

Contract No.: ED-01-CO-0039/0003  
MPR Reference No.: 8940-400

**MATHEMATICA**  
Policy Research, Inc.

**Identifying Alternative  
Certification Programs  
for an Impact Evaluation  
of Teacher Preparation**

*April 30, 2003*

*Daniel P. Mayer  
Paul T. Decker  
Steven Glazerman  
Timothy W. Silva*

Submitted to:

U.S. Department of Education  
555 New Jersey Ave., NW  
Room Number 308D  
Washington, DC 20208

Project Officer:  
Elizabeth Warner

Submitted by:

Mathematica Policy Research, Inc.  
50 Church Street, 4th Floor  
Cambridge, MA 02138  
Telephone: (617) 491-7900  
Facsimile: (617) 491-8044

Project Director:  
Daniel Mayer



## CONTENTS

Chapter	Page
I. ALTERNATIVE CERTIFICATION AS A POLICY ISSUE .....	1
A. OVERVIEW.....	1
B. THE POLICY DEBATE.....	2
II. WHAT IS ALTERNATIVE CERTIFICATION?.....	7
A. HOW DOES ALTERNATIVE CERTIFICATION DIFFER FROM TRADITIONAL CERTIFICATION? .....	7
B. HOW DO ALTERNATIVE CERTIFICATION PROGRAMS DIFFER? .....	11
1. Variation in Entrance Requirements .....	12
2. Variation in Institutions and Training Personnel .....	13
3. Variation in Training Requirements.....	14
4. Variation in Mentor Support .....	16
III. WHICH MODELS OF ALTERNATIVE CERTIFICATION WOULD BE DESIRABLE TO INCLUDE IN AN IMPACT STUDY?.....	19
A. WHAT RESEARCH QUESTIONS SHOULD GUIDE PROGRAM SELECTION? .....	19
B. SELECTING MAJOR FEATURES FOR STUDY .....	20
1. Major Features.....	20
2. Other Features .....	22
C. FOUR ALTERNATIVE CERTIFICATION MODELS.....	24
IV. CANDIDATE PROGRAMS FOR AN IMPACT STUDY .....	27

Chapter	Page
A. DEVELOPING AN INITIAL POOL OF PROGRAMS FOR POTENTIAL STUDY .....	28
B. NARROWING THE POOL .....	29
C. DETAILED DATA COLLECTIONS .....	36
D. WHAT WE LEARNED .....	37
1. Training Requirements .....	37
2. Entrance Requirements .....	38
3. Categorizing Programs .....	39
4. Participant Numbers and Locating Graduates .....	43
5. Age and Stability .....	44
E. NEXT STEPS .....	45
REFERENCES .....	47
APPENDIX A: THE EFFECT OF ALTERNATIVE CERTIFICATION ON STUDENT ACHIEVEMENT: A LITERATURE REVIEW	
APPENDIX B: EXPERT PANEL MEMBERS AND CONSULTANTS	
APPENDIX C: INTERVIEW GUIDE	

## TABLES

Table		Page
III.1	VARIATIONS OF ALTERNATIVE CERTIFICATION MODELS.....	25
IV.1	THE TRAINING AND ENTRANCE REQUIREMENTS FOR 11 ALTERNATIVE CERTIFICATION PROGRAMS.....	31
IV.2	ALTERNATIVE CERTIFICATION PROGRAMS AND MODELS THEY REPRESENT .....	40
IV.3	TRADITIONAL COURSE WORK REQUIREMENTS FOR GENERAL ELEMENTARY EDUCATION CERTIFICATION.....	42



**FIGURES**

<b>Figure</b>		<b>Page</b>
II.1	ALTERNATIVE VERSUS TRADITIONAL ROUTES TO CERTIFICATION.....	8





## **I. ALTERNATIVE CERTIFICATION AS A POLICY ISSUE**

### **A. OVERVIEW**

The past two decades have seen dramatic changes in the number of routes taken by prospective teachers to earn teaching certification. In the early 1980s, only 8 states offered what are commonly referred to as “alternative” routes for prospective teachers to obtain teacher certification, but, as of 2002, 45 states and the District of Columbia offered some type of alternative certification. By some estimates, about one-third of newly hired teachers come through alternative certification (Feistritzer and Chester 2002).

Alternative certification provides a means for bachelor’s degree holders to become the teacher of record with far less previous teacher training than that required by traditional certification programs.<sup>1</sup> The extent and specifics of the training required before and after becoming the teacher of record vary extensively across alternative certification programs. The traditional route consists of a degree program (bachelor’s or master’s degree) operated by a school or department of education that specifies a set of course requirements and other requirements that comply with the state’s teacher certification regulations.

Presumably, teacher training policy should promote student academic success, but the existing literature on alternative certification and its effects on student learning is weak. Nor does the literature provide unambiguous evidence about effective approaches to equip teachers

---

<sup>1</sup>Alternative teacher certification programs are distinct from national teacher recruitment programs such as Teach for America and Troops to Teachers. Certification programs that exist within a particular state offer training that leads to certification within that state. National recruitment programs may offer some training and support, but they funnel candidates into alternative certification programs.

for performing successfully in classrooms. To remedy this weakness, the U.S. Department of Education's National Center for Education Evaluation (NCEE) plans to launch a random assignment impact study that would provide rigorous evidence on the effectiveness of teacher preparation.

The purpose of this report is to help NCEE describe the variety of alternative routes prospective teachers take to certification and to identify those suitable for a random assignment impact evaluation. Specifically, the report addresses the following questions:

- What is alternative certification?
- How do alternative certification programs and routes differ from traditional certification programs and from each other?
- What alternative certification models would be desirable to include in an impact study?
- Which alternative certification programs and routes use these models and should be considered for inclusion in an impact study?

As we address these questions, we will keep the discussion focused by recognizing that at least three factors should be considered when launching a study: coherence, feasibility, and scale. To bring coherence to the project, it is essential to define alternative certification and to identify the variety of today's alternative certification routes. Because feasibility will influence design decisions, we focus the discussion on what is possible. Finally, we refer to resource constraints when appropriate because they will likely limit the scale of the study, forcing the study designers to make choices regarding which issues one study can ultimately address.

## **B. THE POLICY DEBATE**

The rapid change in methods of teacher certification has fueled a fierce debate over state teacher certification policy and its relationship to teacher quality (see, for example, Darling-

Hammond and Youngs 2002; Hess 2001; Kanstoroom and Finn 1999; National Commission on Teaching and America's Future 2003; U.S. Department of Education 2002; Walsh 2001). The proponents of traditional certification (TC) view alternative certification (AC) as a threat to the quality of teachers and education. They view the process of becoming a qualified teacher as similar to the process of becoming a qualified doctor, lawyer, or architect and thus requiring several years of preservice professional training before a teacher can take full responsibility for a classroom (Stoddart and Floden 1995). Darling-Hammond (1994) argues that creating alternative routes to certification permits unlicensed teachers into the classroom simply as a way to remedy teacher shortages, thereby reducing the overall quality of teaching. She has noted that teachers from the Teach for America program "often have difficulty with curriculum development, pedagogical content knowledge, students' different learning styles, classroom management, and student motivation" (p.21). Echoing the argument that substantial training is required to become a qualified teacher, a commission of 23 leaders in education policy concluded the following: "A college major or minor, or professional experience in the field, guarantees neither a command of subject matter nor the ability to teach it successfully. The knowledge base of teaching is incomplete unless candidates master not just the what of course content, but also the how of teaching as well" (National Commission on Teaching and America's Future 2003).

On the other side of the debate are those whose support for AC is based on either practical or philosophic reasons. Initially, state legislatures created AC routes to deal with teacher shortages in the areas of secondary mathematics and science. But because shortages persisted in other levels and content areas in some of the nation's rural and urban schools, states established AC routes in elementary education, special education, and bilingual education. Those who

support AC as a means of redressing teacher shortages do not necessarily view AC routes as desirable. In fact, many view alternative certification as a “last resort” to be used only when traditionally certified teachers are in short supply (Hawley 1992b). Indeed, some states make their alternative routes available to prospective teachers only in shortage areas. For example, investigations into how AC programs were structured in Nevada, Ohio, Oklahoma, and South Carolina revealed that these programs were not open to prospective elementary teachers because state officials in these states perceived no elementary teacher shortages.<sup>2</sup>

Some supporters of AC believe, however, that alternative certification should be viewed as a “first resort” rather than as a “last resort” and that removing traditional certification barriers will expand and improve the labor pool by encouraging academically talented and ethnically diverse candidates to enter the profession (Hess 2001; Kanstoroom and Finn 1999). According to a manifesto signed by 54 leaders in education policy, “The regulatory strategy [imposed by traditional certification requirements] assumes that good teaching rests on a solid foundation of specialized professional knowledge about pedagogy (and related matters) that is scientifically buttressed by solid research. In reality, however, much of that knowledge base is shaky and conflicted.” The manifesto then goes on to state, “Burdensome certification requirements deter well-educated and eager individuals who might make fine teachers but are put off by the cost, in time and money, of completing a conventional preparation program” (Kanstoroom and Finn 1999). These AC proponents argue that as long as individuals possess subject matter expertise—

---

<sup>2</sup> This suggests that local labor markets may drive the existence or nonexistence of AC programs. Further, AC program structures and their impact may vary by labor markets. This issue is not addressed directly in the present report, although, it should be considered in the design of the impact study.

gained either from their undergraduate major or their work experiences—they should be allowed to teach.

Alternative routes to certification, through their variation from traditional teacher preparation programs, offer an opportunity to study the effectiveness of preparing teachers using different forms of teacher training and yet the research on this topic is limited (see Appendix A). The first limitation is that only a handful of studies examines the relationship between teacher certification and student outcomes, and, among those studies, just two look directly at alternative certification. The others examine the effects of teachers with traditional certification relative to teachers without traditional certification, such as those who are uncertified or have emergency certification. Both the alternative certification studies and the more generic certification studies use a variety of designs and analytic techniques that yield hard-to-interpret findings regarding the effect of certification programs on student achievement. The second limitation in current research, unmeasurable differences in students across different types of teachers, is a potential problem in almost every study. For example, two studies looking at the impact of the Teach for America (TFA) program (Laczko-Kerr and Berliner 2002; Raymond et al. 2002) compared TFA teachers and their students to non-TFA teachers and their students in other schools, though the characteristics of the schools and the students within them differed considerably. More rigorous studies focused on alternative certification would offer an important contribution to the policy debate.



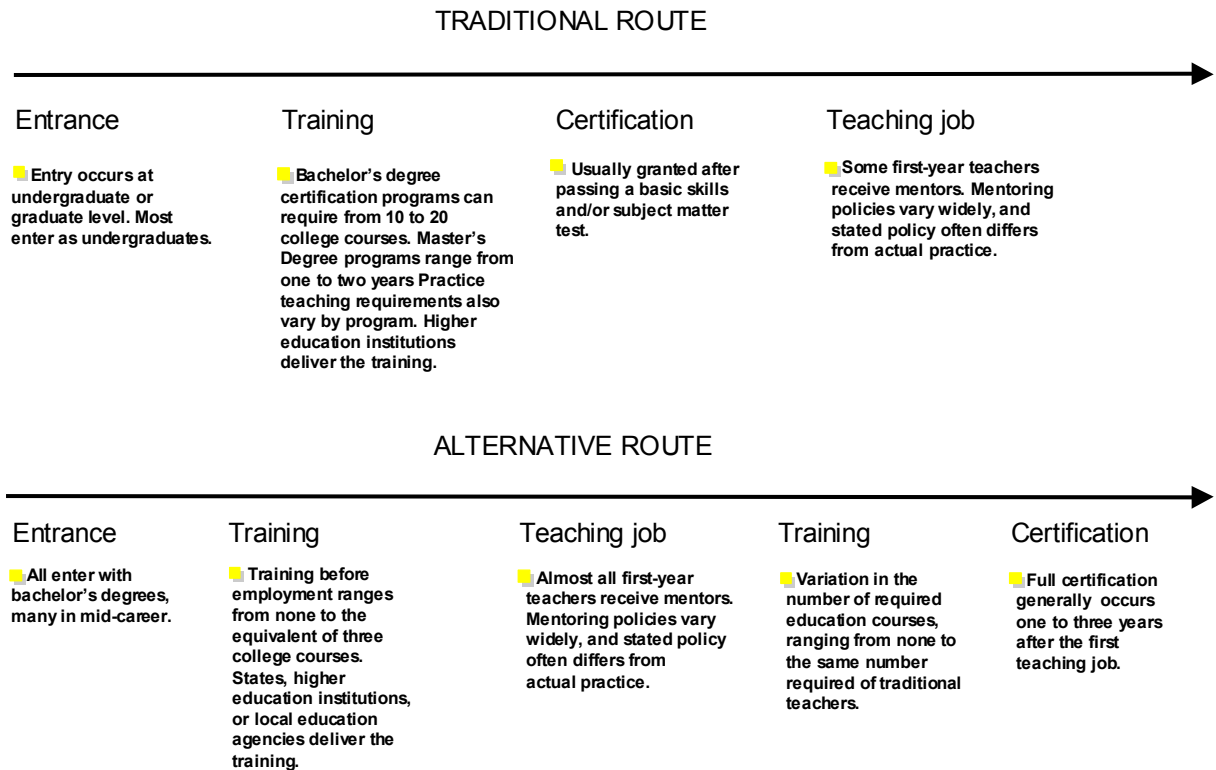
## **II. WHAT IS ALTERNATIVE CERTIFICATION?**

In this chapter, we define alternative certification in order to begin to understand what models of alternative certification might be considered for an impact study. In the first part of the chapter, we explore how AC programs differ from TC programs. In the second part of the chapter, we describe how alternative certification programs vary along several dimensions. The discussion relies on three sources of data: (1) a panel of experts and two consultants convened to offer guidance on NCEE's planning of a rigorous study (see Appendix B for a list of panel members and consultants); (2) a review of the literature describing AC and TC programs; and (3) informational interviews and document reviews conducted when identifying candidate programs for the impact study (Chapter IV provides a full description of the interview and review process).

### **A. HOW DOES ALTERNATIVE CERTIFICATION DIFFER FROM TRADITIONAL CERTIFICATION?**

Discussions with a panel of experts and two consultants convened for offering guidance on NCEE's planning of a future rigorous study and a review of the literature describing AC and TC programs (see, for example, Feistritzer and Chester 2002; Hawley 1992a; Stoddart and Floden 1995; Zeichner and Schulte 2001) reveal several critical distinctions between the TC and AC routes, including, most notably, the type of candidates who take the routes, the timing of their training, the amount of training received by candidates, the type of institutions delivering the training, and the nature and amount of support received during teachers' first year of teaching. Figure II.1 presents these distinctions.

