RESEARCH ON ALTERNATE ROUTES
EDUCATION RESEARCH

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Despite the fact that billions of dollars are spent each year to analyze education issues, there is a dearth of quality research with replicable criteria—especially when dealing with alternate routes as researchers conclude in some of these studies. As authors have commented through their research findings, alternate routes pose substantial problems to researchers. There are few consistencies among varied entry prerequisites, program requirements, and completion steps. Mix in the experiences of career-changers and then view the results through the lens of individual school cultures, and these are a few reasons why the present research does not build upon the research of the past. Some of that is changing.

Thanks in part to new standards tied to some federal, private, and corporate grants, recent researchers have focused on the value added to student achievement by effective teaching from highly qualified teachers. Using this value-added approach, researchers now are more likely to make comparisons between the effectiveness of teachers trained through the traditional college-based programs and teachers who are prepared through an alternate route. By eventually isolating the qualities that contribute most to increasing student achievement, such research becomes increasingly valuable to all teacher preparation programs.

Since its founding in 1916, teacher educators and administrators, researchers and behavioral scientists have shared their research findings through the American Educational Research Association (AERA, 2006). Its 25,000 members are "concerned with improving the educational process by encouraging scholarly inquiry related to education and evaluation and, by promoting the dissemination and practical application of research results" (AERA, 2006). In 2005, AERA reported that its Teaching and Teacher Education Division[1] received over 1,300 proposals for presentation at the annual meeting; many dealt with alternate routes to teaching.

As a nation, America has a long history of collecting and disseminating information about education.

Education Research at the Federal Level

The U. S. Constitution is silent about education. Nevertheless, in 1867 Congress created an Office of Education to collect data that could be used by state and local education officials to improve education. Henry Barnard served as the first U.S. Commissioner of Education from 1867 to 1870. Barnard had long urged the establishment of a federal agency to gather and disseminate educational information and statistics, which had been collected for the first time in the census of 1840.

With a staff of three and limited authority, the agency began to collect and disseminate information about education in the United States. At that time, about 75 percent of America's 40 million inhabitants lived in the country or in rural villages and towns of fewer than 2,500 residents. School terms were only four or five months long and teachers often lived temporarily in the homes of the children enrolled in the rural schools.

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[1] There are 12 divisions (special interest groups) within AERA; each focuses on broad substantive or professional interests. Members submit proposals which are peer-reviewed for acceptance as conference presentations or publication.

Commissioner Barnard collected local and state education data and also reported on school legislation. For example, in only Massachusetts (1852) and Vermont (1867) had state legislators passed compulsory attendance laws, but such concerns were being raised in Congress as well (Haar, 2005; Infoplease, 2005). In 1864, Congress (the de facto state legislature for the District of Columbia) had passed legislation mandating compulsory attendance for children from six to 14. Among Commissioner Barnard's tasks was the mandate from Congress to "make an enumeration of the juvenile population of the District of Columbia, to ascertain the condition and relative efficiency of the public schools, and to report on such additional legislation as he thinks necessary to secure the advantages of the system to all children of the District" (U.S. Statutes 1804).

Barnard knew schools and schooling. He had previously served as the secretary of the Connecticut board of commissioners of common (public) schools from 1838 to 1842 and had worked with Horace Mann in Massachusetts to encourage school reforms. Barnard pioneered work in school inspection, recommendation of textbooks, organization of teachers' institutes and associations of parents and teachers (Haar, 2002, 26).

In his *Special Report*, Barnard traced the development of private as well as public schools, including schools of the colored population in D.C. To present a picture of education in D.C., he collected and noted attendance records, building costs and the costs of text books and other supplies, and included extensive census records about the total population.

To assess the "relative efficiency" of the public schools in the District, Barnard compared them with education facilities, student attendance rates, receipts and operating expenditures in other principal cities throughout the United States such as Albany, Baltimore, Chicago, Milwaukee, and St. Louis in 1860. Using the data from schools in other American cities and reference to some European institutions, Barnard set forth his suggestions for setting up control of the public schools in the District by a Board of Control.

Under Barnard's plan, the Congress would continue to provide the appropriations necessary for the D.C. public school system, but the Board would be responsible for hiring teachers, developing the curriculum, providing the facilities, and all other matters related to elementary, secondary, and special schools. In his report, Barnard warned about irregular, intermittent attendance of children of "teachable age" calling it "the fatal weakness of American popular education; the growing cancer of our social and political life" (142).

Barnard completed his *Special Report of the Commissioner of Education on the Condition and Improvement of Public Schools in the District of Columbia* in 1868. Congress rejected many of the ideas, however, especially those for increased funding for DC public schools. Nevertheless, Barnard's extensive data used in his report provided the basis for subsequent research and publications.

In 1870, Congress expressed discontent with Bernard's academic approach and reduced funding for the education agency and placed it within the Department of the Interior. Because the agency was no longer autonomous, Barnard resigned. The work of the agency continued (through agency name changes and cabinet affiliations) and from 1870 through 1917, the agency published an *Annual Report of the U.S. Commissioner of Education,* from the prototype that Barnard had begun.

For the next 40 years, the agency published the *Biennial Survey of Education in the United States,* and from 1962 to the present the *Digest of Education Statistics* has served a similar function (USDoE, 2002, 17). Throughout the consistency of the regular publications, a few research projects developed by the federal government agency gained national recognition.

As part of the Civil Rights Act of 1964, Section 402, Congress directed the U.S. commissioner of education to "conduct a survey … within two years of the enactment of this title, concerning the lack of availability of equal educational opportunities for individuals, by reason of race, color, religion, or national origin." To comply with the directive, the assistant commissioner for educational statistics selected James S. Coleman, a Johns Hopkins University sociologist and Ernest Q. Campbell, a sociology researcher from Vanderbilt University.

Coleman and Campbell produced what some still say was among the most extensive and best-known studies of American education. To meet the Congressional directive, the authors collected data from 570,000 students, 60,000 teachers, and 4,000 elementary and secondary schools across the country. Entitled *Equality of Educational Opportunity* (better known as the Coleman Report), the authors concluded that school might not be society's great equalizer after all. Black children started school trailing behind their white counterparts and essentially never caught up—even when their schools were as well equipped as those with predominantly white enrollments (1966).

The authors found that few school-related "inputs" seemed to matter much. "Outputs" or improving student achievement, however, was influenced by teachers' verbal ability, teachers' level of education, and teachers' years of experience. When teachers exhibited those characteristics, black students benefited more than white students, although none of the effects was large. [Subsequent analyses of the Coleman Report data suggest that Coleman's methodology was seriously flawed. Coleman conducted his analysis on data that had been aggregated to the school level. Researchers now understand that aggregating data in this way can distort findings (USDoE, 2003, 41).]

Using test data to measure educational disparities, and what children actually learned was a revolutionary innovation used in the Coleman Report. Researchers have revived and perfected this approach in recent studies to measure the effects of teacher qualities that add value to student achievement among all racial groups.

In 1969, Congress established the National Center for Education Statistics (NCES) to monitor levels of academic achievement to ultimately improve the quality of public education. As it did then, and continues to do, NCES develops and conducts national and state-level assessments of student performance in reading, math, science, writing, history, geography, and other curricular areas. It publishes reports outlining trends in what American students know and are able to do.

In 1980, Congress established the Department of Education as a cabinet level agency. Throughout the 140 years of name changes, agency affiliations, and added responsibilities, the department has continued to promote educational excellence by disseminating the latest discoveries on what works in teaching and learning. The department produces dozens of publications, such as the *Digest of Education Statistics, Condition of Education, Baccalaureate and Beyond, and the National Household Education Surveys Program: 2001-2005.* Most publications are available on the Department of Education Web sites and in print (Website www.ed.gov).

In 2002, with the creation of the Institute of Education Sciences through the Education Sciences Reform Act of 2002, Congress attempted to raise the bar for the standards to be used in educational research. The Institute of Education Sciences is the research arm of the U. S. Department of Education. Its mission is to expand knowledge and provide information on the condition of education, practices that improve academic achievement, and the effectiveness of federal and other education programs. Its goal is the transformation of education into an evidence-based field in which decision makers routinely seek out the best available research and data before adopting programs or practices that will affect significant numbers of students.

