>-0.111*** (0.0190)</td>
<td>-0.126*** (0.0207)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.0418** (0.0192)</td>
<td>-0.0461** (0.0212)</td>
<td>0.0990*** (0.0216)</td>
</tr>
<tr>
<td>Age 30-39</td>
<td>0.0187 (0.0127)</td>
<td>0.0208 (0.0141)</td>
<td>0.0195 (0.0123)</td>
</tr>
<tr>
<td>Member of a Union</td>
<td>0.0175* (0.00921)</td>
<td>0.0190* (0.0102)</td>
<td>0.0162* (0.00917)</td>
</tr>
<tr>
<td>Has Masters Degree</td>
<td>0.0116 (0.00823)</td>
<td>0.0126 (0.00913)</td>
<td>0.0113 (0.00811)</td>
</tr>
<tr>
<td>Teaches at an At-risk School</td>
<td>0.101*** (0.0323)</td>
<td>0.117*** (0.0375)</td>
<td>0.0985*** (0.0321)</td>
</tr>
<tr>
<td>Teaches at a High School (9-12)</td>
<td>0.184*** (0.0121)</td>
<td>0.190*** (0.0127)</td>
<td>0.188*** (0.0120)</td>
</tr>
<tr>
<td>20-49% of Teachers at Teacher’s School Are White</td>
<td>0.123*** (0.0276)</td>
<td>0.133*** (0.0294)</td>
<td>0.126*** (0.0274)</td>
</tr>
<tr>
<td>50-84% of Teachers at Teacher’s School Are White</td>
<td>0.0592*** (0.0245)</td>
<td>0.0664** (0.0269)</td>
<td>0.0678*** (0.0242)</td>
</tr>
<tr>
<td>5-19% of Teachers at Teacher’s School Are Black</td>
<td>0.0989*** (0.0125)</td>
<td>0.109*** (0.0137)</td>
<td>0.0948*** (0.0123)</td>
</tr>
<tr>
<td>More than 20% of Teachers at Teacher’s School Are Black</td>
<td>0.151*** (0.0195)</td>
<td>0.165*** (0.0207)</td>
<td>0.137*** (0.0180)</td>
</tr>
<tr>
<td>Teacher’s School Has Students Eligible for Free or Reduced Price Lunch</td>
<td>0.125*** (0.0361)</td>
<td>0.139*** (0.0382)</td>
<td>0.125*** (0.0360)</td>
</tr>
<tr>
<td>Observations</td>
<td>38,736</td>
<td>38,736</td>
<td>38,736</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.127</td>
<td>0.096</td>
<td>0.126</td>
</tr>
</tbody>
</table>

*** p<0.01, ** p<0.05, * p<0.1

Notes: The dependent variable “Apathy” indicates that a teacher stated that apathy was either a major problem or a moderate problem at his school. The label “Traditional” identifies teachers who earned certification by completing traditional teacher training at a college or university. “Non-traditional” refers to all other teachers. Regressions were calculated using robust standard errors (in parentheses) and teacher weights. In Model A, the following variables were not reported: American Indian, Asian, Hispanic, Age Under 30, Age 40-49, Age 50 and Above, Has Bachelor Degree, Has Advanced Graduate Certificate, the grade each teacher teaches, whether a teacher teaches at a Title 1 school, whether students at the teacher’s school receive free or reduced price lunch, missing dummy variables for Title 1 and Free and Reduced Lunch, and control variables. The probit in Model B included the same variables as the OLS in Model A. The probit estimates have been converted to marginal effects estimates. The first stage coefficients used in the propensity score method in Model C include: male, American Indian, Asian, Black, Hispanic, and Teacher Age (20-29, 30-39, 40-49, 50+). The pseudo R-squared of the first stage probit was 0.0223. The second stage OLS regression includes a propensity score coefficient and an interaction between the propensity score and the “Traditional” variable. In Model D, 7,968 schools were included in the sample. Other variables used in the fixed effects model but not reported include: American Indian, Asian, Hispanic, Age under 30, Has Bachelor Degree, and Has Advanced Graduate Certificate. The full sample mean proportion of teachers who think student apathy is a major or moderate problem is 0.4815.
A teacher’s race might be one factor influencing the teacher’s beliefs about his students. In fact, being a member of a racial minority group decreased the likelihood that a teacher would perceive his students as being apathetic. Holding all else constant in Model A, Black teachers are 10.1 percentage points less likely to perceive their students as being apathetic than white teachers (p<0.001). Being Hispanic also reduces the likelihood that a teacher would perceive a student as being apathetic by 4.2 percentage points (p<0.001). Teacher gender, however, is unrelated to how a teacher perceives student apathy.

Teachers who teach at a school with disadvantaged students seem to have a higher likelihood of perceiving their students as being apathetic. There is no statistically significant effect of a teacher teaching Title 1 students himself, but teaching in a school with underprivileged or at-risk youth seems to be related to a teacher’s perceptions. Teachers who teach at an at-risk school are 10.1 percentage points more likely to believe that apathy is a problem at their schools (p<0.001). If a teacher’s school has students eligible for free or reduced price lunch, this increases the chance that a teacher will perceive students as apathetic by 12.5 percentage points (p<0.001).

The results also suggest that teachers, on average, tend to perceive older students as being more apathetic. Teaching at a high school increases the likelihood that a teacher will perceive students as being apathetic by 18.4 percentage points (p<0.001). Additionally, older teachers, on average, are more likely to perceive students as apathetic.