**FIGURE II.1**  
**TRADITIONAL VERSUS ALTERNATIVE ROUTES TO CERTIFICATION**



On average, the entrants to AC programs differ from TC program entrants in that they are often older and more ethnically diverse (Zeichner and Schulte 2001). One reason for the differences is that AC programs are geared toward older candidates. As Figure II.1 notes, the typical TC candidate receives full certification by completing either an undergraduate or graduate program. National data reveal that most receive their certification as undergraduates.<sup>3</sup>

<sup>3</sup> Our own analyses of the 1999–2000 School and Staffing Survey (SASS), a nationally representative data set, reveals that among public school teachers with three or fewer years of experience, 69 percent of elementary, 62 percent of middle, and 58 percent of high school teachers received full certification as part of a bachelor's degree program.



In contrast, AC programs exclusively target those who already possess a bachelor's degree and often target those seeking to make a mid-career transition into teaching.

Figure II.1 also illustrates a controversial aspect of alternative certification; *before* taking their first full-time teaching job, alternatively certified teachers undergo virtually no training. Some argue that a lack of initial training for AC candidates is acceptable because candidates are screened for subject matter competence before admission (for example, the screen requires candidates to major or minor in the field in which they will teach, to possess relevant work experience, or to pass a subject matter test) (Stoddart and Floden 1995).

Specifically, before they take their first job, AC candidates take minimal to no teaching-related courses (such as courses in pedagogy, child development, and classroom management), and generally engage in, at most, a few weeks of practice teaching. While the typical AC program requires AC candidates to attend workshops or take university courses during the first year of teaching (and sometimes second and third years of teaching), candidates are not fully certified for one to three years after first entering the classroom.<sup>4</sup> In contrast, traditionally certified teachers complete a full battery of teaching-related courses, participate in an average of 14 weeks of student teaching, and receive their full certification before becoming a full-time teacher (Feistritzer 1999).

Figure II.1 does indicate that some training does take place after AC teachers start teaching, although frequently AC candidates receive less cumulative training than TC candidates (Stoddart and Floden 1995). As discussed more fully in the next section, the amount of training required

---

<sup>4</sup>Definitions and certification titles vary from state to state. In this report, “fully certified teachers” refers to those teachers who completed all of a state’s required course work and passed all state licensing examinations.

by AC programs varies tremendously. Informational interviews and document reviews found that course work requirements range from none to the equivalent of 12 to 15 postsecondary courses. The latter is equivalent to the requirements that traditionally certified candidates must satisfy.

In addition to differences in the timing and amount of training, different types of institutions and instructors often operate AC and TC programs. Traditionally certified candidates usually receive their training from institutions of higher education and are taught by professors of education. In contrast, a variety of institutions and professionals offer alternative certification programs. The institutions include local education agencies, state departments of education, higher education institutions, and partnerships between or among two or all three of these institution types. Furthermore, AC training courses are commonly taught by school administrators, principals, or certified teachers as well as by professors of education.

Some members of the expert panel convened for this project argued that the content of university-based and -led programs can be too academic and thus removed from the needs of high-poverty school districts. In turn, teachers prepared in these programs are not always adequately trained to meet the needs of students in these districts. But the limited literature exploring differences in TC and AC program content does not identify institutional sponsorship as a key factor behind variation in program content; instead it points to two alternative explanations for content variation. First, given that AC candidates come to their programs possessing subject matter expertise—gained either from their undergraduate major or their work experiences—AC programs often place less emphasis on content courses than do TC programs (Stoddart and Floden 1995). Second, while both AC and TC programs often require courses in pedagogy, child development, and classroom management (Stoddart and Floden 1995; Zeichner and Schulte 2001), the timing of the training determines what is emphasized. Because AC

participants, in contrast to their TC counterparts, are engaged in full-time teaching while participating in training, alternative programs “tend to focus on the programmatic aspects of teaching—what to do tomorrow and how to survive one’s first year of teaching—more than the theoretical or philosophic aspects of teaching and learning.”

Finally, Figure II.1 shows that the support structure provided to AC and TC teachers in their first year of teaching can vary. Given that AC candidates receive little training before becoming the teacher of record, it is not surprising that almost all AC programs assign mentors (Feistritzer 2002).<sup>5</sup> Mentors usually are veteran teachers who are assigned to beginning teachers to help them learn their trade as well as the philosophy and cultural values of their school. In contrast to AC programs, not all school districts and states assign mentors to beginning TC teachers (Weiss and Weiss 1999; National Association of State Directors of Teacher Education and Certification 2002). However, concerns about high attrition rates among all types of beginning teachers has led to a general expansion of induction and mentoring programs (Weiss and Weiss 1999; Mayer et al. 2000). As of 2002, 27 states and the District of Columbia operated formal beginning teacher support systems, although participation was voluntary in nine of the states (National Association of State Directors of Teacher Education and Certification 2002).

## **B. HOW DO ALTERNATIVE CERTIFICATION PROGRAMS DIFFER?**

The literature (see, for example, Feistritzer and Chester 2002; Hawley 1992a; Humphrey et al. 2002; Stoddart and Floden 1995; Zeichner and Schulte 2001) also reveals that alternative certification programs themselves vary along several dimensions. The four most prominent dimensions of variation are: (1) entrance requirements, (2) the institutions that operate the

---

<sup>5</sup> Variation among AC mentoring programs will be discussed in the next section.

programs and conduct the training sessions, (3) the amount of teaching-related course work candidates must complete, and (4) the level of mentorship support provided to the teachers during their initial year of teaching.

No nationally representative data on AC programs exist, making it impossible to know characteristics of AC programs precisely. While Feistritzer and Chester have provided a national perspective on AC programs in their annual overview of state alternative certification routes (see, for example, *Alternative Teacher Certification: A State-by-State Analysis 2002*), their reports provide data only on AC routes *legislated* by states and not on the operation of individual *programs* that follow particular AC routes. The Texas Alternative Teacher Certification route provides a useful example. Under this plan, a variety of institutions such as school districts, higher education institutions, and state-run regional education service centers (ESCs) may design and run AC programs. Each program has the ability to vary its entry requirements, the duration of training, and the professional staff; however, Feistritzer and Chester do not attempt to delineate such variation. Recognizing that the national data are limited, we draw upon a variety of sources (such as AC program Web pages, articles, books, and interviews with program administrators and state officials) to compare AC programs along the four dimensions mentioned above.

## **1. Variation in Entrance Requirements**

Entrance requirements vary from less selective to very selective. Document reviews and informational interviews reveal that while all programs we reviewed require candidates to hold a bachelor's degree, noncompetitive programs look much different from their competitive counterparts. An example of a noncompetitive program is the Arkansas Non-traditional Licensure Program. It imposes no GPA requirement and requires all candidates to submit a one-

page essay, participate in a 10- to 15-minute interview, and pass the Praxis I and II examinations.<sup>6</sup> Almost all applicants meeting these requirements are accepted. At the other end of the spectrum are competitive programs such as the Prince George's County Residency Teacher Program. Applicants to this program must demonstrate a 3.0 GPA, pass a teacher skills test, and fulfill course content prerequisites in mathematics, English, science, and social studies. In addition, applicants must participate in an extensive interview process that includes a mock teaching lesson, a group interview in which several candidates come together in one room to respond to interview questions, and a one-on-one interview between candidates and a program administrator.

## **2. Variation in Institutions and Training Personnel**

Interviews and document reviews reveal that the type of institutions running AC programs and the type of personnel conducting the training sessions also vary. Some programs, such as those in New York State's Alternative Teacher Certification--Transitional B program, are run by institutions of higher education, with education school faculty teaching the courses. Other programs, such as the Texas Region XIII program, are operated by the state. Region XIII staff deliver approximately 70 percent of the instruction while local university professors or local school district personnel deliver the remaining 30 percent. Even within a given program, however, differences in who conducts the courses at various sites can be observed. New Jersey's Alternate Route Program is run by the state, for example, but the 10 colleges and 3 consortia of

---

<sup>6</sup>The Praxis examinations were developed by the Educational Testing Service and consist of three assessments for beginning teachers. The assessments are Praxis I: Academic Skills Assessments; Praxis II: Subject Assessments; and Praxis III: Classroom Performance Assessments. State education agencies commonly use these examinations in making licensing decisions.

colleges and districts running the training classes have some discretion in how they staff their classes. While district-level administrators teach all of the classes run by the Essex County Consortium (a consortium of the Newark and Montclair public schools and Montclair State University) at Saint Peter's College, many of the program's instructors are staff and faculty associated with the college's graduate education program.

### **3. Variation in Training Requirements**

The amount of classroom instruction AC candidates must receive before obtaining full certification varies substantially among AC programs. In addition, as noted above, the literature and the expert panel point to content differences between AC and TC programs. However, less has been written about how the curricular content differs among AC programs. In general, our interviews with AC program administrators revealed that although the amount of course work varied among programs, the general topics covered in courses varied little and generally included courses in pedagogy, child development, and classroom management

Informational interviews and document reviews found that AC course work requirements range from none to the equivalent of 12 to 15 university courses. The latter is equivalent to the requirements that traditionally certified candidates must satisfy. Given AC advocates' argument that teaching methods courses provide little substance and add burdensome requirements that deter talented prospective teachers, variation in course requirements is of particular policy relevance.

In view of the three types of courses that AC candidates typically take (university courses, summer institutes, and weekly workshops), measuring the amount of course work required by an AC program and translating it into university credit equivalents can be a tricky exercise. University course requirements are generally measured in course credits or credit hours while

AC summer institutes and AC weekly workshop requirements are generally measured in contact hours. Despite rules of thumb for converting a course credit into a contact hour (one credit equals 15 hours), equating a four-week, 180-hour summer course with four college courses (assuming three credits for the typical college course) does not seem appropriate. However, a college course that meets for a few hours each week over the course of a semester could be equated with AC workshops that meet weekly over a similar period of time.<sup>7</sup>

On one end of the teaching-related course requirement spectrum is a program such as the Georgia Teacher Alternative Preparation Program (TAPP) that requires AC candidates to take 54 credits of education courses (13 courses). Converted into contact hours, the requirement totals 810 contact hours. The substantial course load model appears in other states, including California, New York, Illinois, and Mississippi. At the other end of the spectrum is Florida's new competency-based certification option that requires no education school course work. The Florida model is rare, although several programs require minimal education course loads. For example, the New Jersey Alternate Route Program requires no summer training and only 200 contact hours of instruction over one academic year. The requirement is the equivalent of four three-credit college courses. Similarly, the Arkansas Non-traditional Licensure Program requires elementary school candidates to take two academic courses at a university, 42 hours of workshops during the first and second year of teaching, and two summer courses of 70 hours (one the first summer before the initial teaching experience and the other the following summer). Excluding the two summer courses, the Arkansas model requires the equivalent of four university courses.

---

<sup>7</sup>However, as noted above, at least one study suggests that the academic rigor of workshops might be significantly less than that of college courses (Stoddart 1990).

#### 4. Variation in Mentor Support

The expert panel, informational interviews, and the literature indicate that virtually all AC programs require their teachers to be mentored by a certified teacher during their initial year of teaching. These sources also revealed that the mentoring programs can take different forms. How much the mentors are paid, whether they receive any training, and how often they meet with their mentees vary from program to program.

Zeichner and Schulte (2001), in their review of 21 studies examining 13 AC programs, noted that each program included mentoring. The level of mentoring varied from programs that hired full-time mentors to programs that used teachers or faculty on a part-time basis. We also found that all 11 AC programs interviewed for this report (a complete list is presented in Section IV) had mentoring components. In all programs, the mentors worked in the same school as the AC teachers; however, some programs also relied on additional outside advisors who visited the schools and provided extra guidance. The level of compensation for the in-school mentors ranged from \$300 in the Texas Region XIII program to \$1,200 in the Arkansas state program.

The expert panel, the literature, and our interviews reveal a disjuncture between stated mentorship policies and actual practice: often the policies call for more interactions between the mentors and AC candidates than actually occur. Several program administrators pointed to a challenge in finding mentors for AC candidates. In addition, how often and when mentors and mentees meet—*regardless of stated policy*—is often beyond the control of an AC program. Implementation ultimately appears to depend on the policies set by school principals regarding release time and the level of enthusiasm and commitment on the part of individual mentors.

In this chapter, we defined alternative certification and identified the four most prominent dimensions of variation among AC programs. In the next chapter, we examine how we can use



the dimensions of variation to construct compelling models of AC so that we may begin the process of identifying AC programs for inclusion in an impact study.



### **III. WHICH MODELS OF ALTERNATIVE CERTIFICATION WOULD BE DESIRABLE TO INCLUDE IN AN IMPACT STUDY?**

This chapter proposes models of alternative certification to consider for inclusion in the impact study. It begins by discussing the types of research questions that could guide program selection. Next, it considers features of AC programs that are central both to the policy debate and the design of an impact evaluation. The chapter concludes by highlighting four alternative certification models that embody the selected features of AC programs.

#### **A. WHAT RESEARCH QUESTIONS SHOULD GUIDE PROGRAM SELECTION?**

Fundamental to designing an evaluation of alternative certification is the selection of alternative certification programs for inclusion in the study. Three research questions could potentially guide program selection:

1. Are AC teachers as effective as TC teachers?
2. Are specific AC programs related to effectiveness?
3. Are specific features of AC programs related to effectiveness?

A study focused on a simple yet broad comparison of AC and TC teachers could address question one. Although interesting, such a study would have limited usefulness for informing policy. A major limitation is that both the AC and traditional labels cover a wide range of program variations, with considerable overlap between the two program categories. For example, Grover J. (Russ) Whitehurst, director of the Institute of Education Sciences, suggested at the expert panel meeting that looking at the impact of AC programs in general may not be all that interesting because of the extent of variation that exists among these programs. In essence, any study that lumps together all alternative certification routes and treats them as a single

strategy will be especially unsatisfying to policymakers looking for guidance on how to construct effective alternative certification routes.

To address question two, the study would focus on measuring the impact of one or two popular or promising alternative programs as compared with traditional certification routes. Focusing the study on one or two AC programs would result in an easily interpretable result. For example, such a study would reveal whether the particular programs generate teachers who are or are not more effective than teachers entering the profession from traditional routes. However, the study would be limited in scope because it would generalize only to a few particular programs and it would not inform the debate about effective program features and thus would not warrant investment in a rigorous experiment.