With few exceptions, it was not until the new millennium that carefully designed research became the basis for assessing components of teacher preparation, including alternate routes. In part, the change occurred because federal legislation required publicly reported accountability and disclosure as a result of the reauthorization of the Higher Education Act and of the Elementary and Secondary Education Act, known also as the *No Child Left Behind* Act. Continued federal funding through provisions in these laws was contingent upon states, institutions of higher education, and other entities documenting that teacher preparation programs met the state standards and other requirements in the laws.

On March 5, 2002, Grover J. (Russ) Whitehurst[2] addressed attendees at the White House Conference on Preparing Tomorrow's Teachers. His comments are useful in providing the framework within which to review the issues of quality. Whitehurst tied the goals of Title II (teacher quality) of ESEA to his comments about professional development and teacher quality. He identified these assumptions from the provisions of ESEA:

1. Teachers matter (otherwise why focus on teachers at all).
2. Teachers vary in their quality (otherwise why distinguish highly qualified teachers from others).
3. Quality is affected by
    a. General knowledge and ability (otherwise why require a bachelor's degree).
    b. Certification and licensure (otherwise why make that a defining feature of being highly qualified).
    c. Experience (otherwise why distinguish beginning from experienced teachers).
    d. Subject matter knowledge (otherwise why require that beginning teaches have demonstrated through their college major or an examination that they have knowledge of the subject matter they teach).
    e. Intensive and focused in-service training (otherwise why provide funds to support such activities).
    f. Alignment between teacher training and standards-based reforms (otherwise why require evidence of such alignment in state applications for funding) (USDoE, 2003, 40).

The requirements that Whitehurst referred to were the new disclosure obligations imposed on institutions of higher education, states, and other entities that accept federal funds under the Higher Education Act and/or the Elementary and Secondary Education Act. For the first time, all teacher preparation programs, including providers of alternate routes were to disaggregate their teacher preparation data, making available new information about their teacher preparation programs, first to the state and then to the federal government and the public.

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[2] President George W. Bush appointed Grover J. (Russ) Whitehurst as Assistant Secretary for Educational Research and Improvement and later to a 6-year term as the first Director of the Institute of Education Sciences in the U.S. Department of Education, in November 2002. The institute consists of the Office of the Director and four centers: the National Center for Education Research, the National Center for Education Statistics, the National Center for Education Evaluation and Regional Assistance, and the National Center for Special Education Research.

Whitehurst continued his comments by describing research studies that related to the above six characteristics that distinguish quality teachers. Of his review of the research literature that included a valid measure, Whitehurst reported that the most robust finding "is the effect of teacher verbal and cognitive ability on student achievement" [3]
Cognitive ability of teachers "accounts for more variance in student achievement than any other measured characteristic of teachers," he said (46).

Whitehurst cited more research studies showing that teachers matter but differ in effectiveness. That "variation in teacher effectiveness needs to be reduced substantially if our schools are going to perform at high levels," he said. Better research can help, and then he cautioned, "in science the plural of anecdote is not evidence" (41).

As the new millennium began, there was plenty of evidence that the U.S. Department of Education operated programs that touched on every area and level of education as reported in its *Digest of Education Statistics* 2005. In 2005, the Department's elementary and secondary programs annually served more than 14,600 school districts and some 54 million students attending more than 94,000 public schools and 27,000 private schools. Department programs also provided grant, loan, and work-study assistance to nearly 9.9 million postsecondary students. Nearly 4,500 employees administer these programs, managed by the U.S. Secretary of Education. When public, private, and higher education are included, the U.S. Department of Education has estimated that nearly one in every four Americans (81 million people) was involved either directly or indirectly, in providing or receiving formal education (USDoE, 2005, 1).

In 2006, the Department of Education budget was $88.8 billion, $457.1 million of which was appropriated for the research and work of the Institute of Education Sciences (IES) (USDoE, FY Budget, 2006). The budget is divided among the four centers within IES: National Center for Education Evaluation and Regional Assistance, National Center for Education Research, National Center for Education Statistics, and National Center for Special Education Research.

Some of the grant funds are awarded to institutions, states, or organizations for the purpose of learning more about alternate routes. For example, in 2003, as one of many grants to study various issues, IES awarded Mathematica Policy Research, Inc.[4] a grant of over $6.7 million to study and report on the Impact of Teacher Preparation Models. The research is intended to assess the effects of different types and amounts of teacher training on student achievement, taking into consideration the existing variation in teacher training across different routes to certification, both alternative and traditional. To meet the rigorous design criteria established by IES, Mathematica created a framework for the research design. As the contractor for this four-year (2003-2007) study, Mathematica was to report interim findings; one is reported below.

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[3] As examples of research that support the effect of teacher verbal and cognitive ability on student achievement, Whitehurst cited: Greenwald, Hedges, and Lane, 1996; Ferguson and Ladd, 1996; Kain & Singleton, 1996); Enrenberg and Brewer, 1994.

[4] Mathematica Policy Research, Inc. is a policy research organization with offices in Princeton, New Jersey, Cambridge, Massachusetts, and Washington, D.C. The employee-owned company specializes in survey design and implementation, and in research. Mathematica's research fields include: education, labor, health, social welfare, nutrition, disability, and early childhood.

The methodology for the Mathematica Policy Research, Inc. project indicates the controls in place to assure reliability and validity of the results, measures that were not always considered essential in earlier research sponsored by the Department of Education.

History of Teacher Education Research

In her engaging book on the history of education research, Ellen Lagemann takes the reader through the evolution of education research. As she does so, she ponders "Which traditions, trends, people, events, and institutions were important in establishing as well as disestablishing the most essential features of education research? Why has this domain of scholarly work always been regarded as something of a stepchild, reluctantly tolerated at the margins of academe and rarely trusted by policy makers, practitioners, or members of the public at large?" (1999, x). Throughout her book, Lagemann addresses these issues and raises still other questions about education research.

In a more specific research context, Suzanne M. Wilson, Robert E. Floden, and Joan Ferrini-Mundy wrote that:

> *research* on teacher education is a relatively new field. The development of a sustained line of scholarship that examines the content, character and impact of teacher education programs only began in the 1960s and gained momentum in the 1980s. In fact, with the exception of a brief period of time when the federal government supported teacher preparation research in the 1970s, there has been very little sustained funding for such research (2001, 1).

Such as it is, research, data collection and dissemination continue to influence our understanding of education and to help decision makers develop sensible policies and practices that will have wide benefit. Sometimes sensible policies and practices are the result of widely publicized reports, and there were many during that time.

RESEARCH OF ALTERNATE ROUTES

As noted in previous chapters, after the implementation of alternate routes in the early 1980s, dozens of individuals expressed their opinions about alternate route policies and programs. Early research studies were most likely to have been completed by program providers, some of which are included in the discussions in Chapter 4. Providers—those on the front lines of preparing teachers through alternate route programs—were concerned about evaluating or assessing specific programs or program components. The providers intended follow-up improvements to increase the number and caliber of candidates in their programs and to improve program quality.

Even though some states had implemented alternate routes prior to the New Jersey Provisional Teacher Program in 1985, researchers completed very few studies about the early programs. For those who studied the practice, it was prudent to evaluate a program after several years and/or a number of participants had completed the program and were teaching in classrooms.

Here we include ten prominent national research studies that have impacted the development and practices and reporting of alternate routes and/or programs. The format includes the year of publication, the title of the study, and the author, followed by a description of the rationale for the study, the methodology used, the findings and conclusion, and some limitations of the study and/or the findings.

An early national study, which has become the basis for much of the subsequent research, was completed in 1986. As a sign of the times (national fears about teacher shortages after *A Nation at Risk),* the authors reported that the research was conducted in conjunction with another study whose findings were published in a separate report: “Title II of the Education for Economic Security Act: An Analysis of First-Year Operations” (Marks, 1986).

NATIONAL STUDIES

1986. ***An Exploratory Study of Teacher Alternative Certification and Retraining Programs.*** The U.S. Department of Education supported the research of Nancy Adelman, Joan Michie, and Joanne Bogart, which was “intended for federal policymakers” and department staff to assess:

- The effects of federal actions on state and local operations,
- Methods for improving intergovernmental relations, and
- The effectiveness of federal programs in serving national priority groups (5).