The results for Model A in Table 2 suggest that a teacher’s training route is less correlated with teacher perceptions than other factors including a teacher’s race, age, union membership, possession of a bachelor or master’s degree, attainment of an advanced graduate
certificate, teaching at an at-risk school, teaching at a high school, and teaching at a school with students who receive free or reduced price lunch.

Similarly, Model B predicts a statistically significant coefficient on traditional teacher training (p<0.1), with a slightly larger magnitude. The probit model estimates that earning certification through a traditional teacher training program is associated with a 1.79 percentage point lower probability that a teacher will perceive his students as being apathetic.

Column C of Table 2 reports estimates from the propensity score regression model. As Table 1 indicates, there are significant differences in baseline characteristics between teachers who received traditional training and teachers who received alternative or no training. The goal of the propensity score method is to explicitly model the selection process into traditional teacher training programs using observable characteristics. Under certain conditions, this may be a superior way to correct potential selection biases than a typical regression with control variables (as in models A and B). This method predicts that earning certification through a traditional teacher training program is associated with a 1.75 percentage point (p<0.001) reduction in the likelihood that a teacher perceives students as being apathetic. This value is consistent with the estimates in Models A and B.

When school fixed effects are included in the model, as they are in Model D, the relationship between teacher training and teacher beliefs is no longer significant. However, including school fixed effects reduces the goodness of fit as measured by the R-squared value to 0.013.
As noted, the results are generally robust across all specifications. All variables that are statistically significant in the full OLS model are also statistically significant in the probit model that includes all control variables (Model B).

Overall, my hypothesis is not confirmed by my analysis. I predicted that there would be no significant difference between the expectations of teachers who received certification through attending traditional education schools and teachers who either are not certified or who received certification through an alternative certification program. While my results suggest that there is a statistically significant correlation between teacher training and teacher perceptions of student apathy, the 1.64 percentage point magnitude may not be practically significant.

**DISCUSSION**

While the relationship between teacher training and teacher perceptions of student apathy is statistically significant, it appears to have limited practical significance. This may be problematic because individuals who attend traditional education schools attend, on average, four years of school to receive specialized training that prepares them to educate students. Individuals who earn certification through alternative methods or who teach without certification devote much less time to preparing to teach. Traditional education schools produce the vast majority of the national teaching corps. We should expect individuals who attend traditional education schools to improve their teaching skills and to learn to hold high expectations for all students during teacher training. They will, after all, have the most widespread influence on promoting excellent educational outcomes for all students. While my research suggests that traditional education schools do a slightly better job than alternative programs at preparing
teachers to have high expectations for their students, this still appears to be an area where education schools could improve.

The findings in this study suggest that racial and socioeconomic factors are strongly related to how apathetic teachers judge students to be. It is important that teacher training curricula recognize the importance of teachers addressing potential biases within themselves and remaining sensitive to factors that could influence how they perceive their students. In particular, this study finds that white teachers are more likely to perceive students as more apathetic than teachers of other races are. Policymakers should be aware of the role that teacher expectations play in student achievement and should see this as an area with room for improvement as the nation invests in teacher preparation. More studies should be conducted examining the factors that affect teacher beliefs. Practically speaking, researchers might want to explore ways to teach pre-service teachers, particularly white teachers, to hold and communicate higher expectations and more positive beliefs about students.

Other policy implications include factoring teacher beliefs and expectations into hiring and performance evaluation criteria. As part of their Teaching and Learning Framework, DC Public Schools states, “All children, regardless of circumstances or background, can achieve at the highest levels.” If more districts were to adopt this belief as a criterion for hiring teachers, it might lead traditional education schools to emphasize the value of having high expectations for students in their teacher training curriculum.

More research should be conducted to find programs that are actively teaching pre-service teachers the importance of their perceptions of students and how to reflect those perceptions in a manner that promotes student achievement. Further research could be
conducted on ways to scale up or transfer successful programs or curricula to other teacher education programs.

As this field of research expands, researchers might consider evaluating methods used by alternative teaching programs to instill high expectations and promote positive perceptions. Alternative teaching programs such as Teach For America and the New Teacher Project place an emphasis on high expectations in their training programs. In a 2005 study of the results of a survey of Teach For America corps members, 91 percent of TFA teachers expressed a belief that schools had a responsibility to hold inner-city students to the same academic standards as their more economically advantaged peers (Smith, 2006). Ninety-three percent of corps members believed that their own expectations for students had a significant impact on student achievement, with the majority—62 percent—agreeing strongly with that statement. One first grade teacher from Phoenix explained, “Every time I have raised expectations in my classroom, students have also raised their performance” (Smith, 2006).

When Erin Swanson Oschwald, an Eastern North Carolina Teach For America staff member, was asked to describe Teach For America’s process for instilling high expectations in corps members, she explained:

To qualify for significant gains, corps members must demonstrate that their students have made 1.5 years or more of academic growth, that their students show 80 percent mastery of ambitious grade-level standards; and/or that they have reduced the gap in standardized test scores between their students and students in higher-income communities by 20 to 24 percent, depending on grade level. Given our mission, we charge corps members to lead their students to significant academic achievement, and we are deeply invested in measuring the extent to which that is happening in their classrooms.
Traditional education schools may not track how their graduates perform in the classroom because they do not have the resources to do so. Because the majority of teachers are trained in traditional education schools, it is important that traditional education schools develop methods of evaluating their graduates’ performance in the classroom on a variety of metrics, including the beliefs they hold about and the expectations they set for their students. More research should be conducted on teacher beliefs and perceptions and on how to strengthen instructional practices that encourage pre-service teachers, particularly non-minority teachers, to have positive perceptions of their students.
**BIBLIOGRAPHY**


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