To address question three, a study would need to focus primarily on how teacher effectiveness varies according to the features of the routes that bring teachers into the classroom. Given the amount of variation in AC routes, policymakers would likely prefer such an approach as it would inform policymakers and AC programs administrators about the ingredients of successful AC programs. Given that a study designed around question three would yield insights into the elements of successful AC programs, we conclude that a study focusing on AC program features represents the most desirable approach. Therefore, we turn to an assessment of which major features of AC programs to use to identify AC models.

## **B. SELECTING MAJOR FEATURES FOR STUDY**

### **1. Major Features**

What are the most compelling models of AC to study? In Chapter II we identified four prominent dimensions of variation (entrance requirements, amount of training, the institutions delivering the training, and the amount of support provided during the first year of teaching) that

characterize AC programs. Although each dimension has policy relevance and merits examination, two stand out for an evaluation of alternative certification: (1) the amount of required teaching-related coursework, and (2) entrance requirements.

The amount of training required by AC and TC programs is critical to the debate over certification and teacher effectiveness. Some consider the required education coursework associated with traditional routes and some AC routes as unnecessarily burdensome (Finn 2003; Hess 2001; U.S. Department of Education 2002). These same critics argue that excessive coursework provides little benefit to those who take the courses and creates a disincentive for talented individuals to enter the teaching profession. On the other side of the argument, supporters of such coursework argue that reducing these course requirements will diminish the quality of the teaching force. In view of the wide variation in AC training requirements, policymakers have an opportunity to use this variation and select programs for study with substantially different training requirements. Furthermore, the findings from a study of the variation in coursework requirements will have direct implications for the ongoing debate surrounding such requirements.

The other major dimension to be considered in alternative certification programs is the degree to which programs are selective in their recruitment of teacher candidates. As noted, entrance requirements vary from less selective to very selective.<sup>8</sup> Ignoring this fact increases the

---

<sup>8</sup> Both highly selective and less selective types of programs employ selection strategies based on the assumption that certain characteristics, independent of the training program, will influence how well teachers learn in certification programs and perform in the classroom. By screening out teachers who do not demonstrate the desired characteristics, programs expect to increase the odds that their candidates will become successful teachers. Programs may screen for different types of characteristics. For example, one program may place more emphasis on verbal skills and another on interpersonal skills. We propose (in Chapter IV) using the proxy measures

odds that the study findings will confound the entrance requirements of a program with the training requirements of a program. For example, a given alternative certification route that requires minimal coursework requirements may still produce superior teachers because the route selects candidates with strong academic talents. By selecting programs with different types of entrance requirements, the study can reduce the confounding effects and help isolate the impacts of each program feature. In turn, the selection of programs with different entrance requirements will make the study more useful to policymakers because they will be able to assess whether the findings concerning the amount of training generalize to highly selective or less selective programs.<sup>9</sup>

## **2. Other Features**

The institutions delivering the training and the amount of support (mentoring) provided during the first year of teaching are also important features of AC programs, but they are less

---

*(continued)*

of GPA and the intensity of the interview process to capture these dimensions. While these measures will not perfectly capture the selection process used by programs, they are preferable to ignoring selectivity altogether.

<sup>9</sup> Controlling for program selectivity features of various AC programs is not the same as controlling for the fact that AC programs in general are intended to expand the labor pool by encouraging more academically talented and ethnically diverse candidates to enter the profession (Hess 2001; Kanstoroom and Finn 1999). In addition, as noted above, AC candidates are, on average, older than TC candidates. Unless teachers are randomly assigned to their certification programs (an impractical design), there is no way of completely eliminating these selection effects. Thus, a study of AC programs will likely produce estimates that confound three effects: (1) the program's or program model's ability to select able candidates from an expanded labor pool; (2) its ability to retain able enrollees; and (3) its ability to prepare teachers well for teaching. Because the mode of selecting and retaining candidates for the duration of an AC program is such an integral part of a program's approach, we see limited value in forcing a study design to disentangle them. Therefore, a study designed to estimate the full impact of a program strikes the best balance between feasibility and policy relevance.

useful program selection criteria than entrance selectivity and amount of training. After discussing the issue with the expert panel and our consultants, and reviewing the literature, we decided for two reasons to recommend against using institutional sponsor as a selection criterion. First, the most visible and intense AC policy debates are not concerned with institutional sponsorship (see, for example, Kanstoroom and Finn 1999; National Commission on Teaching and America's Future 2003; U.S. Department of Education 2002). Second, although some members of the expert panel and some of the literature note that sponsorship can influence content emphasis, the literature suggests that differences in content *between* AC and TC programs are more pronounced than differences *among* AC programs. (TC program content tends to be more academic while AC program content is more applied, and structured to help candidates understand the issues they confront daily in the classroom.)

Support during the first year of teaching, if provided, usually involves assigning mentors. The literature devotes ample attention to mentoring, which is frequently featured prominently in policy discussions (see, for example, Hess 2001; National Commission on Teaching and America's Future 2003; U.S. Department of Education 2002). While we considered including mentoring as a selection criterion, three reasons persuaded us that the case for doing so was less compelling. First, the importance of mentoring is not a contested issue. Most supporters and opponents of AC agree on its importance. Second, as mentoring programs expand for TC teachers, the differences between TC and AC on this dimension shrink and become less compelling to study. Third, categorizing and selecting programs by their mentorship policies and support systems is impractical because, as noted above, what AC programs say they do regarding mentoring and what they do in practice often do not correspond. Some programs state,

for example, that monthly meetings take place between mentors and mentees; in fact, the number of meetings may vary dramatically by school or mentor.<sup>10</sup>

### **C. FOUR ALTERNATIVE CERTIFICATION MODELS**

The previous discussion argued why entrance requirements and amount of training should be used to categorize and select programs for study. This section presents four models of programs based on entrance requirements and training and discusses why including one or more of the models in an impact study will address important policy issues. Table III.1 identifies four models that capture a diverse set of potential AC programs that allow us to examine the effectiveness of teachers coming through the following program types:

1. Very selective programs that require minimal training (Model A)
2. Less selective programs that require minimal training (Model B)
3. Very selective programs that require substantial training (Model C)
4. Less selective programs that require substantial training (Model D)

Models A and B (the top row) represent programs that require only minimal training while Models C and D (the bottom row) represent programs that require almost as much training as TC programs. Several AC advocates (Finn 2003; Hess 2001; U.S. Department of Education 2002) prefer Models A and B to Models C and D because, they claim, the latter group contains unnecessary course requirements. Models A and C (the left-hand column) differ from Models B and D (the right-hand column) in that the former set imposes more selective entrance

---

<sup>10</sup> Given the important role that mentor support may play, it is advisable to measure the amount of support received by teachers in the study and then account for it in the study's impact analyses.



requirements than the latter set. As noted above, policymakers and others interested in this study will likely want to know whether the findings generalize to highly or less selective programs.

The four models can be used in at least two ways to address different policy questions. One approach is to select one model and examine the effectiveness of the teachers trained under that model as compared to traditionally trained teachers. This approach will allow for a rigorous experimental study examining the effectiveness of teachers who are alternatively certified in accordance with a particular type of AC approach and will shed light more generally on effective teacher training. Given the intensity of the debate over the effectiveness of programs with minimal training requirements, a strong argument exists for focusing on either Model A or Model B.

TABLE III.1  
VARIATIONS OF ALTERNATIVE CERTIFICATION MODELS

		Entrance Requirements	
		Very Selective	Less Selective
Amount of Training	Minimal	Model A	Model B
	Substantial	Model C	Model D

If sufficient resources are available, a second approach would involve examining the impact of two or more models with different levels of training or selectivity. This approach would be similar to conducting a series of rigorous experimental substudies that examine the impact of each model. The impacts can then be compared to gauge the relative impact of models with different features. For example, the impact of very selective, minimal training programs (Model A) could be compared to the impact of very selective, substantial training programs (Model B).

Or the impact of less selective, minimal training programs (Model C) could be compared to the impact of less selective, substantial training programs (Model D). While these comparisons can provide further insights into the relative impact of different types of models, the comparisons will not be experimental and will not provide an estimate of the added value of particular program features.

A study examining the value added of different features of AC models would require the random assignment of teacher candidates to different AC models or the random assignment of students to teachers trained by different AC models. Both of these designs might be impractical for different reasons. The former would be difficult to implement because it would require teacher candidates to be randomly assigned to their AC training programs. The later approach would be difficult to implement because it would require identifying schools that have teachers who are both trained by different AC models and teach at the same grade level.

#### IV. CANDIDATE PROGRAMS FOR AN IMPACT STUDY

In this chapter, we present information on 11 programs that could be considered for inclusion in an impact study. We describe how we selected the programs and what information we gathered from them. Next, we assign the programs to the four models we identified. We then conclude by noting some next steps that might be taken during the design phase of the study. We based our identification of candidate programs for an impact study on four considerations central to the design of such a study. First, the study design should call for randomly assigning students to teachers from different certification programs. High school and middle school classrooms are usually divided by ability levels, thus making random assignment of students to teachers impractical at these grade levels. In contrast, random assignment of students is more likely to be acceptable in elementary schools where teachers often teach mixed-ability classes. Therefore, it seems advisable to narrow the list of possible AC programs to those that accept prospective elementary school teachers. Based on our contact with a sample of states, it is clear that some states do not offer elementary teachers an AC route.<sup>11</sup>

The second consideration was to prioritize, given limited resources, which types of programs to contact as part of the planning effort. In consultation with NCEE it was decided that most of the programs we contacted should have minimal education course requirements (Models

---

<sup>11</sup>The states excluding elementary teachers from their AC programs include Nevada, Ohio, Oklahoma, and South Carolina. In Pennsylvania, only the Philadelphia public schools accept elementary AC candidates. According to representatives from these states' credentialing offices, the lack of an AC elementary route is attributable to the fact that the states are not experiencing shortages of certified elementary teachers.

A and B), although we included two substantial education course requirement programs (Models C and D) for comparison.

The third consideration was whether there would be a sufficient number of graduates to yield reliable impact estimates. Fourth, given the cost of recruiting school districts to participate in the study, it would be desirable to locate teachers from AC programs who are teaching in either one school district or two or more nearby districts.

#### **A. DEVELOPING AN INITIAL POOL OF PROGRAMS FOR POTENTIAL STUDY**

We began our work by trying to identify as many AC programs as possible with minimal education requirements. (At that point, “minimal” was defined as requiring substantially fewer education courses than the typical TC program.) We took several steps to identify an initially large pool of programs:

- We consulted with each of the expert panel members with substantive knowledge of AC programs and with the two consultants who were knowledgeable about variation in AC program design.
- We reviewed the data for each of the 131 AC routes listed in Feistritzer and Chester (2002).
- We contacted the senior managers of three national recruitment programs whom had in-depth knowledge of state certification laws: John Gantz of Troops to Teachers (also an expert panel member); Wendy Kopp, president of Teach for America; and Jessica Levin, chief knowledge officer of the New Teacher Project.
- We contacted 18 regional Teach for America project directors representing 16 states and the District of Columbia as well as selected New Teacher Project and Troops to Teachers regional directors who were recommended to us by our national contacts. We asked the regional contacts to answer the following questions by e-mail: What are the names of the alternative certification programs that elementary candidates rely on in your region or state? How many education courses (or credit hours) does an elementary candidate need to take before receiving full certification from these programs?

To verify whether the initial pool of programs we read or heard about did in fact have lighter training requirements than typical TC programs, we called state certification offices, examined requirements posted on state and program Web pages, or made brief calls to program administrators. Through this process, we winnowed some programs from the original pool. For example, while we expected that Nevada, Ohio, Oklahoma, and South Carolina had minimal training requirements, we learned that they lacked AC routes at the elementary level. Other states, such as Virginia and Kentucky, have minimal training routes that are open to prospective elementary candidates; however, elementary candidates rarely avail themselves of these routes. For other states, such as Mississippi and Georgia, our initial information about minimal training requirements was incorrect.

## **B. NARROWING THE POOL**

We identified six states with legislation that allows AC programs to provide participants with a level of training (instructional hours) that we defined as relatively “minimal”: Arkansas, Florida, Louisiana, Maryland, New Jersey, and Texas.<sup>12</sup> In Arkansas and Florida we identified only one type of minimal program, making our choice clear.<sup>13</sup> In Louisiana we originally

---

<sup>12</sup>Other states might allow minimal AC programs, but we identified none in the written sources we reviewed or heard of none mentioned by the experts we contacted. Given that Feistritzer and Chester (2002) list 79 non-emergency elementary AC routes, yet we were able to identify only six routes with minimal education course requirements, the suggestion is that substantially more routes have education course requirements in line with traditional certification programs. As noted earlier, we chose two of these to include as an illustration of how they differ from the minimal routes. One of the selected routes is the well-established and large Los Angeles District Intern program; the other is the relatively new Atlanta Preparing Leaders for Urban Schools (PLUS) program.

<sup>13</sup> Arkansas’s program is run by the state, which contracts with four different providers to deliver the training in different regions of the state. The state will be adding more providers next year. The Florida program helps candidates earn certification through the state’s newly created

believed that only one minimal program existed, but after interviewing a representative of that program we learned that other programs existed in the state that might be worth studying.<sup>14</sup> In California, Maryland, New Jersey, and Texas, each of which operates several programs, we decided to focus on the largest programs, which typically operate in major cities.<sup>15</sup>

Within the resources available to us, we were able to gather detailed information on 11 AC programs.<sup>16</sup> Table IV.1 lists the 11 programs we focused on for this exploratory study.

---

*(continued)*

competency-based route. In existence for only one year, the Florida program is unique in that teachers can become certified without applying to and receiving training from a program. To become certified, candidates take an examination, are hired to teach, and then have up to three years to pass an assessment system developed by the state.

<sup>14</sup> We interviewed an administrator from the privately run The New Teacher Project's Practitioner Teacher Program. In 2000, Louisiana's Practitioner Teacher Program was piloted at 7 institutions of higher education and 1 private provider and is expanding to 12 higher education institutions and 2 private providers next year. The largest postsecondary programs, according to a Louisiana Department of Education official, are the University of New Orleans, Nicholls State University, and Louisiana College.