Nancy E. Adelman, with the assistance of Joan Michie and Joanne Bogart, conducted a scholarly study of 20 alternative certification and retraining programs and reported on 10 of them in depth. The study came about “because of concerns about the supply and quality of American teachers [especially] special types of teacher training programs that have been developed by states, localities, and institutions of higher education” called alternative certification programs (1986, 7).

Of the 20 programs studied, 12 related to alternative certification programs and eight were retraining programs. The retraining programs focused exclusively on preparing science and math teachers who were already 10-15 year veterans of teaching who were offered new opportunities to teach in those shortage areas. Retraining programs are not reviewed here.

As noted previously in Chapter 2, Adelman et al. used this description:

> Alternative certification programs are those teacher preparation programs that enroll noncertified individuals with at least a bachelor’s degree, offering shortcuts, special assistance, or unique curricula leading to eligibility for a standard teaching credential.

Methodology. The authors write that the sample they used was some proportion of the total number [of alternate routes] in existence, but that “the size of the universe remains unknown” (17). The study focused on programs that had ‘graduated’ at least one cycle of participants by the summer of 1986 when the authors collected the information.

The analyses and findings were based on a literature review and descriptions of the 20 programs. Within the report, the authors provided the details of each program and descriptions of the components using the following outline:

I. Name of program
    A. Program Goals and Expectations
    B. Recruitment, Application, and Selection
    C. The Program
        1. Overview
        2. Formal Instruction
        3. Field Experience
        4. Supervision
        5. Evaluation of Participants
        6. Post-program Placement
        7. Program Evaluation
    D. Financing of the Program and Program Participants

The authors included an annotated bibliography with the study. In it, they identified 60 studies, the research findings of which assisted them in their own study. Most of the literature reviewed focused on preparation programs, the need for mathematics and science teachers, teacher quality, state reforms, and certification issues.

Early Reference in Adelman: Hazlett. Only two titles in the Adelman et al. bibliography referred specifically to alternative certification, an indication of the paucity of early research on the subject. J.S. Hazlett wrote in *Contemporary Education* "teacher education should be reformed rather than disregarded. Attention must be given to the profession itself before the discipline can be modified. Areas for improvement include salaries, working conditions, and teacher control over curriculum. Efforts at establishing alternative certification plans should be directed at improving current education programs" (1984, 46). P.149.

The other title was produced by the Southern Regional Education Board (SREB) in 1984. The paper covered "Alternative certification for teachers: 1984 state actions" and listed the legislative efforts in alternative certification among states within the Board's jurisdiction (155). Also in 1984, SREB published a paper on state initiatives for developing alternative certification routes aimed at liberal arts graduates (155).

Early Reference in Adelman: SREB. To provide the context for why the alternative certification programs were developed, the literature review covered:

- Documentation of the extent of teacher shortages,
- Recent state changes in teacher preparation and certification requirements,
- Professional standards for mathematics and science teachers, and
- Assessment of teacher performance.

Although the programs varied as to administrative control—combinations of a state educational agency (SEA), local educational agency (LEA), and institution of higher education (IHE)—the authors wrote that this diversity provided enough similarities to allow comparisons. The researchers noted some unique traits such as the involvement of business and industry.

Of the 20 programs, the authors found various combinations with regard to the amount of formal coursework required, the length of the internship or student teaching period, provisions for financial and psychological support, and sources of funding.

For the interview samples, the authors conducted telephone interviews with 76 individuals in 10 of the programs. Program administrators provided the names of program participants. The authors "deliberately selected participants who had been placed in schools or school districts with several other trainees on the theory that the interviewees therefore would be able to compare and contrast their own experiences in the program with those of other participants whom they saw frequently" (85). In turn, program participants named two supervisors who could evaluate their performance.

The supervisor identified a "regular teacher" to gauge the "attitude of traditionally prepared staff toward new strategies for professional training" (86). The authors noted that "regular teachers were particularly elusive" (86). A similar report completed by the SREB in 1990 is included later in this chapter.

Findings and Conclusions. The authors reported the findings pursuant to the questions the study had addressed: (1) What are the characteristics of individuals being attracted to such programs and of the programs themselves? (2) How successful are programs in preparing teachers, particularly for math and science classrooms? (3) What are participants' career goals and how successful are they in finding permanent teaching positions? And (4) What are the perceptions of current faculty and administrators regarding alternative certification and retraining? (8) Overall, the study found and the authors concluded “alternative certification programs to be responsible and innovative approaches to addressing local and state issues of teacher supply and quality” (11). Findings related to alternative certification were:

> **Characteristics and Career Goals of Participants.** Alternative certification programs appear to be attracting well-educated individuals with a sincere interest in teaching. Participants’ previous job experiences are diverse, but the majority of this sample had engaged in some type of instructional activity at some point prior to entering an alternative certification program. Participants’ most common reason for enrolling in an alternative certification program is a personal commitment to go into teaching at some time (8).
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> **Characteristics and Success of Programs.** Alternative certification programs feature more field experience and more intense supervision in the field. Formal coursework is a compressed version of traditional teacher education. Full time teaching responsibilities and attending formal instruction after work is highly stressful. Alternate route candidates had the most difficulty with classroom management skills, not unlike traditionally trained beginning teachers (9).
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> **Evaluations and Perceptions.** Alternative certification programs produce subject area-proficient teachers who are also rated highly on instructional skills (when compared to traditionally prepared beginning teachers). All alternatively certified teachers interviewed intended to teach. Supervisors described hostile or cynical reactions to the programs from some of their colleagues.

Limitations of the Study. In retrospect, contemporary researchers could question the validity of the findings on the basis of several issues: the sample was not random; there may have been bias (even if unintended) in the selection of programs and participants, and in the participant-nomination of supervisors. Comparisons of participants, settings, and the effects of funding were all of unequal value and perhaps one or more influenced the outcomes in decidedly favorable (or unfavorable) ways. The lists of limitations could go on, but the fact remains that few if any researchers questioned the results over the past 20 years. Most accepted the explanations of the authors and adapted the criteria and format for studies of their own, but very few studies claimed a national scope.

1990 – 2006. *Alternative Teacher Certification: A State-by-State Analysis.* C. Emily Feistritzer, founder of the National Center for Education (NCEI) has collected and analyzed the data from each state that has acknowledged having an alternate route to teacher certification since 1983. Each year since 1990, the National Center for Education Information (NCEI) has published the results of a survey sent annually to state authorities in *Alternative Teacher Certification: A State-by-State Analysis*. The report updates the activities in the states as they relate to alternate routes. What began in 1990, Feistritzer has expanded in both analysis and information and discussions are included throughout this book.

Methodology. As the states have developed alternate routes, **either through state statutes, state board of education rulemaking, or decisions through state licensing commissions, the state has identified** a contact. This contact is responsible for responding to inquiries from prospective teacher candidates about the state’s alternate route(s) and other administrative duties as well—including responding to the annual NCEI questionnaire.

State data gathered for the report for the year in question includes reporting on:

- Additions, changes, or deletions from the prior year’s alternate routes,

- Numbers of teaching certificates issued to persons who completed an alternate route,
- Racial, ethnicity, gender, and age characteristics of alternate route candidates,
- An estimation of the primary activity of alternate route candidates prior to program entry,
- The types of communities that alternate route participants teach in,
- The employment (full-time or part-time) and cost of the alternative route,
- The number of *newly hired* teachers by the state,
- The numbers of total teachers employed by the state,
- The numbers of persons in the state who completed an approved college teacher preparation program,
- The numbers of emergency teaching licenses issued by the state, and
- The numbers of temporary/other teaching licenses issued by the state.

Because the above data has been collected over time, the annual report includes a longitudinal sequence for each of the data sets since 1985-86.

In the annual questionnaire, each state also updates the profile of the individual alternate routes within the state. In 2006, 50 states and the District of Columbia had authorized 124 alternate routes. After the state completes the questionnaire, the profile of each alternate route includes the following information:

Title
History
Motivation
Subject Areas/Grade Levels Covered
Who Operates
Requirements to Enter
Program Description
Number of Credit Hours to Complete
Who Evaluates
Length of Time to Complete
The Institutions of higher education that have developed alternative teacher preparation programs leading to a teaching license,
States with which the state has reciprocity of teacher licenses,
Institutions of higher education that have *any* teacher preparation programs leading to a license to teach.
Contact information for persons interested in finding a teaching position in the state.