<sup>15</sup>For the purpose of this study, we considered New Jersey as operating one AC program. Indeed, the New Jersey program is state-run and has statewide uniform education course load requirements and program entrance requirements. However, AC participants in New Jersey are assigned to one of 13 regional program providers (10 are run by colleges, 3 by consortia of colleges and districts) that in turn offer training at a total of 85 local training centers. To develop our understanding of this system and to identify areas of the state that may have the largest clusters of AC program graduates, we interviewed program officials and local school district officials in or near three cities: Newark (the Essex County Consortium program operated by Montclair State University and Newark Public Schools), Jersey City (served by the Essex consortium and by a program operated by Saint Peter's College), and Trenton (program operated by The College of New Jersey).

<sup>16</sup>We were unable to establish whether one state that might meet our definition of minimal training had any active elementary AC candidates. Pennsylvania's Teacher Intern route requires minimal training, but the chief of the state's Division of Certification noted that only the Philadelphia public schools can accept elementary AC candidates through this route. Whether any AC elementary candidates were using this option was not clear, however. Other researchers may want to consider gathering more information on the Teacher Intern route in the future.

TABLE IV.1

## THE TRAINING AND ENTRANCE REQUIREMENTS FOR 11 ALTERNATIVE CERTIFICATION PROGRAMS

<b>Program Name</b>	<b>Year Program Started</b>	<b>Education Training</b>	<b>Program Entrance Requirements/Selectivity</b>	<b>Elementary AC Enrollees per Academic Year</b>
<b>Arkansas Non-traditional Licensure Program</b>	1987	<ul style="list-style-type: none"> <li>• 2 weeks of workshop instruction during summer before first- and second-year teaching</li> <li>• 7 one-day workshops during first- and second-year teaching</li> </ul>	<ul style="list-style-type: none"> <li>• No GPA requirement</li> <li>• Pass Praxis I basic skills assessment and Praxis II content knowledge assessment</li> <li>• 10- to 15-minute interview</li> <li>• Program is noncompetitive</li> </ul>	Statewide <sup>b</sup> 2000–2001: 16 2001–2002: 42 2002–2003: 102
<b>Atlanta Preparing Leaders for Urban Schools (PLUS) Program</b>	2002	<ul style="list-style-type: none"> <li>• 240 workshop hours of instruction and summer school teaching experience before the first teaching job</li> <li>• 30 credits of graduate-level courses during full-time teaching</li> </ul>	<ul style="list-style-type: none"> <li>• 2.5 GPA<sup>g</sup></li> <li>• Passing score on all 3 parts of Praxis I assessment</li> <li>• Extensive interview process with sample teaching lesson</li> <li>• For the 2002–2003 school year approximately 1,000 applications (includes primary and secondary) were received, 325 applicants were interviewed, and 78 applicants were accepted into the program</li> </ul>	2002–2003: 36
<b>Baltimore City Teaching Residency Program</b>	2002	<ul style="list-style-type: none"> <li>• 240 workshop hours during summer before the first teaching job</li> <li>• 1 college course during summer before the first teaching job</li> <li>• 4 college courses during the first year of teaching</li> </ul>	<ul style="list-style-type: none"> <li>• 3.0 GPA</li> <li>• 6 undergraduate credits in mathematics, English, science, and social science</li> <li>• Extensive interview process with sample teaching lesson</li> <li>• 109 of 567 applicants were admitted last year</li> </ul>	2002–2003: 37

TABLE IV.1 (continued)

<b>Program Name</b>	<b>Year Program Started</b>	<b>Education Training</b>	<b>Program Entrance Requirements/Selectivity</b>	<b>Elementary AC Enrollees per Academic Year</b>
<b>Dallas Independent School District Alternative Certification Program</b>	1986	<ul style="list-style-type: none"> <li>6 college credits before the first teaching job</li> <li>3 college credits while teaching</li> <li>120 workshop hours during summer before the first teaching job</li> <li>60 to 80 mid-year workshop hours during the first year of teaching</li> </ul>	<ul style="list-style-type: none"> <li>2.5 GPA (or 2.75 in last 60 hours of college work)</li> <li>At least 24 credit hours of total college work in mathematics, science, social studies, and English</li> <li>Pass state basic skills test</li> <li>Haberman interview (also write essay same day)<sup>f</sup></li> <li>Pass an English proficiency test</li> <li>Approximately 60 percent of applicants who met program requirements were accepted during the last two years<sup>c</sup></li> </ul>	2001–2002: 189 2002–2003: 249
<b>Florida Atlantic University (Broward County)</b>	2002	<ul style="list-style-type: none"> <li>150 workshop hours during summer before the first teaching job</li> </ul>	<ul style="list-style-type: none"> <li>2.5 GPA</li> <li>15- to 20-minute interview</li> <li>40 of 60 applicants (includes primary and secondary) were accepted into the program last year</li> </ul>	2002–2003: 27
<b>Houston Independent School District Alternative Certification Program</b>	1986	<ul style="list-style-type: none"> <li>2 to 3 college courses during summer before the first teaching job</li> <li>2 to 3 college courses during the first year of teaching</li> <li>130 workshop hours during summer before the first teaching job</li> <li>45 mid-year workshop hours during the first year of teaching</li> </ul>	<ul style="list-style-type: none"> <li>2.5 GPA</li> <li>Pass state basic skills test</li> <li>Undergraduate credits in mathematics, English, and science</li> <li>Application includes essay questions</li> <li>Gallup interview<sup>f</sup></li> <li>52 percent of applicants were accepted into the program during the last two years</li> </ul>	2001–2002: 307 2002–2003: 308 <sup>d</sup>



TABLE IV.1 (continued)

Program Name	Year Program Started	Education Training	Program Entrance Requirements/Selectivity	Elementary AC Enrollees per Academic Year
Los Angeles Unified School District, District Intern Program	1984	<ul style="list-style-type: none"> <li>240 workshop hours of instruction before the first teaching job (beginning 2003; 120 hours previously)</li> <li>512 workshop hours of instruction during the first 3 years of teaching (previously, first 2 years of teaching)</li> </ul>	<ul style="list-style-type: none"> <li>2.7 GPA</li> <li>Specified number of college units in various areas (literature, mathematics, science, history, arts, and so forth) with a grade of C or better</li> <li>Pass state basic skills test</li> <li>Pass state content assessment</li> <li>One-on-one 20-minute interview using custom instrument</li> </ul>	2001–2002: 382 2002–2003: 382
Louisiana's The New Teacher Project's Practitioner Teacher Program (PTP)	2001	<ul style="list-style-type: none"> <li>12 hours of classroom observations plus written responses to questions before the summer institute</li> <li>150 workshop hours of instruction during summer before the first teaching job</li> <li>150 workshop hours of instruction during the first year of teaching</li> </ul>	<ul style="list-style-type: none"> <li>2.5 GPA</li> <li>Pass Praxis Pre-Professional Skills assessment (e.g., reading, writing, mathematics)</li> <li>Pass the Praxis content specialty assessment for the area(s) of certification</li> <li>Extensive interview process with sample teaching lesson</li> <li>17 percent of applicants (includes primary and secondary) were accepted into the program last year</li> </ul>	2001–2002: 74 <sup>e</sup> 2002–2003: 64
New Jersey Alternative Route Program <sup>a</sup>	1984	<ul style="list-style-type: none"> <li>200 workshop hours of classroom instruction during the first year of teaching</li> </ul>	<ul style="list-style-type: none"> <li>2.5 GPA</li> <li>Pass Praxis II assessment</li> <li>Promise of employment from a school</li> <li>Neither the local training programs nor the state interviews candidates</li> <li>Program is noncompetitive</li> </ul>	Newark 2000–2001: 132 2001–2002: 135 2002–2003: 23  Trenton 2000–2001: 19 2001–2002: 13 2002–2003: 18

TABLE IV.1 (continued)

Program Name	Year Program Started	Education Training	Program Entrance Requirements/Selectivity	Elementary AC Enrollees per Academic Year
<b>Prince George's County Residency Teacher Program</b>	1999	<ul style="list-style-type: none"> <li>135 workshop hours during summer before the first teaching job</li> <li>3 college courses during the first year of teaching</li> </ul>	<ul style="list-style-type: none"> <li>3.0 GPA</li> <li>6 undergraduate credits in mathematics, English, science, and social science</li> <li>Extensive interview process with sample teaching lesson</li> <li>For 2002–2003 school year, only 100 of 850 applicants were admitted</li> </ul>	2000–2001: 29 2001–2002: 39 2002–2003: 50
<b>Texas Region XIII Education Service Center Alternative Certification Program</b>	1991	<ul style="list-style-type: none"> <li>180 workshop hours of instruction before the first teaching job</li> <li>120 to 150 workshop hours of instruction during the first year of teaching</li> </ul>	<ul style="list-style-type: none"> <li>2.5 GPA (or 2.75 in last 60 semester hours)<sup>g</sup></li> <li>Minimum number of college credit hours in various subjects</li> <li>Evidence of competency in reading, writing, and mathematics as shown by a post-baccalaureate degree, certain scores on college entrance or graduate school entrance tests, grade of B in certain college courses, or certain score on state basic skills test</li> <li>For the 2002–2003 school year, 60 out of 300 applicants were accepted.</li> </ul>	2000–2001: 62 2001–2002: 54 2002–2003: 47

<sup>a</sup>The New Jersey program is run by the state, but 10 colleges and 3 consortia of colleges and districts run the training classes. We interviewed a state administrator as well as administrators from the training programs operated by The College of New Jersey, Saint Peter's College, and the Essex County Consortium.

<sup>b</sup>Rough estimates provided by the program director.

<sup>c</sup>The program director provided this estimate but noted that the database was not capable of providing the actual number.

<sup>d</sup>The per year numbers are estimates based on our knowledge that the program had 615 participants over the two-year period.

TABLE IV.1 (*continued*)

<sup>e</sup>The program director could not distinguish the elementary and secondary enrollees, although she indicated that about 50 percent of these enrollees teach at the elementary level.

<sup>f</sup>The Haberman Interview for Teachers of Children of Poverty and the Gallup Organization's Teacher Perceiver Interview are two commonly used standardized teacher interviews.

<sup>g</sup> Program administrators claim that in practice the GPA threshold for this program is 3.0 because the demand for it is so great.

## C. DETAILED DATA COLLECTION

We pursued detailed information on the selected set of programs in two primary ways: telephone calls to senior program administrators (and in some cases to other contacts they recommended, such as state and school district officials) and reviews of program Web pages. For each AC program, we sought answers to the following major questions:

- When did the program begin and how stable is the program structure? In other words, are the course requirements, entry requirements, or other dimensions likely to change before an impact study is implemented?<sup>17</sup>
- What are the program's entrance requirements and how selective is it in choosing applicants for admission?
- How much education training does each program require both before and after program participants begin teaching?
- How many elementary AC teachers does each program produce a year?
- How can NCEE find recent program graduates so that they may be included in an impact study?
- What are the largest nearby traditional certification programs (those whose graduates would likely comprise a large part of the comparison teachers in an impact study)?<sup>18</sup>

Whenever possible, we also pursued additional information on the AC programs, for example, officials' perceptions about program quality and requirements (their AC program versus TC programs), demographics of AC elementary teacher trainees, instructional staff backgrounds, attrition or graduation rates, mentoring and professional development support provided to new AC teachers before full certification, and program placement services. In some cases, despite repeated attempts on our part, we were not able to get information within a

---

<sup>17</sup>These are the most major questions we addressed, in most cases we were able to pursue additional information on program operations as reflected in our interview discussion guide presented in Appendix C.

<sup>18</sup>This information was critical in compiling Table IV.3, discussed later.

reasonable time period, especially with respect to the number of elementary teacher candidates enrolling or graduating per year and, on occasion, one aspect of admissions selectivity (the proportion of eligible elementary applicants accepted).

## **D. WHAT WE LEARNED**

### **1. Training Requirements**

AC training is typically delivered in three modes: typically take: university-sponsored courses, weekly workshops, and summer institutes. University course requirements are generally measured in course credits or semester hours while AC summer institutes and AC weekly workshop requirements are generally measured in contact hours. The average college course is assumed to be the equivalent of 45 contact hours, a common rule of thumb. The conversion is reasonable for purposes of comparing a college course to an AC workshop; both the course and the workshop meet weekly (approximately) over a similar period of time, even though, as indicated above, AC workshops may be less rigorous than college courses. It is not assumed, however, that a four-week, 180-hour summer course is equivalent to taking four college courses. Instead, we recommend treating summer course hours as a separate activity to be considered distinct from college courses and ongoing workshop requirements. The latter two we will refer to as a program's education course load.

Several states offer AC programs with substantial course load requirements (for example, New York, New Mexico, Arizona, Mississippi, Georgia, and California), and several offer AC programs with minimal course load requirements (New Jersey, Maryland, Texas, Florida, Arkansas, and Louisiana). Table IV.1 illustrates the variation along the course load dimension by providing details on two substantial and eight minimal AC course load programs. The substantial end of the spectrum consists of programs that require at least 30 college credits while the minimal end of the spectrum includes programs with 0 to 15 college credit requirements. On

the substantial end, for example, is the Atlanta Preparing Leaders for Urban Schools Program (AtlantaPLUS) and the Los Angeles Unified School District's program. The Atlanta program requires 30 credits of graduate-level course work. The Los Angeles program requires 240 summer contact hours and 512 workshop hours. The workshop hours alone are the equivalent of 34 course credits.

On the minimal end of the spectrum are programs such as Florida Atlantic University's program, the New Jersey Alternate Route Program, Texas Region XIII, and the Arkansas Non-traditional Licensure Program. The Florida Atlantic program requires only 150 summer hours and no college or workshop hours. The New Jersey program requires no summer hours and only 200 classroom hours (13 credits). The Texas Region XIII program requires a 180-hour summer course and an approximately 135-hour (9 credits) workshop.

## **2. Entrance Requirements**

Table IV.1 indicates that program entry requirements and program selectivity vary widely. Noncompetitive programs, such as the Arkansas program, require applicants to pass a test but have no GPA requirements, require only a brief interview, and accept almost everyone who meets their requirements. In contrast, programs such as the Baltimore program require a 3.0 GPA, undergraduate prerequisites, and an extensive interview process. Last year, the Baltimore program had a 19 percent acceptance rate and admitted only 109 of 567 applicants. Somewhere in between the two extremes lie programs such as the Dallas program, which requires a 2.5 GPA, passing a basic skills test, undergraduate prerequisites, an essay accompanying the application, and a formal interview. Dallas's acceptance rate is approximately 60 percent.

### 3. Categorizing Programs

Programs were categorized in accordance with their education course load and entrance requirements (see Table IV.2).<sup>19</sup> The “very select” programs in Table IV.2 are defined as those that set a 3.0 GPA requirement or require candidates to participate in an extensive interview process (which includes, for example, a mock teaching lesson, a group interview in which several candidates come together in one room to respond to interview questions, and a one-on-one interview between candidates and a program administrator).<sup>20</sup> Programs are considered to have “minimal” education course loads if they required the equivalent of 15 credits (five courses) or fewer in teaching methods courses.<sup>21</sup> This threshold was set after examining variations in the course requirements among both alternative and traditional programs.

---

<sup>19</sup> The Florida Atlantic Program is not included in Table IV.2 because it is suspending operations after only one year of operation. Although the program director thinks it may resume operations some time in the future, the program is suspending operations because of insufficient funds.

<sup>20</sup> The Texas Region XIII and the AtlantaPLUS programs are considered very select because in practice they only accept candidates with GPA's of 3.0 or greater, despite their lower stated GPA requirements.

<sup>21</sup> As noted above, we purposefully selected several minimal education course load programs and only two substantial education course load programs. For this reason, only one program Model C and one program Model D appear in the table.

TABLE IV.2

## ALTERNATIVE CERTIFICATION PROGRAMS AND MODELS THEY REPRESENT

		Entrance Requirements	
		Very Selective <sup>a</sup>	Less Selective
<b>Education Course Load</b>	Minimal <sup>b</sup>	<b>Model A</b> <ul style="list-style-type: none"> <li>• Baltimore Residency Program</li> <li>• Prince George's County Residency Program</li> <li>• Louisiana's PTP Program</li> <li>• Texas Region XIII</li> </ul>	<b>Model B</b> <ul style="list-style-type: none"> <li>• Arkansas Non-traditional Licensure Program</li> <li>• Dallas District Program</li> <li>• Houston District Program<sup>c</sup></li> <li>• New Jersey Alternate Route</li> </ul>
	Substantial	<b>Model C</b> <ul style="list-style-type: none"> <li>• AtlantaPLUS</li> </ul>	<b>Model D</b> <ul style="list-style-type: none"> <li>• Los Angeles Unified School District Program</li> </ul>

<sup>a</sup>Very selective programs set a 3.0 GPA requirement or require candidates to participate in an extensive interview process.

<sup>b</sup>Minimal programs require the equivalent of 15 credits (five courses) or less in education methods courses; substantial programs require more.

Because any impact study will attempt to compare AC teachers to traditionally trained teachers we examined the traditional program course requirements when setting the selectivity threshold. Table IV.3 shows the course for the largest traditional certification programs serving the same school districts as the 11 AC programs whose representatives were interviewed. Although the traditionally trained teachers who ultimately participate in the study may not come from these programs, the course load requirements from the programs are informative in that they illustrate the variation in traditional programs and confirm that the AC programs presented here involve relatively minimal education course requirements. Specifically, Table IV.3 shows the requirements for receiving certification through enrollment in a bachelor's or master's degree program. The bachelor's degree requirements may be more relevant given that the majority of traditionally certified elementary school teachers are certified through bachelor's degree



programs.<sup>22</sup> Among the bachelor's degree programs, only one program requires as few as 30 teaching related credits (10 courses), but the majority requires 54 or more credits (18 or more courses). Among the master's degree programs, most require around 30 teaching related credits and a couple around 60 credits. Thus, our 15-credit (5-course) cut-off appears reasonable as a minimal education course load threshold.

---

<sup>22</sup>Our own analyses of the 1999–2000 School and Staffing Survey (SASS), a nationally representative data set, reveal that among public school teachers with three or fewer years of experience, 69 percent of elementary teachers received their full certification as part of a bachelor's degree program.

TABLE IV.3

## TRADITIONAL COURSE WORK REQUIREMENTS FOR GENERAL ELEMENTARY EDUCATION CERTIFICATION

<b>Alternative Certification Program</b>	<b>Large Neighboring Traditional Certification Programs</b>	<b>Traditional Route Bachelor's Degree Minimum Credit Hour Requirements</b>	<b>Traditional Route Master's Degree Minimum Requirements</b>
<b>Arkansas Non-traditional Licensure Program</b>	University of Central Arkansas	50–60 credit hours	No master's degree option at this university
<b>Atlanta Preparing Teachers for Urban Schools Program</b>	Georgia State University	60 credit hours	No master's degree option at this university
<b>Baltimore and Prince George's County Residency Programs</b>	University of Maryland	60 credit hours	30 credit hours
<b>Dallas District Program</b>	University of North Texas	Early childhood to 4th grade: 60–70 credit hours	Early childhood to 4th grade: 36–39 credit hours
<b>Florida Atlantic University (Broward County)</b>	Florida Atlantic University	63 credit hours	63 credit hours
<b>Houston District Program</b>	University of Houston	68 credit hours	36 credit hours
<b>Los Angeles District Program</b>	University of California at Los Angeles	Undergraduates in California can not enter certification programs	60 credit hours
<b>Louisiana's PTP Program</b>	University of New Orleans	63 credit hours	33 credit hours
<b>New Jersey Alternate Route Program</b>	New Jersey City University	30 credit hours	30 credit hours to be certified to teach; 36 to receive the full master's degree
<b>New Jersey Alternate Route Program</b>	Montclair State University	48–50 credit hours	Two graduate certificates (K–8 and P–3): 24–25 credits; two master's programs (K–8 and P–3): 36–37 credits
<b>Texas Region XIII Program</b>	Southwest Texas State University	Early childhood to 4th grade: 58–60 credit hours	Early childhood to 4th grade: 45 credit hours

#### **4. Participant Numbers and Locating Graduates**

To conduct a rigorous study of impacts associated with teachers from AC programs, researchers would need to identify programs with enough graduates to yield reliable impact estimates clustered in either one school district or two or more nearby districts. We explored these issues in our interviews by asking administrators about (1) which district(s) their graduates worked in and (2) their ability to help researchers find recent graduates by providing contact information.

As the far right column of Table IV.1 illustrates, the number of elementary school teacher graduates produced annually by the programs we contacted ranges considerably, from between 20 to 40 in the Arkansas, Atlanta, Baltimore, and Prince Georges' County programs to over 200 in the Dallas and Los Angeles programs. Some of the AC programs (for example, Los Angeles, Houston, Dallas, and Atlanta) exist to train new teachers exclusively for a single school district, which guarantees that researchers would find sufficient clustering of graduates. Other programs (for example, Arkansas and New Jersey) are not affiliated with one particular district. In New Jersey, although AC program participants may be hired by any district, the largest urban school districts (for example, Newark, Jersey City, Trenton) each probably have enough graduates to make a study feasible. The only program in Table IV.1 that might not have enough candidates clustered in a small geographic region is the Arkansas Non-traditional Licensure Program; its graduates are scattered throughout the state.

All the program administrators we interviewed indicated that it should be possible to track down their recent graduates, although the steps involved and the amount of effort would vary across programs. Some program administrators said that they could provide researchers with contact lists; others noted that school district human resource offices could provide lists of their recent hires from AC programs, and still others noted that state officials would be the best source

for the data. In some cases, program officials may be able to tell researchers only which particular school a graduate was placed in; researchers will then have to contact the school for more detailed information, such as the person's current address and phone number.

## **5. Age and Stability**

Since 1998, states have created, on average, six new AC routes every year. Of the 131 routes listed in Feistritzer and Chester (2002), 29 emerged in the last five years. In addition, legislative changes—both recent, such as *No Child Left Behind*, or in the future—may require administrators to change key components of AC programs such as entrance requirements or the amount, type, or timing of training provided.

We believe that a program's age needs to be considered when selecting AC programs for the study. For example, a new program might face start-up issues that could result in suboptimal operation, thus making it difficult to know whether impact results show the true impact of that particular program or model. In addition, programs facing serious start-up challenges might change their structure between the time they are selected into the study and the time the study commences.

We explored the topic of program age and stability in our interviews with AC program administrators. First, we asked what year the program began. Second, we asked about both recent program changes and possible changes in the near future.

Lack of stability is evident in two of the new programs in Table IV.1. For example, three separate institutions (Sylvan Learning Systems, The New Teachers Project, and the Prince George's County Public Schools) have run the Prince George's County program during its four years of existence. The Florida Atlantic Program, which is suspending operations after only one year of operation because of insufficient funds, offers another example of instability.

While established programs can also undergo structural changes, they carry less risk of changing while the study is underway. Table IV.1 shows that the New Jersey, Houston, Dallas, Texas Region XIII, Los Angeles, and Arkansas programs have each been running for over 10 years. And Texas, California, and New Jersey have earned wide recognition for the largest and most established AC programs (Feistritzer and Chester 2002). Furthermore, our interviews with representatives of these programs revealed that overall they are stable (although, as noted in the table, the Los Angeles program will add some education course requirements this year).

## **E. NEXT STEPS**

This chapter presented an initial attempt to categorize programs into four recommended model types. Future work could categorize additional programs. We focused our efforts on identifying minimal training AC routes and identified many of the minimal training routes that accept more than a handful of prospective elementary teachers per year, although others may exist. Most of the minimal training states offer additional, generally smaller programs that could be investigated and categorized into model types and considered for an impact study. Because our efforts were concentrated on minimal training routes and because most routes require substantially more training, the program categorization exercise only scratched the surface when it comes to identifying routes with substantial training requirements.

While we found that the process of assigning programs to the various model types worked well, we also discovered that sometimes the distinctions among the models along the entrance selectivity dimension became hazy. For example, while the Atlanta and Texas Region XIII programs have GPA requirement under 3.0, the GPA threshold in practice is 3.0 because demand for the programs is so great. One obvious way to reduce ambiguity when categorizing programs by GPA is to ascertain and use the actual GPA profile of accepted candidates.

Finally, the identification of sample members will become a critical first step when launching the study; and, during the design effort, more will need to be learned about the level of difficulty associated with the process of identification. Although all the program administrators we have interviewed to date indicated that it should be possible to track down their recent graduates (and even outlined where we would turn to obtain lists of their graduates), we were unable to obtain from administrators a clear indication of the level of effort needed to complete this task.

## REFERENCES

- Darling-Hammond, L. "Who Will Speak for the Children? How 'Teach for America' Hurts Urban School Children." *Phi Delta Kappan*, 76, 1994, pp. 21-34.
- Darling-Hammond, L. "Teaching and Knowledge: Policy Issues Posed by Alternate Certification for Teachers." *Peabody Journal of Education*, vol. 67, no. 3, 1990, pp. 123-154.
- Darling-Hammond, Linda, and Peter Youngs. "Defining 'Highly Qualified Teachers': What Does 'Scientifically-Based Research' Actually Tell Us?" *Educational Researcher*, vol. 31, no. 9, December 2002, pp. 13-25.
- Feistritzer, C. E. and D. T. Chester. *Alternative Teacher Certification: A State-by-State Analysis*. Washington, DC: National Center for Education Information, 2002.
- Feistritzer, C. E. "The Making of a Teacher." Washington, DC: National Center for Education Information, 1999.
- Finn, Chester E., Jr. "The Hijacking of Teacher Reform." *The Education Gadfly*, vol. 3, no. 10, March 20, 2003. <http://www.edexcellence.net/gadfly/index.html#checker1>.
- Hawley, Willis D. *The Alternative Certification of Teachers*. Washington, DC: ERIC Clearinghouse on Teacher Education, 1992a.
- Hawley, Willis D. "The Theory and Practice of Alternative Certification: Implications for the Improvement of Teaching." In *The Alternative Certification of Teachers*. Edited by Willis D. Hawley. Washington, DC: ERIC Clearinghouse on Teacher Education, 1992b.
- Hess, Frederick M. "Tear Down This Wall: The Case for a Radical Overhaul of Teacher Certification." Washington, DC: Progressive Policy Institute, November 2001.
- Humphrey, Daniel C., Marjorie Wechsler, Kristin Bosetti, Andrew Wayne, and Nancy Adelman. "Alternative Certification: Design for a National Study." SRI International, 2002, <http://www.sri.com/policy/cep/teachers/altcert.pdf>.
- Kantoroom, Marci, and Chester E. Finn, Jr. *Better Teachers, Better Schools*, edited by. Washington, DC: Thomas B. Fordham Foundation, July 1999.
- Laczko-Kerr, Ildicko, and David C. Berliner. "The Effectiveness of 'Teach for America' and Other Under-certified Teachers on Student Academic Achievement: A Case of Harmful Public Policy." *Education Policy Analysis Archives*, vol. 10, no. 37, September 6, 2002.
- Mayer, Daniel P., John E. Mullens, and Mary T. Moore, "Monitoring School Quality: An Indicators Report." Washington, DC: U.S. Department of Education, Office of Education Research and Improvement, National Center for Education Statistics, Statistical Analysis Report, December 2000.

- National Association of State Directors of Teacher Education & Certification, *The NASDTEC Manual 2002*. 7th Edition. Sacramento, California: National Association of State Directors of Teacher Education and Certification, 2002.
- National Commission on Teaching and America's Future, "No Dream Denied: A Pledge to America's Children." Washington, DC: NCTAF, January 2003.
- Raymond, Margaret, Stephen H. Fletcher, and Javier Luque. "Teach for America: An Evaluation of Teacher Differences and Student Outcomes in Houston, Texas." Stanford, CA: CREDO, Stanford University, August 2001.
- Stoddard, T. "Los Angeles Unified School District Intern Program: Recruiting and Preparing Teachers for the Urban Context." *Peabody Journal of Education*, vol 67, no. 3, 1990, pp. 84-122.
- Stoddart, Trish, and Robert E. Floden. "Traditional and Alternative Routes to Teacher Certification: Issues, Assumptions, and Misconceptions." Issue Paper 95-2. East Lansing, Michigan: National center for Research on Teacher Learning, 1995.
- U.S. Department of Education. *Meeting the Highly Qualified Teachers Challenge: The Secretary's Annual Report on Teacher Quality*. Washington, DC: U.S. Department of Education, Office of Postsecondary Education, Office of Policy, Planning, and Innovation, 2002.
- Walsh, K. *Teacher Certification Reconsidered: Stumbling for Quality*. Baltimore, MD: Abell Foundation, 2001. [http://www.abell.org/pubsitems/ed\\_cert\\_1101.pdf](http://www.abell.org/pubsitems/ed_cert_1101.pdf).
- Weiss, Eileen Mary, Stephen Gary Weiss. *Beginning Teacher Induction*. ERIC Digest." Washington, DC: ERIC Clearinghouse on Teaching and Teacher Education, 1999.
- Wilson, Suzanne M., Robert E. Floden, and Joan Ferrini-Mundy. *Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations*. Seattle, WA: Center for the Study of Teaching and Policy, University of Washington, February 2001.
- Zeichner, Kenneth M., and Ann K. Schulte. "What We Know and Don't Know from Peer-Reviewed Research about Alternative Teacher Certification Programs." *Journal of Teacher Education*, vol. 52, no. 4, September/October 2001, pp. 266-282.