The compilation of the survey questionnaires is included in the report, identified first by state, then by alternate route within each state. Feistritzer classifies each alternate route pursuant to the system devised by NCEI in 1991 as indicated in Chapter 2. In addition to her annual analysis of the data, Feistritzer provides an overview of the changes in the alternate route movement since the mid-1980s.

Findings and Conclusion. A survey provides a snapshot in time of the condition of the item being studied on the date of the response. *A State-by-State Analysis* does that about each individual alternate route. At the same time, however, it also provides a long-term compilation of information about a number of items of historical interest such as the numbers of candidates who have completed an alternate route and how many licenses the state issued.

In 2006, Feistritzer reported that “based on data submitted by the states, NCEI estimates that approximately 50,000 individuals were issued teaching certificates through alternative routes in 2004-05, up from approximately 39,000 the year before” (Feistritzer, 2006, 8).

1997. *Has the Alternative Certification Policy Materialized its Promise? A Comparison between Traditionally and Alternatively Certified Teachers in Public Schools.*

In 1997, Jianping Shen noted that 41 states had alternative certification policies in place. No national study, however, had compared the characteristics of teachers who had been prepared to teach through traditional college-based programs with those teachers who had been prepared through an alternate route.

Shen identified a number of issues about which proponents and opponents of the two preparation routes did not agree. For example, Shen said that “Proponents argue that the alternative route to teaching will improve the teaching force by reducing teacher shortage, raising teacher quality, and diversifying the teaching force” (276). On the other hand, opponents “maintain that the alternative certification policy degrades the professional status of teaching and ultimately hinders student learning” (276).

Shen was quick to point out that even within the basic arguments, there were subsets, including demographic issues. He expected his research to provide answers to the following questions:

1) What percentage of the public teaching force was AC teachers?
2) Did TC and AC teachers differ in demographics, work experience, academic qualification, career pattern, and what and where they taught?

The answers then, could be used to “comprehensively examine policy implications of TC and AC practices,” reasoned Shen (277).

Methodology. Shen constructed a subsample from the nationally representative sample of public school teachers from the *Schools and Staffing Survey* (SASS) 1993-1994. The National Center for Education Statistics (NCES) conducted the survey of 47,105 teachers (weighted N = 2,561,294). To capture teachers who had completed an alternate route, only those teachers who had been certified and hired after 1986 were included in the subsample weighted down to “approximate the population but also to adjust it down to the actual sample size of the study” (278). Of the total representative sample, a subsample of 1,119 teachers represented the alternative certification teachers. In a self-selection response, these teachers had responded that they had [received] their certificate through “what the state calls an ‘alternative certification program’” (277).

Findings and Conclusions. Of the demographics, Shen found “little difference between TC and AC teachers in their gender composition” (278), roughly three-fourths were female and one-fourth were male. Among TC teachers, approximately 87 % were White and 13 % were non-White. Among AC teachers, over 79 percent were White and over 20 percent were non-White. Shen reported that “it seems that a higher percentage of young teachers were certified through AC than through TC, and AC policy did not bring more older people into the public teaching force” (278).

Shen wrote in the findings that responses to the main activities of alternative certification candidates before entering teaching were a surprise: “51 percent came right out of college, another [nearly] 24 percent already held teaching or education-related positions, and only [just over] 22 percent came from occupations other than education” (279).

As for degrees, Shen found that "the data on both bachelor's degree and highest degree suggested that AC failed to attract personnel with higher academic qualifications" (279). There was a higher percentage of AC teachers in secondary schools: 52 percent to 45 percent TC teachers (279).

A higher percentage of AC teachers (nearly 38 percent) than TC teachers (nearly 27 percent) worked in schools where 50 to 100 percent of the students were minority. Similarly, a higher percentage of AC teachers (19 percent to 14 percent) taught mathematics or science. Based on his calculations, Shen found that AC teachers intended to treat teaching as a lifelong career (280).

Limitations. Dale Ballou responded with his concerns in a subsequent issue of the *Educational Evaluation and Policy Analysis*, the journal that had published Shen's research. At the time in 1998, Ballou was an associate professor in the Department of Economics at the University of Massachusetts, Amherst.

Ballou pointed out that "the key survey question—on which all the rest of the analysis depends—was an item that asked teachers to identify the type of certificate they held" (313). Of the eight responses possible, two were intended to identify persons who entered teaching through alternative certification programs. "Unfortunately," wrote Ballou, "there is considerable evidence that …teachers were frequently mistaken about the type of certificate they held or for other reasons failed to answer correctly" (313).

In re-interview studies conducted by the National Center for Education Statistics, NCES found a high degree of response error in questions dealing with teacher training and certification. The index of inconsistency was above 50 percent; however, because SASS did not properly identify individuals who entered teaching via alternative certification programs, the data were "badly contaminated" (313).

Ballou identified two other discrepancies in Shen's findings as a result of the erroneous data, self-reported by teachers in the SASS. Because alternative certification programs exist for the benefit of non-education (i.e., liberal arts) majors, "one sure sign there were many false responses to the survey is the number of people who claimed they held alternative certificates (52 percent) who nonetheless indicated elsewhere on the survey that their undergraduate degree was in education" (314).

Finally, Ballou found another miscalculation through Shen's using SASS data. "Nearly 4 percent of the teachers in the states that lack alternative routes claimed they were currently enrolled in alternative certification programs" (314). As a result of Ballou's evidence, other researchers using SASS data have been alerted to potential shortcomings of the data.

2001. *Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations.* The U.S. Department of Education, Office of Educational Research and Improvement supported the report, which Suzanne M. Wilson, Robert E. Floden, and Joan Ferrini-Mundy prepared for the Center for the Study of Teaching and Policy in collaboration with Michigan State University. The resulting report was intended to "provide directions" to improve teacher preparation nationally (i).

Methodology. The study was organized around five major questions that address key aspects of teacher preparation, one of which was "What are the components and characteristics of high-quality alternative certification programs" (iii)? The authors focused on a review "of the existing research—empirical studies[5], conducted with rigor,[6] and critically reviewed by other researchers—on teacher preparation," through both traditional and alternate routes (2001, 1). In addition to being pertinent to the five study questions, studies reviewed had been published in the United States within the past two decades.

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[5] Empirical studies are studies that offer evidence (quantitative, qualitative, or both) for conclusions, rather than offering opinion, theory, or principles.

Of the 313 resources considered, the authors included 57 for their review. They explained that "Studies were discarded for four reasons: (1) they were not directly related to the questions; (2) they lacked sufficient rigor; (3) they consisted of arguments based on opinion or principles without empirical evidence; or (4) they were based on a single course in a particular teacher education program. As a result, the authors rejected commission reports, articles in newspapers, conference papers, and essays. They examined only a very few widely cited books.

The resulting report consisted of an outline format that included the question, findings, weaknesses, and gaps in the research with suggestions for future research. Each section included careful annotations of the research scrutinized. In addition, the authors included details of each of the studies in an appendix. In addition to the name, date, author, and publication source, the details also included the type of research, sample size and variables, and the relevant findings. The data were presented in a consistent three-column format.

Of the five questions considered by the authors, we review here only question 5: What are the components and characteristics of high-quality alternative certification programs? Wilson et al. "found 14[7] papers reporting on 11 studies that shed light on issues of alternative certification" (26). Of the 14, three were based on the same data set and resulted in largely the same findings; all three were studies by Jianping Shen (see above) and were the only studies reviewed by the authors that involved a large-scale national survey. The authors noted "the work of C. Emily Feistritzer at the National Center for Education Information provides helpful data on the prevalence of alternative routes" (26).

Three studies compared graduates of alternate routes to traditionally prepared first-year teachers in New Hampshire (Jelmberg, 1996), Georgia (Miller, McKenna, and McKenna, 1998), and California (Sandlin, Young, and Karge, 1992). Stoddart conducted an analysis of one program: the Los Angeles Unified School District Intern Program. Three studies compared and

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[6] Rigorous studies are studies that meet generally accepted standards in relevant research traditions.