**APPENDIX A**

**THE EFFECT OF ALTERNATIVE CERTIFICATION ON STUDENT ACHIEVEMENT:  
A LITERATURE REVIEW**

*Neil S. Seftor*  
*Daniel P. Mayer*



The past 20 years have seen a marked shift in the method of training teachers in the United States. In just two decades, the number of states offering alternative certification routes for prospective teachers increased from a handful to 45. By some estimates, about one-third of any given year's newly hired teachers now come through alternative certification programs (Feistritzer and Chester 2002). However, the design and implementation of various traditional and alternative training programs evidence considerable variation, and research into the programs yields little consensus as to the best way to train prospective teachers. Given the variation in alternative certification programs, it is difficult to resolve issues of training effectiveness solely by relying on studies focused on the general question of whether alternative certification meets its promise. In this review, we examine studies to learn whether we can conclude what specific types and characteristics of alternative certification programs might prove effective.

As a starting point, we examine the studies reviewed by Wilson et al. (2001) in a report for the U.S. Department of Education (ED) entitled "Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations," which presents a comprehensive review of peer-reviewed journal articles on teacher preparation.<sup>23</sup> We have also searched for reports prepared for government agencies and foundations, studies published in scientific journals following release of the Wilson article, and recently launched studies to supplement this list. Our intent was to focus on studies that compare a well-specified alternative certification program to a well-

---

<sup>23</sup>For inclusion in the Wilson et al. (2001) review, an analysis had to be a study of U.S. teacher education, directly relevant to the questions posed by the Department of Education, and published in a scientific journal within the past two decades. In addition, the authors required the study to be empirical (offering evidence rather than theory or opinion) and rigorous (meeting generally accepted standards in the relevant research areas). To qualify as rigorous, experimental and quasi-experimental studies must have used random assignment or some form of matching for entering characteristics while multiple regression studies must have controlled for relevant differences among the groups, other than the characteristic under study.

specified traditional certification program as well as on those that compare standard certification to emergency, temporary, or provisional certification. Both of these comparisons would allow for a more precise examination of particular routes to certification, although, as shown below, the literature does not allow for such a fine-grained comparison.

Alternative certification is a shorthand way to refer to any of the routes—other than the traditional route—that a prospective teacher may follow to enter the teaching profession and become a “fully certified” teacher.<sup>24</sup> We use interchangeably the terms “alternative teacher certification programs” and “programs that provide an alternative route to teacher certification.” The distinction is that alternative route programs, such as Teach for America and Troops to Teachers, do not certify teachers, but rather recruit non-traditional teaching candidates and funnel them into certification programs. Teachers who obtain their certification through either a traditional or an alternative route need to be distinguished from teachers who hold emergency, temporary, or provisional certification because teachers holding these latter types of certifications are not necessarily in a training program or on their way to certification.

There are several critical distinctions between the traditional certification (TC) and alternative certification (AC) routes, including, most notably, the type of candidates who take the routes, the chronological order of critical milestones along the road to full certification, the background of the person who provides the substance of the training, and the emphasis of the training. Perhaps the most controversial aspect of alternative certification is that before taking their first full-time teaching job, alternatively certified teachers take minimal to no education courses (such as courses in pedagogy, child development, and classroom management) and

---

<sup>24</sup>Definitions and certification titles vary from state to state. In this report, “fully certified teachers” refers to those teachers who completed all of a state’s required course work and passed all state licensing examinations.

generally engage in, at most, a few weeks of practice teaching. While the typical AC program will require AC candidates to attend workshops or take university courses during the first year of teaching (and sometimes second and third years of teaching) they are not fully certified for one to three years after first entering the classroom. In contrast, traditionally certified teachers complete a full battery of education courses, participate in an average of 14 weeks of student teaching, and receive their full certification before becoming a full-time teacher.

Recognizing that ED's primary concern regarding teacher training relates to its impact on students, we limit our review to studies of the impacts of certification programs on the quantifiable measure of student achievement. Several studies address other "outcomes" that may be affected by the method of certification, such as teacher subject matter knowledge, teacher test scores, evaluations of teaching by mentors or principals, and teacher perceptions or attitudes; however, each of these measures has limitations. Collegiate courses and major often serve as proxies for teacher subject matter knowledge, but these indirect measures are limited by wide variation in what constitutes a course or major. Studies that examine the effect of certification using more direct measures of subject matter knowledge, such as the score a teacher receives on a test, reveal little about the subsequent effect on students.<sup>25</sup> Less objective measures of teacher effectiveness are sometimes used as outcomes, include ratings of supervisors, teacher self-reports, and independent observations. However, given the underlying incentive issues and the subjective nature of the outcomes, it is difficult to accord these measures much weight.

Unfortunately, the literature on alternative certification that focuses directly on student achievement is shockingly small. Wilson et al. (2001) cite 14 articles that examine the issues of

---

<sup>25</sup>In fact, a separate literature examines the relationship between teacher subject matter knowledge and student achievement (Monk 1994; Monk and King 1994; Goldhaber and Brewer 1997).

alternative certification as meeting their requirements for inclusion. Of those 14, only two include analyses that examine the impact of certification on student achievement; the others evaluate teacher preparation by using teacher ratings, surveys, or interviews as outcomes. Out of numerous other studies, we were able to identify four other articles that broadly meet the requirements for inclusion in this review.<sup>26</sup> Upon further examination, it is clear that each of the six articles is flawed by problems that undermine the study; while some have relatively minor problems, the majority of them contain more significant flaws.

The design of a study is critical to the quality of the evidence it generates. Well-implemented randomized experiments are often considered the gold standard against which to measure other study designs. It is the only approach that can ensure that the effects we see from a program are in fact attributable to that program alone and not to other factors affecting schools and students. None of the six studies reviewed in this paper is based on random assignment, though two used a matched comparison approach. In those papers, the authors attempted to match similar teachers with different types of certification and then looked at the differences in student achievement. The matched comparison approach can be used to create comparison groups that are similar with regard to the characteristics used by the researchers to make the match. However, the approach can have low validity if the set of characteristics used for the match is incomplete or if unobservables cannot be accounted for in the match; that is the case in one of the studies discussed below. The other matched comparison study, which uses a reasonable approach to matching teachers, still results in classes that are not necessarily equivalent, yet it makes no attempt at regression-adjustment to alleviate the remaining differences.

---

<sup>26</sup>Table 1 provides a brief summary of the studies included in this review.

The four other papers included in this review are based on multiple regression analysis in which student achievement is modeled as a function of teacher certification and other characteristics. The goal is to estimate the relationship between certification and student achievement or how achievement varies with differences in teacher certification after “controlling” for other factors that might affect achievement. For example, students who demonstrate a higher level of achievement (relative to other students) in the year before the study are more likely to reach a higher level of achievement in the year after the study regardless of the type of certification earned by their teacher. If a study does not control for earlier achievement, it may inaccurately attribute differences in post-study achievement to the certification of the teacher. Even with such controls, other unobserved factors are likely to affect achievement and, because they cannot be included in the estimation, will influence the relationships of other variables. Even though the six articles included in this review are the extent of the literature relating alternative certification to student achievement, all are flawed and therefore must be interpreted with caution.

#### **A. MATCHED COMPARISON STUDIES**

A study by Miller, McKenna, and McKenna (1998) examines an alternative certification training program created by faculty at a southeastern university. In May 1989, the university started an alternative certification program of individualized and intensive study for 70 middle-grade teachers. The study was designed to comply with Georgia’s provisional certification standards. During the summer of 1989, students took between 15 and 25 quarter-hours (depending on initial assessments) to qualify for provisional certification; 67 participants successfully completed the coursework and were in classrooms in the fall.

In their first year as teachers, participants were supported by additional coursework and received a substantial amount of supervision from a university supervisor and a public school

mentor. The university supervisor observed and conferred with the teacher eight times during the year, met with the teacher's mentor to discuss the progress of the teacher-mentor relationship, and taught a biweekly course for all participants that focused on examining common problems, exploring solutions collaboratively, and providing support. After the first year, support was limited to the additional coursework required to earn regular certification and the informal continuation of the mentor relationship.

Three years after program participation, teachers who were in self-contained fifth and sixth grade classrooms were matched with traditionally certified teachers who began their teaching careers in the same year. The match required that both the traditionally and alternatively certified teachers teach the same subject to students in the same grade and in the same school. The result was a matched sample of 18 total classrooms across 9 schools—in each school, the classroom of one program participant was matched to the classroom of one traditionally certified teacher. Using a multivariate analysis of variance, the authors found no significant difference in the total mathematics or total reading scores (Iowa Test of Basic Skills) that could be attributed to the method of training. In other words, the study suggests that teachers from the alternative certification training program created by faculty at the southeastern university were performing as well as teachers trained in traditional certification programs.

The Miller et al. study is the most convincing in the literature, as the matched comparison methodology comes closest to a random assignment design; however, it is deficient in a number of areas. Primarily, the fact that the results are based on nine participants in one program in a single state severely limits the external validity of the findings. Asserting that the students were not grouped by ability, the authors provide no evidence that students were randomly assigned to teachers within a grade. The authors collected pretest scores for all students and cite a lack of entry-level differences as justification for excluding covariates from their analysis; however,



though the distributions of test scores were similar for the two groups of students, any differences across classrooms (and thus the quality of peers) may have gone ignored by the failure to include pretest scores. Furthermore, the classrooms clearly contained other differences; for example, the nine alternatively certified teachers taught 188 students while the nine traditionally certified teachers taught 157 students, resulting in a class size difference of 3.5 students, on average.

The traditionally certified teachers came from a variety of backgrounds, including states with different training mechanisms. Certainly, it is reasonable to compare teachers from a variety of backgrounds; yet, to ensure a clean comparison between traditionally certified teachers and teachers who pass through the alternative certification program, it is also important to verify that all of the teachers in the comparison group meet the requirements for traditional certification in Georgia. In addition, by limiting the sample to teachers who were still teaching after three years and were “accessible to the campus” of the training program, the methodology may have given rise to selection bias associated with the teachers’ location and career decisions. Comparing the two types of teachers in their third year of teaching makes it more difficult to attribute different student outcomes solely to the method of certification, as other aspects of teacher experience (such as the school or schools in which the teacher was working or the additional coursework taken by a teacher) during the intervening period may be correlated with the results. Similarly, if alternatively and traditionally certified teachers were teaching the same subject to students in the same grade and in the same school over a period of time, their interactions may lead to spillovers in teaching methods or strategies that make it difficult to isolate the effects of participation in the alternative certification program.

Laczko-Kerr and Berliner (2002) provide the only other matched comparison study involving traditionally and nontraditionally certified teachers. The authors combine all teachers

who do not meet the Arizona state requirements for certification (a bachelor's degree from an accredited institution, 45 semester hours of education course work, and passing scores on the Arizona Educator Proficiency Assessment) into one "under-certified" group as the comparison group for traditionally certified teachers. The group includes those who are labeled as emergency (those who hold a bachelor's degree from an accredited institution and have little or no educational coursework), temporary (a rarely used designation similar to emergency), and provisional (for those with some or considerable teacher training who are missing certain units or requirements that could earn them a standard certificate). Among the "under-certified" teachers in this study are some from an alternative training program, Teach for America (TFA).

After identifying districts with high percentages of under-certified teachers, the study reports that five out of 24 districts agreed to participate in the research; each of the five districts served an inner-city, largely minority population. In 1998–1999 and 1999–2000, those districts hired 293 new teachers whose files contained the necessary demographic and classroom-level student achievement data. Teachers from each group (certified and under-certified) were matched according to grade level taught, highest degree attained, and year of test administration (1998 or 1999); the 109 matched pairs of teachers in third through eighth grades represented 74 percent of the original sample. The authors report that the students of under-certified teachers (those with emergency, temporary, or probationary certification, including Teach for America teachers) performed significantly worse (20 percent) than students of certified teachers in reading, language arts, and mathematics. Stated another way, students in classes taught by a certified teacher received the equivalent of two more months of academic growth. In addition, students of

TFA teachers did not perform any better or worse than students of other under-certified teachers.<sup>27</sup>

The major methodological problem with the Laczko-Kerr and Berliner study concerns the matching of teachers. When matches within the same school were impossible, the researchers matched teachers between schools within the same school district or between schools in different districts; the authors do not specify how many teachers were matched within school or within district, but they report that 38 percent of teachers were matched with a teacher in another district. To justify the use of their matched data for the analysis, the authors asserted a number of critical assumptions without providing any data to substantiate their claims, such as teachers in the same school taught similar students, teachers in the same district taught similar students, the assignment of teachers to schools and classrooms did not result in a selection effect (that is, that under-certified teachers were not more likely to be found in the worst schools or classrooms), and class size and student ability did not differ across teachers.

Taken as a whole, the methodology of matching is not necessarily a problem. Frequently, the characteristics of the subjects to be matched are used in some combination to ensure that the baseline characteristics of two groups are similar across the relevant dimensions. In the study in question, however, the authors based the pairing of teachers solely on whether they taught in the same school or district (when possible), thus ignoring differences in schools, classrooms, and teachers. If the matching technique were successful, we would observe few if any statistically significant differences in the baseline characteristics of the two groups after matching. However, the limited evidence on match quality provided by the authors contradicts their assertions and

---

<sup>27</sup>In the original sample of 293 teachers, 25 percent of the under-certified teachers were TFA teachers (34 out of 134); the authors do not provide the number of TFA teachers in the final sample of 109 under-certified teachers.

justifications for their matching method: using their only measure of achievement (the “outcome” test scores in 1998 and 1999), they find that, across all schools in the study, reading test scores differ significantly and that, across all districts in the study, test scores for several subjects differ significantly. Therefore, matching based solely on the teachers’ school or district yields matched samples that vary substantially in their characteristics. Furthermore, the authors assert that, for matches across districts, the student populations had similar economic bases; while it may be true that two districts have similar socioeconomic characteristics, it is certainly not the case that each school in the district has those characteristics. The authors present no evidence for the comparability of matched teachers along these socioeconomic dimensions.