[7] Goldhaber and Brewer, 2000; Grossman, 1989; Guyton, Fox, and Sisk, 1991; W. Robert Houston, Faith Marshall, and Teddy McDavid, "Problems of Traditionally Prepared and Alternatively Certified First-Year Teachers," (*Education and Urban Society*, 1993, Volume 26, pp. 78-89); Jerry B. Hutton, Frank W. Lutz, and James L. Williamson, "Characteristics, Attitudes, and Performance of Alternative Certification Interns" (*Educational Research Quarterly*, 1990, Volume 14, pp. 38-48); James Jelmberg, "College-Based Teacher Education Versus State-Sponsored Alternative Programs," (*Journal of Teacher Education*, Volume 47, 1996, pp. 60-66; Frank W. Lutz and Jerry B. Hutton, "Alternative Teacher Certification: Its Policy Implications for Classroom and Personnel Practice" (*Educational Evaluation and Policy Analysis*, 1989, Volume 11, pp. 237-154); McDiarmid and Wilson, 1991; John W. Miller, Michael C. McKenna, and Beverly A. McKenna, "A Comparison of Alternatively and Traditionally Prepared Teachers" (*Journal of TeacherEducation*, 1998, Volume 49, pp. 165-176); Ruth A. Sandlin, Beverly L. Young, and Belinda D. Karge, "Regularly and Alternatively Credentialed Beginning Teachers: Comparison and Contrast of Their Development, (*Action in Teacher Education*, Volume 14, 1992-1993, pp. 16-23); Jianping Shen, "Has Alternative Certification Policy Materialized its Promise? A Comparison Between Traditionally and Alternatively Certified Teachers in Public Schools" (*Educational Evaluation and Policy Analysis*, 1997, Volume 19, pp. 276-283); Jianping Shen, "Alternative Certification, Minority Teachers, And Urban Education" (*Education and Urban Society*, Volume 31, 1998a, pp. 30-41); Jianping Shen, "The Impact of Alternative Certification On The Elementary And Secondary Public Teaching Force," (*Journal of Research and Development in Education*, Volume 31(1), 1998b, pp. 9-16); Trish Stoddart, "Los Angeles Unified School District Intern Program: Recruiting and Preparing Teachers for an Urban Context" (*Peabody Journal of Education*, 1990, Volume 67, pp. 84-122).

evaluated alternative routes in Dallas and Houston (Hutton and Lutz (1989), and Williamson, 1990; Houston, Marshall and McDavid, 1993). An interpretive study involved three case studies of new teachers who had no prior preparation (Grossman, 1989). One study compared alternate route teachers' knowledge and beliefs with a national sample of graduates from teacher preparation programs (McDiarmid and Wilson, 1991). Goldhaber and Brewer used the National Educational Longitudinal Survey 1988 to look at student effects with teachers who held standard certification or other forms of certification.

Findings and Conclusions. Wilson et al. reported that the research they reviewed supported "several important results" (27), although not all of the 14 studies supported each of these findings:

- Alternative routes are attracting a more diverse pool of perspective teachers in terms of age and ethnicity.
- Alternative routes have a mixed record for attracting the "best and brightest."
- There are higher percentages of alternatively certified teachers teaching in urban settings or teaching minority children.
- Evaluations of the performance of alternate route and traditionally prepared teachers produce mixed results.
- Teachers who have come through high-quality alternative routes and teachers traditionally certified show some similarities.
- Successful alternate routes appear to be resource- and labor-intensive.
- Many programs have high drop-out rates.

Wilson et al. singled out the Stoddart study as providing several of the features that may be important to a high quality alternative certification program, including:

- High entrance standards,
- Extensive mentoring and supervision,
- Extensive pedagogical training in instruction, management, curriculum, and working with diverse students,
- Frequent and substantial evaluation,
- Practice in lesson planning and teaching prior to taking on full responsibility as a teacher, and
- High exit standards.

Limitations of the Study. By their own admission, Wilson et al. noted that "it is difficult to determine whether the variation in the research results is due to differences in program quality" (30). That research relies on supervisors' rating, problematic proxies for subject matter knowledge, and even the validity of the data as pointed out by Ballou in his review of the Shen research are all problematic. The authors also call for strengthening the objectivity of studies of alternatively and traditionally certified teachers. They conclude that "Currently, the biases of the researchers (pro or con alternative routes) are often reflected in their analyses" (31).

Because of frequent changes to alternate routes, researchers and reviewers alike should take note of substantial changes to programs when reviewing the literature only and not the actual programs.

2002 – 2005. *The Secretary's Annual Report on Teacher Quality.* Through Title II of the Higher Education Act and the *No Child Left Behind* Act, Congress mandated new reporting requirements about a variety of issues. State teacher certification requirements, the performance of prospective teachers on state licensure tests and the number of teachers hired on temporary or emergency certificates, as well as the characteristics of teachers are included in the national data. This study will look at the data of significance to alternate routes to teacher certification.

Methodology. Three stages of gathering and reporting data were specified by the 1998 amendments to the Higher Education Act, which established the Title II accountability provisions. Once these steps are completed, the U.S. Secretary of Education prepares the annual report for Congress and the public. The data collection steps include:

1. Institutions of higher education report data to states, including pass rates on state certification and licensure examinations of the students completing their teacher preparation programs.
2. Using these reports, as well as state-maintained data, states report to the U. S. Department of Education state certification and licensure requirements for completers of traditional and alternative teacher preparation programs, statewide pass rates on the most recent state assessments of graduates of teacher preparation programs, as well as pass rates disaggregated by institution and quartile ranking of their institutions based on their pass rates, the number of teachers on waivers or emergency and temporary permits, information on teacher standards and their alignment with student standards and criteria for identifying low-performing schools of education.
3. The U.S. Department of Education verifies and analyzes the data. Complete reports from each state are published on the Web at http://www.title2.org/.

2002. Findings and Conclusions. The first report acknowledged that because alternate routes are defined by each state, "there is little comparability of these routes across states" (47). Even so, the report noted that several states had been ruled out of compliance with the Title II reporting requirements (47). Some states had not reported the alternative route pass rates[8] separately from those teacher candidates prepared through regular routes to certification.

The report concluded that the current system dissuades many high-achieving college students and mid-career professionals from entering the teaching profession because it places unnecessary obstacles in their path.

2003. Findings and Conclusions. The second report indicated that "states were making progress in raising academic standards for teachers while lowering unnecessary barriers" (6). Along with other advancements, the report cited innovative alternative routes to teaching. It reported that all but nine states (including the District of Columbia, Guam and the Virgin Islands) had approved an alternative route to certification as of October 2002.[9]

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[8] In their reports, institutions of higher education must include the pass rates of their graduates or program completers on required state teacher assessments as well as program information such as the number of students in their teacher preparation programs and the faculty-student ratio in supervised practice teaching.

[9] While most of the information from the Title II state reports matches that collected by NCEI, there are noticeable differences. The contacts for Title II reporting list several more master's in teaching (MAT) programs as alternative routes than do the contacts for NCEI. NCEI obtains its information about alternative routes to teacher certification from the offices in each state that directly administer alternative routes to teacher certification. In some cases, that is the overall teacher education and certification offices; in others, it is a special office within the state office of teacher education and certification; in others, it is a licensing commission or board in charge of teacher licensing. Who, at the state level is "in charge of" alternative routes to teacher certification is as much a moving target as the routes themselves. In some states that have large numbers of individuals coming into teaching through alternative routes to teacher certification, namely, California, Texas, and Georgia, teacher licensing has been in the hands of state commissions or boards separate from the state department of education. Organizational changes could result in the responsibilities being transferred to the state departments. Another problem with state data has been the lack of uniform reporting and data collection procedures.

The report dedicated six pages to innovative routes to teaching, most of which had been operating previously. The report highlighted the American Board for Certification of Teacher Excellence (ABCTE), a new alternative pathway and a "distinctive alternate (Passport) certification to the teaching profession" (26). As an alternative pathway, ABCTE "does not require would-be teachers to attend a school of education in order to apply for certification" (26). Teaching candidates who hold a bachelor's degree will demonstrate mastery of their subject matter by passing a rigorous test of professional knowledge and complete a pre-service program of professional development.

As an alternative certificate, a state would need to recognize the ABCTE's Passport as valid preparation to teach in the state's public schools. According to the report, "The ultimate goal is to create a certificate that is recognized in all 50 states" (27). Education Secretary Rod Paige called the American Board "radically better than the system we have now, a system that drives thousands of talented people away from our classrooms" (27).