Some of the matching and other methodological problems could be alleviated if the authors were able to examine the gain in student achievement by controlling for initial student achievement. However, when the only outcome measure is the level of student achievement at one point in time, the authors cannot draw conclusions regarding teacher effectiveness. In addition to failing to control for differences in baseline achievement, the authors do not control for other classroom characteristics, such as class size. The implicit assumption is that all classrooms are the same such that all differences in final achievement are attributable to the training of the teacher. Given that the authors’ estimation strategy is based on these unverifiable and questionable assumptions, we can have little confidence in the study results.

Overall, the aggregation of TFA teachers with those holding only an emergency credential creates a serious specification error and prevents any insight into the effect of the characteristics of the TFA program. Furthermore, given the sample sizes, isolating one subgroup of the “under-certified” population and comparing it to the others is unreasonable. For example, after splitting the sample by year of test, the number of TFA teachers used for the subgroup analysis was 8 in 1998 and 22 in 1999. The small sample of TFA teachers leads to large standard errors, reducing

the likelihood of finding a significant difference between subgroups of the under-certified teachers.

## **B. REGRESSION ANALYSIS**

Using data from the National Educational Longitudinal Study of 1988, Goldhaber and Brewer (2000) examine how students of teachers with probationary certification, emergency certification, private school certification, or no certification in their subject area compare relative to students of teachers who have earned standard certification in their subject area. Unlike the previous study, the Goldhaber and Brewer study examines alternatives to standard certification in terms of the individual student rather than collectively across all students. The focus of the study is 12th grade standardized test scores in mathematics and science for individual students; the sample consists of 3,786 mathematics and 2,524 science students taught by 2,098 mathematics and 1,371 science teachers in a nationwide sample of public schools. The certification variable was created from responses to a survey question that asked, “Which type of math and science teaching certifications do you hold from the state where you teach?”<sup>28</sup>

To isolate the effect of teacher certification with a high degree of accuracy, the authors control for an extensive set of variables that may also affect student achievement, including individual and family background variables, school variables, teacher variables, and class variables. Using a teacher random effects model (to account for multiple students per teacher), the study finds that, in mathematics, students with an uncertified teacher or a teacher with a private school certification score 1.3 points lower (10 percent of the standard deviation) than those taught by a teacher with a standard, probationary, or emergency certificate. On the other

---

<sup>28</sup> The response categories were regular or standard, probationary, emergency, private school certification, and not certified in subject. Thus, there is no distinction between those who are not certified and those who are not certified in their subject area.

hand, the study finds no evidence that, with respect to student achievement, teachers with a standard certificate in their subject outperform those with an emergency certificate. Teachers who have taken an alternative route to certification may fall in many of these categories; however, if an alternative certificate is considered at least as good as an emergency certificate, the findings lend support to those who advocate that alternative certification is a feasible alternative to the traditional route.

Based on the already noted survey question, the data cannot distinguish between those who are completely uncertified and those who are not certified in their subject area; thus, teachers who are certified but teaching out-of-field are grouped with the uncertified teachers. It is therefore possible that the findings for the uncertified teachers are positively biased if the certified, out-of-field teachers outperform the other uncertified teachers. The data are also limited by variation in the definition of certification across states and by potential measurement error associated with variation in the interpretation of the survey question across individual teachers.

Furthermore, none of the nonstandard certifications (probationary, emergency, private school, or no certification) corresponds strictly to a particular program of alternative certification. The data are incapable of distinguishing the route through which teachers entered the teaching profession, and they cannot describe the qualifications associated with a particular response to the survey question. Therefore, the study cannot directly explore the components of certification that affect student achievement. In addition, given that some of the teachers have undoubtedly completed alternative certification programs, it is possible that they differ in terms of unobservables (such as motivation) that are impossible to quantify in the data. Thus, any differences in student performance may be attributable to either the impact of the training received by the teacher or a teacher selection effect.

Beyond the study's inability to identify particular alternative certification programs or characteristics associated with student achievement, several issues call into question the strength of the findings. Given that the nonstandard certification categories include those who are certified but teaching out-of-field, the reported percentage of teachers classified as such (less than 7 percent) appears questionably low (Seastrom et al. 2002). Even if accurate, the sample sizes by subject and certification type are still remarkably small; for example, the result from the comparison of emergency to standard certification in mathematics was based on 49 students taught by teachers with emergency certification and 3,179 students taught by teachers with standard certification. Another issue arises from basing the impact of the 12th grade teacher's certification on 12th grade test scores when 10th grade tests provide the information on earlier achievement. In the intervening period, students are likely to be influenced by multiple teachers across multiple courses. Using information only from the last teacher biases the estimates by attributing the entire difference to a single teacher. Furthermore, if the assignment of a student to a teacher is based at all on student performance, selection bias will occur along this dimension as well.

Raymond, Fletcher, and Luque (2002) seek to examine the effect of Teach for America (TFA) teachers on student achievement in Houston. During the past 12 years, the Teach for America program has provided an alternative supply of teachers in some of the nation's largest and most needy school systems.<sup>29</sup> Candidates for the program, who are recruited from more than 200 colleges and universities, undergo screening by TFA staff. The screen includes writing an essay, participating in a personal interview, and conducting a sample teaching session.

---

<sup>29</sup>TFA communities include Atlanta, Baltimore, the San Francisco Bay Area, Chicago, Houston, Los Angeles, the Mississippi Delta, New Jersey, New Orleans, New York City, North Carolina, Phoenix, the Rio Grande Valley in Texas, rural Louisiana, and Washington, DC.

Candidates who pass the screen attend a five-week summer institute operated by TFA in conjunction with the Houston Independent School District. At the institute, candidates work in teams to teach summer classes under the supervision of experienced teachers – usually TFA alumni. In addition to working directly with students in classrooms, TFA candidates participate in professional development activities that emphasize topics such as managing classrooms, assessing student performance, and motivating students and families to sustain high levels of academic performance.

Using data from the Texas Assessment of Academic Skills, the authors were able to control for earlier student achievement in their study of 186 elementary and 34 middle schools. Estimating a teacher fixed-effects model to generate average gains for each teacher, they attempted eight sets of analyses based on subject (mathematics and reading), grade level (elementary and middle), and comparison group (all non-TFA teachers and new non-TFA teachers). Within the school level, the authors pooled data across grades, asserting that the underlying learning process is stable from year to year. After controlling for school, class, teacher, and student characteristics, they found that, on average, TFA teachers produced a positive effect on their students' achievement levels, though the differences were generally not statistically significant.

Of the elementary results, the two analyses using all non-TFA teachers as the comparison group were small and positive though insignificant while the two analyses using only the new non-TFA teachers as the comparison group found larger and positive results, with a significant effect in mathematics. In the middle grades, three of the four analyses resulted in positive and significant findings when a dummy variable was used for whether a student had a TFA teacher; only the positive impact on reading test scores for TFA teachers as compared to new non-TFA teachers was not statistically significant. None of the findings proved statistically significant



when the TFA intensity variable (proportion of time taught by a TFA teacher) was used to account for the possibility that a student had been taught by several teachers with a variety of backgrounds. In general, the distribution of test scores for TFA teachers was narrower, suggesting greater consistency and less variability. Furthermore, the mean of the distribution was always higher than that of the non-TFA teachers.

The elementary findings are based on the extremely broad comparison of TFA teachers with all non-TFA teachers in the Houston school system in the fourth and fifth grades. As demonstrated by the authors, the characteristics of the average school for TFA teachers differ considerably from those for non-TFA teachers; for example, TFA teachers tend to work in higher-poverty schools. In addition, many of Houston's elementary schools contain departmentalized fourth and fifth grade classrooms, creating the same attribution problem as in the middle school analyses. While the statistical model can control for some of these measurable differences, unmeasured differences are probably correlated as well. Furthermore, principals often systematically steer certain types of students to TFA or non-TFA teachers.<sup>30</sup>

At the beginning of their first year, new TFA teachers in Houston had to enroll in the district's large and popular Alternative Certification Program (ACP), through which they were assigned a mentor, attended weekly training sessions, had monthly observations and consultations with an ACP specialist, and were required to take two courses at a local university. However, it is unclear how many of the non-TFA teachers were also enrolled in the ACP program and thus received similar support. If the non-TFA teachers were not enrolled in the

---

<sup>30</sup>In the feasibility and design phases of our study of TFA in Houston, Mathematica Policy Research determined that several Houston elementary schools departmentalize their fourth and fifth grade classrooms, and that principals frequently assigned students based on teacher training.

ACP program, some of the gains attributed to TFA could have come instead from the ACP program.

Two other regression studies have attempted to address the relationship between certification and student achievement; however, rather than using student- or teacher-level data, the studies used data aggregated to the school or state level. While we discuss their findings below, it should be noted that aggregation bias might produce significantly distorted results.

Using data from 795 regular California high schools, Fetler (1999) examined the relationship between measures of teacher certification and student achievement. Specifically, he focused on the effects of teachers with an emergency permit (holding a bachelor's degree, passing a basic skills test, and completing at least 18 semester hours or 9 upper-division/graduate semester units of course work in mathematics), a limited-assignment emergency permit (holding a valid teaching credential in another subject), or a waiver (passing the mathematics portion of a basic skills test). The model estimated the relationship between grade-level mean achievement test scores from the mathematics portion of the Stanford Achievement Test Series and the percent of mathematics teachers with emergency certification in the school. It found that a higher percentage of emergency certifications was associated with lower test scores; however, no tests were performed to assess whether the differences were statistically significant.

The author of the study points out the most problematic flaw in the analysis: students at public secondary schools with a higher poverty level or with a higher- percentage minority enrollment were more likely to receive mathematics instruction from a teacher who had not majored in mathematics. Though higher percentages of emergency certificates were associated with lower scores, we cannot conclude that they were the cause. Given the evidence on teacher placement, it may be more likely that the relationship goes the other way--schools with a lower average test score are assigned more teachers with emergency certificates.

The disparate levels of aggregation (grade for test scores and school for teachers) are problematic because they provide no direct link between student achievement and teacher training. For example, a school may have two grades in which teachers with standard certificates in mathematics teach mathematics classes and two grades in which teachers with emergency certificates teach mathematics classes. In the analysis in question, all four grades, and thus their grade-level mathematics scores, would be associated with the same level of emergency teaching—that of the entire school. Furthermore, the measure of emergency certification is rough; it is calculated as the number of teachers with an emergency certificate who teach mathematics as a share of all teachers who teach one or more mathematics classes. Given this specification, teachers receive equal weight independent of the number of mathematics courses taught, the types of mathematics courses taught, the number of students taught, and the grade level of students taught. Again, the lack of control for initial achievement means that it is impossible to attribute anything to the teacher characteristics at one point in time as baseline differences across both classes and schools probably exist. Furthermore, characteristics of the students’ entire course of study affect their test scores, not just the composition of the teaching staff at the time of test administration.

In a paper that has generated much discussion, Darling-Hammond (2000) used data from the 1993–1994 Schools and Staffing Survey and several administrations of the National Assessment of Educational Progress (NAEP) (1990, 1992, and 1996) to examine the effect of certification status on student achievement at the state level. The study examined mathematics scores (fourth grade in 1990 and 1996 and eighth grade in 1992 and 1996) and reading scores (fourth grade in 1992 and 1994) in the public schools of the 44 states that participated in the state NAEP. For each of the six analyses, Darling-Hammond examined the relationship between the average NAEP score for the state and the percentage of well-qualified teachers (those with state

certification and a major in their field), the percentage of teachers with a master's degree, and the percentage of unqualified newly hired teachers (those with no certificate and those with provisional, temporary, or emergency certification) while controlling for state average class size and the state percentages of students with incomes below the poverty line and with limited English proficiency.<sup>31</sup> Across the six analyses, Darling-Hammond found that the percentage of well-qualified teachers in the state had a positive and significant effect on state average achievement scores.

Again, as in the Laczko-Kerr and Berliner (2002) and Fetler (1999) studies, the lack of control for earlier achievement is a serious limitation. It is impossible to isolate the effect of teachers on student achievement by examining only one point in time, ignoring all previous inputs into the students' level of knowledge. In addition to the variation in student ability and observable characteristics within a state, many other unmeasured variables will likely explain why scores vary across states. For example, if the wealthiest states report higher test scores and are more likely to employ well-trained teachers, the two measures of interest will be correlated, both affected by wealth.

Furthermore, by using state-level data, the study exacerbated the bias attributable to aggregation. For example, the use of an average score to represent all student outcomes in a state implies that all students in the state are similarly affected by the characteristics of teachers at the state level rather than by the characteristics of teachers in their district, school, or classroom; failure to account for these variables undermines the study's implications that there is a link between teacher certification and student achievement. Even if we were to ignore these

---

<sup>31</sup>Thus, the comparison group was comprised of teachers who were lacking standard certification, a major in field, or both, as long as they were *not* a new teacher with either no certificate or a provisional, temporary, or emergency certificate.

issues, the findings attribute too much of the difference between state test scores to certification. In the study, a well-qualified teacher is defined as one with state certification and a major in the field. Just as other studies have found a relationship between subject knowledge and student achievement (Monk 1994; Monk and King 1994; Goldhaber and Brewer 1997), it is impossible to disentangle the effects of the two measures of teacher background.

## **C. CONCLUSIONS**

Only a handful of studies examine the relationship between teacher certification and student outcomes. Of those, just two look directly at alternative certification while the others examine the effects of a teacher with standard certification relative to teachers without standard certification, such as those who are uncertified or have an emergency certification. The two alternative certification studies tell us that (1) there was no difference in test scores that could be attributed to a small alternative certification program in Georgia and (2) Teach for America has a positive, though generally insignificant, effect on student achievement in Houston relative to other new non-TFA teachers. The other studies tell us that (1) individual 12 grade mathematics achievement falls with an uncertified teacher despite no difference between teachers with standard and emergency certification, (2) traditionally certified teachers in Arizona elementary and middle schools raise student achievement by 20 percent compared to uncertified teachers, (3) a higher share of emergency certified mathematics teachers in California high schools is associated with lower mathematics scores, and (4) states with higher percentages of teachers with both a standard certification and a degree in field are associated with higher fourth and eighth grade state-average test scores.