2004. Findings and Conclusions. The third report covers a variety of issues related to teaching and teacher quality, including alternative routes to the classroom. A chapter was devoted to federal activities and federal funding programs that support national teacher quality initiatives. Included were improving teacher quality state grants ($2.9 billion), teacher quality enhancement grants ($88.9 million), and transition to teaching grants ($45.3 million), grants that may impact alternate routes. In addition, the report noted that the "Department is committed to continuing to forge strong partnerships with states, institutions and national organizations, such as the American Board for the Certification of Teacher Excellence [and] the National Center for Alternative Certification[10] (13).

The report indicated that of the 47 states with approved alternative routes to teaching, the states reported a total of 89 alternative routes. All of the 89 alternative routes require a bachelor's degree (often in a field related to the subject the candidate will be teaching), 60 percent require practice teaching of candidates (49 of 82 reporting) and 85 percent use the same assessments as are used for traditional route certification (74 or 87 reporting) (31).

2005. Findings and Conclusions. The fourth report was longer and more detailed than were the previous reports. The number of teachers receiving initial certification totaled 315,298, up from 305,047 certified in 2003. Teacher distribution shortfalls persist in certain subject areas and grade levels, as well as in rural, urban, and outlying area locations. The number of teacher education programs designated as low performing decreased to 20, down from 25 in 2003.

Alternative routes to certification resulted in 35,353 graduates, "close to 20 percent of new teacher graduates" (5). In 2004, the top five states producing teachers through alternative certification were California, Georgia, New Jersey, New York and Texas. Together, these five states produced 82 percent of all teachers prepared through alternative routes to teacher certification nationally[11] (27).

Department of Education regulations of teacher quality require states to stop granting waivers of state certification requirements to teachers of core academic subjects by the close of the 2005-2006 school year. States grant waivers to teachers to alleviate staffing shortages in schools. A waiver may allow a teacher to teach while working to meet certification requirements, to teach a subject outside of the field in which he or she was trained, or even be used as a stopgap measure to fill classroom vacancies. Teachers on waivers do not meet the requirements for full certification. They generally hold some kind of provisional, emergency or temporary license (39).

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[10] The National Center for Alternative Certification (NCAC) was established in September 2003 by the National Center for Education Information (NCEI) with a U.S. Department of Education grant of $2.25 million. NCAC is the nation's first clearinghouse for alternative routes to teaching and can be accessed at www.teach-now.org.

[11] The data may not include the number of alternative route completers from states that do not have testing programs.

For the 2004 data reporting cycle, the definition of a waiver was revised to align more closely with the NCLB provisions for highly qualified teachers. The Higher Education Act 2004 waiver reporting requirements were "modified to exclude both teachers participating in alternative routes who are considered fully certified for purposes of NCLB, and those teachers who are short- or long-term substitutes (as defined by the state)" (39).

In her message to readers, Secretary of Education Margaret Spellings said "Throughout America, teachers, school districts, local governments, states, public and private entities, and institutions of higher education are participating in a wide variety of initiatives that are leading the way to improving traditional and alternative teacher preparation programs and keeping good teachers in the nation's classrooms. Many of these initiatives are identified in this report. However, despite the progress being made, much remains to be done" (iii).

2005. ***Profile of Alternate Route Teachers.*** From November 12, 2004 to March 12, 2005, the National Center for Education Information conducted a survey of individuals who had entered teaching through alternate routes to learn about them and why they chose alternate routes to teacher certification. NCEI selected samples from individuals entering teaching through alternate routes in Texas, Florida, the Troops to Teachers program, the Milwaukee Teacher Education Center program, and the New York City Teaching Fellows program. Feistritzer selected these because these alternate routes represented a cross section of all alternate routes in the nation.

NCEI used a 45-item online paper survey that was mailed to the sample, except those in Florida, who completed the survey online. A second mailing was sent to all Texas and Troops to Teachers non-respondents and emails were sent to NYCTF and Florida non-respondents, asking them to fill out the survey and return to NCEI – OR to go online to complete the questionnaire.

By March 12, 2005, respondents had completed 2,647 surveys.

Methodology. In an effort to have the survey reflect a national sample, NCEI identified populations that reflected the diversity and complexity of alternate route programs at large.

Texas began implementation of its first alternate route program in the Houston Independent School District in 1985. In 2004, Texas had implemented 67 programs throughout the state, including 21 in community colleges and eight in which private entities conducted the programs. In 2003-2004, these alternate route programs produced 7,117 teachers; one-third of all new hires in Texas. A random selection of 3,000 individuals was drawn from the 33,054 who were certified through alternate route programs in Texas from 1999 to 2004.

Florida has been implementing alternate routes to teacher certification on a limited scale since 1997. In 2001-02, there were just five school districts participating, comparable to the participation level of most other states during that time. In 2004, after Florida state law required every school district in the state to implement an alternate route program, 2,272 individuals had participated in an alternate route program in Florida. NCEI contacted all of them to complete the survey online. NCEI's contractor, the Florida Center for Interactive Media at Florida State University (FSU), and Sande Milton and Pamela Flood, educational researchers at FSU and Karen Wilde, formerly with the Florida State Department of Education provided technical and other assistance.

The demand for teachers has been greatest in large cities. So has the development of alternate routes. NCEI asked the New York City Teaching Fellows (NYCTF)program director, Vicki Bernstein, to draw a sample of 2,000 individuals who had completed that alternate route program. The state of New York authorized this program in 2000.

The Troops to Teachers recruitment program has been in existence since 1994 and has brought over 9,000 former military personnel from all over the country into K-12 teaching. Of those, Troops to Teachers director John Gantz provided a list of 785 individuals who had entered teaching through an alternate route to certification since 1994; all were surveyed.

In addition, NCEI sent the survey questionnaire to 300 individuals who participated in the Milwaukee Teacher Education Center program.

NCEI compared the responses from the first 1,582 questionnaires completed to the responses when all 2,647 questionnaires were completed. On no item was there ever more than a one percentage difference.

NCEI also compared response data from the survey with data kept by the states regarding basic demographics and found no significant differences. In comparisons between NCEI survey responses and data maintained by the sample sources in Texas, Florida, New York City Teaching Fellows and Troops to Teachers, NCEI deemed the sample reflective of each of the respective populations.

Findings and Conclusions. The survey highlights in regard to demographics were included in Chapter 5. In addition, the data showed that

- nearly half (47 percent) of those entering teaching through alternate routes say they would not have become a teacher if an alternate route to certification had not been available.
- The data indicate that the older one gets the less inclined one is to enter teaching without an alternate route. More than half (59 percent) of those surveyed who were in their 50s or older when they entered an alternate route say they would not have become a teacher if an alternate route had not been available. Half (50 percent) of those in their 40s, 46 percent of those in their 30s, and 45 percent in their 20s say they would not have become teachers if an alternate route had not been available.

Further, in the absence of an alternative certification route:

- More than half (54 percent) of individuals entering teaching from a professional occupation say they would not have become teachers.
- More than half (52 percent) of men compared to 45 percent of women say they would not have become a teacher.
- Fifty-three percent of Hispanics compared to 48 percent of whites and 43 percent of African-Americans in the survey say they would not have become a teacher.
- Nearly half (47 percent) of the people entering teaching through alternate routes were working in a non-education job before they began an alternative teacher certification program; 40 percent were working in a professional occupation outside the field of education.
- Nearly two-thirds (62 percent) of the survey respondents entering teaching through alternate routes expect to be teaching K-12 five years from now. Another 24 percent expect to be in some other job in education. States with

> the highest percentage of alternatively certified teachers report that 87 percent of them are still teaching after five years (vi).

2005. ***Studying Teacher Education: The Report of the AERA Panel on Research and Teacher Education.*** Work on this extensive project began in 1999 by the American Educational Research Association (AERA) Panel on Research and Teacher Education. After initial approval by AERA officials, Marilyn Cochran-Smith and Kenneth Zeichner were appointed as the Panel's Co-chairs and Co-editors. The process began with ten key individuals with different areas of expertise, including teacher education, policy, testing and assessment, curriculum, liberal arts, multicultural education, research design and methods, and school reform.

The result is an 804-page volume about which the Co-chairs wrote in the Preface: "In the midst of claims and counter-claims about which teacher preparation programs and routes were truly effective, our charge was to try to make sense of what the research did and did not say about teacher education and to craft a new research agenda that might begin to answer some of the most important, but previously unanswered questions" (ix).

Methodology. Individual members of the AERA Panel on Research and Teacher Education authored the 12 chapters in *Studying Teacher Education.* They weighed the "empirical evidence relevant to key practices and policies in preservice teacher education in the United States" (x). The authors argue that research "helps to identify and explain what the active ingredients are in teacher preparation programs whose graduates have a positive impact on pupils' learning and other important educational outcomes" (4).

The panel employed the AERA guidelines for the selection of the studies to review and included only studies that had been peer reviewed and that provided adequate descriptions of the data collection and data analysis methods. The authors reviewed only U.S. research that had been published from 1986 to 2002. The format for each chapter included the topic under discussion, background information, guiding questions about the research, what was learned about the topic, what was learned about the research, and the research still needed.

Although the authors discussed some components of alternative programs (subject matter specific and demographic issues) in other chapters of *Studying Teacher Education*, they covered alternative programs as Topic 9: Research on Teacher Education Programs. In their review of the literature, the authors, Kenneth M. Zeichner and Hilary G. Conklin identified 38 studies that met their criteria for review. They selected and grouped them into three major categories and subgroups; relevant information from Topic 9 is discussed here.

1) Four studies of 4-year versus 5-year programs[12],
2) Alternative[13] versus traditional certification based upon program sponsorship,
    a. Four studies of state sponsored programs
    b. Eight studies of university-sponsored and university-based programs
    c. Five studies of school district sponsored programs

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[12] A 4-year program is the traditional undergraduate model; fifth-year programs are more diverse: (a) the extended and integrated 5-year program leading to a bachelor's degree, (b) the extended and integrated 5-year program leading to a bachelor's and master's degree, (c) the fifth-year program leading to a master's degree, (d) the 6-year program leading to a master's degree. The literature makes further distinctions between different kinds of graduate programs such as the master of arts in teaching (MAT) with a strong liberal arts focus and other programs such as the two-year programs that focus on preparing teachers who will work for social justice.

[13] The authors have adopted Adelman's definition of alternative certification as "those teacher education programs that enroll noncertified individuals with at least a bachelor's degree offering shortcuts, special assistance, or unique curricula leading to eligibility for a standard teaching credential."

    d. Five studies examining the Teach For America[14] program
    e. Five studies comparing multiple alternative and traditional programs
3) Six case studies of teacher education programs.

Findings and Conclusions. The author reviews were sufficiently specific to provide a basis for comparisons yet refreshingly brief in their summary of each section or subgroup. In each instance the reported findings were more inclusive than reported here.

1) The research favored the longer programs (5-year). More graduates entered teaching, remained in teaching, and were committed to a career in teaching. Principal ratings of the teachers "did not show many differences in either the competence of the teachers or their assumption of leadership roles" (656). Teachers had self-reported their leadership roles in school activities.

2a) The studies provided some evidence that alternatively certified teachers may be "more willing than traditionally certified teachers to teach in low-SES urban schools, but these data may reflect more where teachers can get jobs than actual teacher preferences" (663). Also, "there were no differences between alternatively and traditionally certified teachers in terms of teacher efficacy or in teaching competence as measured by classroom observations" (663).

2b) The research showed "very little difference between alternatively and traditionally certified teachers" (670).

2c) "The studies of the alternative certification programs in Houston, Dallas, and Milwaukee school districts indicate inconclusive results" (674). Anticipated retention was higher in Milwaukee in alternative programs. In Houston there were no significant differences between traditionally certified and alternatively certified teachers' "perception of the problems they faced in the classroom," at the end of the first academic year (674).

2d) Comparisons of Teach For America with other programs "clearly do not settle the issue of the efficacy of the TFA program in comparison with that of other programs" (684).

2e) The studies that "compared the impact of multiple teacher education programs on various dimensions of teacher quality have suggested that alternatively certified teachers may in some circumstances have higher expectations for the learning of students of color living in poverty than teachers who have been traditionally certified" (689).

3) These studies offered "examples of ways that the complexities of preservice teacher education programs can be examined," using systematic quantitative analyses of the effects of different types of teacher preparation (697). Building on the methodological work of others is a practice the authors said "should become more common" (698). It is program substance—not structure—that is key in influencing prospective teachers (701).

Limitations of the Study. As noted by the authors, "many factors greatly limit the usefulness of the findings" from the studies. Because there are so many variations: program requirements, institutional requirements, subject matter of the programs, and the contexts in which the program graduates teach, that the usefulness of the conclusions is very limited. Additionally, the policies that each state has in place also vary greatly, making comparisons difficult and outcomes specific to the discreet study, rather than more generally applicable.

Definitions are very important before assessing outcomes. By accepting that a pre-requisite to enrolling in an alternate route is having a bachelor's degree, then some extended (fifth-year and/or master's programs) which do not include that requirement must be assessed accordingly.

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[14] The authors define Teach For America as "a mostly privately financed national program to attract noneducation majors into the classroom in schools located in areas of poverty."

Classroom observations are subject to the bias of the reviewer in the context of the observations, a problem which may be lessened by observers not knowing in which program the teacher was enrolled.

Because it does not necessarily lead to a license to teach, Teach For America is not an alternate route to teacher certification. It is a recruitment and pre-service training program whose participants are required to make a two-year commitment to teaching by enrolling in an alternate route program, which may (or may not) lead to a license to teach upon completion of the two-year commitment.

A caveat when considering any research study is that the selective use of evidence from a singular study may be a distortion of what the research as a whole shows. Even when several studies are available, variations may make comparability and conclusions suspect.

2005. ***Insights into Alternative Certification: Initial Findings from a National Study*****.** According to the authors Daniel C. Humphrey and Marjorie E. Wechsler of SRI International, their goal was "to understand the impact of alternative certification programs on participants in order to delineate the characteristics of effective alternative certification programs as well as document their effects"(11).

In yet another example of the importance of knowing the definition(s) of the topic, Humphrey and Wechsler use their unique definition of alternative certification and in turn also use alternative route interchangeably throughout their report. They defined alternative certification as "programs or licensing routes that allow persons to enter the teaching profession by earning a standard license or teacher certificate without completing a traditional four- or five-year university-based program" (10). As a result, the authors considered Teach For America an alternate route, although it is widely recognized as a recruitment and leadership program.

Methodology. The authors used a purposive sampling strategy and conducted case studies of seven alternative certification programs. As part of the process, they interviewed key personnel and participants, observed a sample of participants teaching, and surveyed program participants twice—once at the beginning of their participation in the program and again at the end of their first year of teaching.

The programs from which the authors collected data were: the New Jersey Provisional Teacher Program; the Texas Region XIII Education Service Center's Educator Certification Program; Milwaukee's Metropolitan Multicultural Teacher Education Program; the New York City Teaching Fellows; North Carolina's NC TEACH; Teach For America; and the Teacher Education Institute in Elk Grove (California) Unified School District. The authors reported that they "chose programs that varied along the two dimensions theorized as important to program outcomes: intensity of support provided and participant characteristics"(11).

The key personnel from whom the authors collected data were: 10-13 participants in each case study, the program director, teaching faculty, support providers, certification advisors, classroom supervisors, and other relevant personnel. Humphrey and Wechsler collected their data in 2003 and the spring of 2004.

Findings and Conclusions. From the programs and participants studied, Humphrey and Wechsler found that "Alternative certification program participants are a diverse group of individuals who defy generalization," and ...there is "a great deal of variation between and within alternative certification programs" (4). In their initial report, the authors found that "teacher development in alternative certification to be a function of the interaction between the program as implemented, the school context in which participants are placed, and the participants' backgrounds and previous teaching experiences" (4).

According to the authors, the common description of alternative certification as a "fast track" into the classroom is misleading and unsupported by data. Even though alternative certification programs often place participants into classrooms more quickly than traditional teacher preparation programs, the participants do not earn full certification any faster than participants in traditional programs. Participants trained in rich, supportive environments have more opportunity to develop into strong professionals, while those in dysfunctional environments have few opportunities to learn on-the-job and are prone to develop negative attitudes about teaching.