However, the findings from all six of these studies are suspect, due to methodological flaws that cannot be overlooked. Both the alternative certification studies and the more generic certification studies use a variety of designs and analytic techniques that yield questionable

findings regarding the effect of certification programs on student achievement. Selection bias, or unmeasurable differences in students across different types of teachers, is a potential problem in almost every study reviewed. Although two studies attempted to address the bias issue by using matched comparison groups, one was left with a small sample on which to base its results, and the other appeared to have different populations after matching. Furthermore, if students with different teachers vary in ways that cannot be measured, the matching studies may still provide unreliable estimates.

As an alternative to the matched comparison design, several studies use multivariate regression specifications to examine the relationship between teacher certification and student achievement. However, each study has difficulty isolating the effect of the teacher's certification status on student achievement. While some studies are able to control for earlier achievement at the level of the individual student, they are unable to control for students' exposure to a number of teachers and courses before the final test. Other studies aggregate to the levels above the student or classroom or use coarse measures of teacher certification.

As a whole, the existing literature suggests the need for a more rigorous study in order to assess with a high degree of accuracy the effectiveness of alternative certification programs on students' achievement. A major component of such a study would be the testing of students before and after exposure to a teacher. Given the infeasibility of randomly assigning teachers to a particular training program or path to certification, a reasonable approach would be to use random assignment in the placement of students in classes taught by teachers with different backgrounds. To evaluate programs of alternative certification with greater precision, a study would need to focus on a few clearly defined alternatives, with detailed components and requirements. However, the study would also need to be large enough to detect reasonably sized impacts and broad enough to provide insight into implications for educational policy.

TABLE A-1

## STUDIES THAT EXAMINE THE EFFECT OF ALTERNATIVE CERTIFICATION ON STUDENT ACHIEVEMENT

Study	Type	Sample	Comparison Group	Results
<b>Darling-Hammond (2000)</b>	Regression	National (NAEP): 44 states 4th and 8th grade	Unqualified newly hired teachers (those with no certificate and those with provisional, temporary, or emergency certification) versus well-qualified (those with state certification and a major in their field)	The percent of teachers in a state who were well-qualified had a positive and significant effect on state average achievement test scores.
<b>Fetler (1999)</b>	Regression	California: 795 high schools	Share of teachers in a school with emergency permits	A higher percent of emergency certifications in a school was associated with lower test scores.
<b>Goldhaber and Brewer (2000)</b>	Regression	National (NELS) : 3,786 math students 2,524 science students 2,098 math teachers 1,371 science teachers 12th grade	Separate analyses for probationary certification, emergency certification, private school certification, or no certification versus standard certification	In math, students with an uncertified teacher or a teacher with a private school certification score 1.3 points lower on standardized test (relative to standard, probationary, or emergency). No evidence that teachers with a standard certificate in their subject outperform those with an emergency certificate.
<b>Laczko-Kerr and Berliner (2002)</b>	Matched Comparison	Arizona: 109 matched pairs 3rd through 8th grades	Under-certified (all who did not meet state requirements for certification - emergency, temporary, probationary, and TFA) versus certified	Under-certified did 20 percent worse on reading, language arts, and math. Students of TFA teachers performed no better or worse than the other under-certified teachers.
<b>Miller, McKenna, and McKenna (1998)</b>	Matched Comparison	Georgia: 9 matched pairs 5th and 6th grades	Alternative Certification Program versus traditional certification	No difference in total math or total reading scores.
<b>Raymond, Fletcher, and Luque (2002)</b>	Regression	Houston, Texas: 186 elementary & 34 middle schools	Teach For America versus non-TFA (all and newly hired)	TFA teachers produced a positive effect on their students' achievement levels, though the differences were generally not statistically significant. The distribution of test scores for TFA teachers had both a higher mean and lower variance, suggesting more consistent test scores.

## REFERENCES

- Darling-Hammond, Linda. "Teacher Quality and Student Achievement: A Review of State Policy Evidence." *Education Policy Analysis Archives*, vol. 8, no. 1, January 1, 2000.
- Feistritzer, C. E. and D. T. Chester. *Alternative Teacher Certification: A State-by-State Analysis*. Washington, DC: National Center for Education Information, 2002.
- Fetler, Mark. "High School Staff Characteristics and Mathematics Test Results." *Education Policy Analysis Archives*, vol. 7, no. 9, March 26, 1999.
- Goldhaber, D. D., and D. J. Brewer. (1997). Evaluating the Effect of Teacher Degree Level on Educational Performance. In W. Fowler (Ed.), *Developments in School Finance, 1996* (NCES 97- 535) (pp. 197-210). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Goldhaber, Dan D., and Dominic J. Brewer. "Does Teacher Certification Matter? High School Teacher Certification Status and Student Achievement." *Education Evaluation and Policy Analysis*, vol. 22, no. 2, Summer 2000, pp. 129-145.
- Laczko-Kerr, Ildicko, and David C. Berliner. "The Effectiveness of 'Teach for America' and Other Under-certified Teachers on Student Academic Achievement: A Case of Harmful Public Policy." *Education Policy Analysis Archives*, vol. 10, no. 37, September 6, 2002.
- Miller, John W., Michael C. McKenna, and Beverly A. McKenna. "A Comparison of Alternately and Traditionally Prepared Teachers." *Journal of Teacher Education*, vol. 49, no. 3, May-June 1998, pp. 165-176.
- Monk, David H. "Subject Area Preparation of Secondary Mathematics and Science Teachers and Student Achievement." *Economics of Education Review*, vol. 13, no. 2, 1994, pp. 125-145.
- Monk, David H., and Jennifer A. King. "Multilevel Teacher Resource Effects on Pupil Performance in Secondary Mathematics and Science: The Case of Teacher Subject-Matter Preparation." in Ehrenberg, Ronald G. (ed.): *Choices and Consequences: Contemporary Policy Issues in Education*. Ithaca, NY: ILR Press, 1994, pp. 29-58.
- Raymond, Margaret, Stephen H. Fletcher, and Javier Luque. *Teach for America: An Evaluation of Teacher Differences and Student Outcomes in Houston, Texas*. Stanford, CA: CREDO, Stanford University, August 2001.
- Seastrom, Marilyn McMillen, Kerry J. Gruber, Robin Henke, Daniel J. McGrath, and Benjamin A. Cohen. *Qualifications of the Public School Teacher Workforce: Prevalence of Out-of-Field Teaching, 1987-88 to 1999-2000*. Washington, DC: U.S. Department of Education, National Center for Education Statistics, 2002.



Wilson, Suzanne M., Robert E. Floden, and Joan Ferrini-Mundy. *Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations*. Seattle, WA: Center for the Study of Teaching and Policy, University of Washington, February 2001.



## **APPENDIX B**

### **EXPERT PANEL MEMBERS AND CONSULTANTS**



## Expert Panel Members

Evelyn B. Dandy  
Professor of Education and Director  
Pathways to Teaching Program  
College of Education  
Armstrong Atlantic State University

Vicky Dill  
Executive Director, Central Office  
Round Rock Independent School District

Emily Feistritzer  
President  
The National Center for Education Information

John Gantz  
Chief  
Troops to Teachers

Dan Goldhaber  
Research Associate Professor, University of  
Washington Associate Scholar, The Urban Institute

David W. Gordon  
Superintendent  
Elk Grove Unified School District

Paul W. Holland  
Frederic M. Lord Chair in Measurement and  
Statistics  
Educational Testing Service

David H. Monk  
Dean, College of Education  
Pennsylvania State University

Margaret Raymond  
Director, CREDO  
Hoover Institution  
Stanford University

Jeffrey Smith  
Associate Professor  
University of Maryland

## Consultants

Daniel Humphrey  
Senior Policy Analyst  
SRI International

Susan Moore Johnson  
Pforzheimer Professor of Education  
Harvard University



## **APPENDIX C**

### **IDENTIFYING MODELS TASK ORDER TELEPHONE INTERVIEW GUIDE FOR ALTERNATIVE CERTIFICATION PROGRAM DIRECTORS**





## INTERVIEW GUIDE

*(Re)introduce self; describe purpose of the discussion and overall project; get names, positions/titles for respondents; refer to the topic list we sent in advance.*

We are working with the United States Department of Education to describe the variety of teacher preparation program models and identify those suitable for an impact evaluation. The Department is particularly interested in models that aid teachers in high poverty schools and those in extreme shortage areas, although other models will also be considered. With this new information, the department will launch an evaluation focusing on the following research question: What is the relative impact on student achievement of teachers coming from one or two models of alternative teacher certification programs compared with those coming from one or two models of traditional programs?

### 1) HISTORY/CONTEXT

- a) When did the program begin?
- b) Does it exist/operate at more than one physical location? [*Such as branch campuses. If yes, get names/locations.*] What districts/regions/areas is this program intended to serve?
- c) What are the largest Alt. Cert. and Trad. Cert. programs generating new elementary teachers in your district/region? What about in the state? [*Try to get a sense of relative size – e.g., the largest program by far is X. Also, where does this program fall on the size continuum?*]
- d) Has the program structure changed recently or are there any plans to change the structure of this program? [*Structure might include size, course requirements, timing/order of courses, etc.*] If so, how and why?
- e) Have any recent changes in state law affected how this and/or other elementary certification programs operate? Do you anticipate any such changes due to state law in the near future? If so, what, how?

### 2) ELEMENTARY ADMISSIONS, REQUIREMENTS

- a) What are your program's admissions requirements? [*Probe for variation across different types of applicants. Do they have a minimum GPA, test requirements, interview process, course pre-requisite.*]
- b) We are interested in data on admissions over the past three years. [*First determine their yearly cycle. E.g., does it follow a traditional academic year or calendar year?*] How many people have applied and how many were admitted to your elementary certification program for each of the past three years? Please note how many of those who you actually admitted were Teach for American Teachers. [*AY 1999-2000, 2000-01, 2001-02 – or – CY 2000, 2001, 2002*]

- c) *[If a district program:]* Do you know how many new teachers have entered the district each of the last three years from Trad. Cert. programs?
- d) We are interested in the demographic profile of those admitted to your program.
  - (i) Thinking back across the past three years, what would you say was their average age? *[Estimates fine; also allow for clusters at different age—e.g., many right out of college, many others later in careers.]*
  - (ii) About what percentage have fallen into major race/ethnicity categories – white, black, Hispanic?
  - (iii) About what percentage were women?
- e) If you have an interview process, please describe the process and tell us which “off the shelf” interview protocol you use, if any. What is the experience like—who is involved, how long does it take, etc.?
- f) How do your admission requirements compare to the ones for those other large Alt. Cert. and Trad. Cert. programs in your area/region that we discussed a few minutes ago?
- g) Would you say your program is generally considered more or less “selective” compared to the other large Alt. Cert. and Trad. Cert. programs nearby? How so? *[In addition to their subjective report on entrance reqs and applicant qualifications, probe for data/anecdotes on the percentage of applicants admitted.]*
- h) In last 1-3 years, how many applicants did you have that turned out to be qualified based on meeting paper admissions standards (GPA, test scores, etc.)? How many of them got to the interview stage? How many got past the interview and were offered admission? How many actually enrolled?

### 3) ELEMENTARY COURSES AND COURSE REQUIREMENTS

- a) How many courses and/or instructional hours are students required to complete **before they can begin** student **teaching**? How about co-teaching? Solo teaching? *[Probe for possible variations across districts.]*

Number of university courses (hours in class, credit hours)?

Total Hours of other training (e.g., provided by district)?

- b) How many courses and/or instructional hours are students required to complete **after they start** student **teaching**? How about co-teaching? Solo teaching? *[Probe for possible variations across districts.]*

Number of university courses (hours in class, credit hours)?

Total Hours of other training (e.g., provided by district)?

- c) If “other training” is provided, either before teaching starts or after teaching starts, can you describe how these training classes compare to university courses? For example, are there required readings, papers, homework, etc.? *[rigor, intensity of experience]*

- d) What is the content (subject matter) of required courses before or during student teaching. *[Probe for amount/proportion of time program participants spend in different types of courses; have them send written materials if answer too complicated/detailed for this phone discussion.]*
- e) How do these requirements compare to those of (other) major Trad. Cert. programs in the state? Are there particular types of courses that students in your program do not have to take, that students in Trad. Cert. programs typically do have to take? If so, which type?
- f) *[If a district program:]* How much and what kind of training/courses do new teachers from Trad. Cert. programs have to take here before/after they start teaching? Are they in the same training courses as the new teachers in the Alt. Cert. Program? Number of courses, hours?
- g) How did your current elementary teacher curriculum come about? E.g., what kind of officials/staff developed it, who had to approve it? What is the rationale behind the way it is?
- h) Can you give us a sense of who teaches in your program? *[Prompt for number of instructors from different colleges/universities, number and type of school district officials, etc.]*

#### 4) MENTORING/SUPPORT DURING STUDENTS' FIRST YEAR OF TEACHING

- a) We're interested in the type and level of support that students in your elementary teaching program get during their first year of teaching. What kind of people provide that support, where does it take place, etc.? *[Probe for variation, e.g., across districts or for students with different prior experience.]*
- b) How often do new teachers meet with mentors or other support personnel, and how long do these contacts last? Does it involve use of release time and/or substitute teachers to make it really possible? *[Probe for variation, e.g., across districts or for students with different prior experience.]*

#### 5) ELEMENTARY GRADUATES AND PLACEMENT

- a) What is the average length of time for people to complete your elementary certification program? *[Explore any patterns/differences across important subgroups, e.g., those who have various credentials/experience at entry; those who want to teach various subjects/places.]*
- b) How many people completed the elementary program in each of the last three years? And what has been the completion rate (of those who enter, percent who complete)?
- c) How many middle and high school teachers does your program typically graduate in a year? *[If not numbers, get sense of size relative to elementary grads.]*
- d) Can you describe for us your placement services, such as the number/type of staff, and how they work with graduates and employers to find good matches?

- e) We're interested in where your graduates go to work after completing the program, because we would need to find a sizeable number of them if we were to study how they do compared to other teachers. In terms of the number of hires/placements, what were the top 5 districts that your graduates went to in each of the past three years, and how many went to each district?
- f) If we wanted to contact some of your graduates from the past few years, how might you be able to help us with that? Could you give us contact information from a graduates database? Do you know where they are employed? *[Probe for existence/completeness of such a database, how far back it goes, etc. E.g., what percentage of graduates could be located 1, 2, or 3 years after placement?]* Or would we have to work through the districts where they were placed? *[If so, probe for district cooperativeness and quality of their information.]*