The authors identified several demographic and background characteristics of alternative certification participants: They are a diverse group of both young and older individuals, are more likely to be men than women, and tend to reflect the racial composition of local labor markets. Some are highly educated individuals while others have significant experience working in schools and in their communities. Participants are likely to have recently been full-time students or employed in some education-related field, with only a small fraction of participants being mid-career switchers from the fields of mathematics and science.

Humphrey and Wechsler concluded by questioning the usefulness of comparing different alternative certification programs. Instead, they suggested that "a better unit analysis would be a subgroup of individuals with similar backgrounds, school placements, and learning opportunities" (5).

Limitations of the Study. By their own admission, Humphrey and Wechsler noted that "the number of program participants was variable, with some participants dropping out, and others joining midyear" (52). This resulted in multiple weights and weight ranges, the calculations for which were not explained thoroughly. In four of the programs, the authors indicate that they administered the surveys during courses at the institutions of higher education. They provided no details of the administration to this self-selected group.

Data provided in the report are inconsistent. For example, in one table, the authors report that the number of participants range from 2,800 in the New Jersey Provisional Program to 20 in Milwaukee's Metropolitan Multicultural Teacher Education Program. In yet another table, the authors show that along with the other program participants, they surveyed 279 in New Jersey and all but one (19) in the Milwaukee program, leaving the reader to question the results.

Despite their notation that "averages mask the range of participants within programs" (20), the authors created a "national average" or average of the seven programs in each figure in their report, adding to the confusion of why they averaged such diversified programs and participants, and the usefulness of such calculations.

The time between gathering the data and releasing the findings can be problematic, as it was for the SRI team who had gathered their data over three years before issuing their report. Because some of the state laws and programs had been changed in the meantime, parts of the study results had questionable value, regardless of the outcomes.

2005. ***The Evaluation of Teacher Preparation Models.*** In September 2005 at a forum hosted by Learning Point Associates, Paul Decker, vice president of Human Services Research at Mathematica Policy Research, Inc. reported on the progress of a four-year study (2003-2007).

Decker reported that there is little research as to the effectiveness of different teacher training strategies within the variations of teacher preparation through alternative certification and traditional certification programs. Because some alternative certification programs require substantially less education coursework than traditional certification programs, the variations can be examined to learn whether the form of teacher training is associated with differences in teacher performance.

The study will evaluate the existing variation in teacher preparation in order to address questions in three specific areas: (1) professional preparation and support, (2) classroom practices, and (3) student performance.

Methodology. Based on a model with prominent dimensions of variation, Decker reported that the study will focus only on programs that have relatively low entrance requirements for two reasons:

> First, most traditional certification programs do not have highly selective entrance requirements (Hess, 2001). Hence, focusing on alternative certification programs with less selective entrance requirements will help us disentangle the effects of the teacher training from the effects of preexisting individual characteristics. Second, programs with lower selectivity are more policy relevant since they produce most of the alternatively certified teachers working today. Finally, including the programs with high courseload requirements and programs with low courseload requirements —will help the assessment of whether increasing the intensity of programs' courseload requirements improves teacher effectiveness (15).

To construct the sample of programs to be included, Mathematica identified 10 alternative certification programs with less selective entrance requirements—five that also have minimal course requirements and five that have substantial course requirements. These 10 programs were selected purposively from a universe of 165 programs in 12 states—Arkansas, California, Colorado, Georgia, Illinois, Louisiana, Michigan, New Jersey, New Mexico, Tennessee, Texas, and Wisconsin—with low entrance-selectivity requirements. Purposive selection also restricted the sample to programs that met certain additional program selection criteria. This process generated a sample of 10 purposively and randomly selected but geographically dispersed programs that are included in the study.

From the 10 programs, Mathematica identified, randomly selected and ordered districts that had hired at least 12 teachers from a program within the past two years, to ensure a good chance of obtaining the target sample of treatment- and comparison-group teachers. From each district, Mathematica identified and randomly selected schools that fit the criteria for inclusion in the study. To be eligible, a school must have had at least one alternatively certified teacher and one traditionally certified teacher with limited teaching experience (four or fewer years), teaching in the same grade. The sample target is 90 pairs of alternatively certified and traditionally certified teachers, both with four or fewer years of teaching experience. The final sample will include 180 teachers, evenly split between traditionally certified and alternatively certified teachers. To meet these sample targets, Mathematica constructed the sample for two study years: the 2004–05 and 2005–06 school years.

To be included in the study, schools must allow random assignment of all students in those grades to classrooms with each alternative certification and traditional certification teachers included in the study. On average, 23 students will be in each type of classroom. Thus, there will be a sample of 90 alternatively certified teachers, 90 traditionally certified teachers, and approximately 4,140 students (16).

Data collection will occur during the 2004-05 and 2005-06 school years. Data will include: pre and post standardized tests for students, student demographic characteristics, ATC or SAT scores of each sampled teacher, context interviews with program and school staff and four classroom observations of each sampled teacher. Measuring classroom practice will provide data on an important link between teacher preparation and student achievement. A key hypothesis of the study is that differences in teacher preparation will lead to differences in classroom practice that ultimately will affect student achievement.

Findings and Conclusions. The study is in progress.

Limitations of the Study. The study is in progress.

2005. ***Life in the Fast Track: How States Seek to Balance Incentives and Quality in Alternative Teacher Certification Programs.*** Recognizing the contributions of previous research, the authors Susan Moore Johnson, Sarah E. Birkeland, and Heather G. Peske elected to focus their research on the responsibilities assumed by states and delegated by states in the administration of their alternate route programs.

Methodology: The authors identified three states that represent three different degrees of control: Connecticut exercises the most centralized approach; Massachusetts uses a selectively decentralized approach; and Louisiana takes a decentralized approach. To consider a range of programs within the three states, the authors selected 11 sites. In Connecticut, Johnson et al. included the original site of the state's alternate route and the two expansion sites begun in 2002. In Massachusetts, the authors included five sites from the Massachusetts Institute for New Teachers (MINT), two of which are administered by a university, and three of which are administered by a non-profit organization. In Louisiana, Johnson et al. selected three sites: a university runs one, a local school district runs one, and a school district/nonprofit organization partnership runs the other site (68).

The authors ensured participant respondents confidentiality and anonymity. Respondents included program directors, selected faculty members, and four to eight participants at each site. Where possible, the authors "sought variation in respondents' certification area, gender, race or ethnicity, and career experience at entry (first career or midcareer)" (68). In summers 2002 and 2003, the authors conducted 85 semistructured in-person interviews and follow-up interviews with teacher respondents. From each summarized narrative, the authors identified patterns of responses and themes across respondents, sites, and states.

Johnson et al. also analyzed relevant documents for each program: state legislation that authorized the programs, regulations for the program design, program descriptions and state standards, course syllabi, clinical experiences, and program evaluation documents.

In efforts to promote the validity of the findings, the authors triangulated findings of directors, faculty, and participants and tested the validity of the findings with several interpretive communities that had assisted with coding and analysis.

Findings and Conclusions. In general, the authors found that participants:

- Appreciated the incentives—rapid training, reduced costs of becoming certified and immediate access to a job—of the fast-track programs,
- Expected to have sufficient coursework in how to teach their subject matter,
- Wanted better student-teaching placement and experiences.

The authors found that there were "tensions and trade-offs of centralized and decentralized program management" (73). For example, states were less able to provide jobs than were the decentralized and locally operated programs. A centralized approach; however, allowed the state to capitalize on economies of scale. With 295 candidates in the three programs that the authors studied in Connecticut, the state more closely regulated the quality of the recruitment efforts and the quality and coordinated delivery of the curricula. In contrast, local programs were likely to attract a limited pool of applicants with a limited range of experience and ability, but who were likely to remain teaching in locations close to where they lived. One site in Louisiana offered two separate methods courses: one for special education candidates and another for the five mathematics candidates and one science candidate (80).

Johnson et al found that the alternate route programs "were not innovative in structure, for they were patterned on traditional teacher education" and were alternative only in that each segment was abbreviated (77). Nevertheless, participant respondents "reported great satisfaction with the programs" (77). Although each of the states required some form of field-based experience, the programs had varying levels of success, with those in decentralized contexts having easier placement success than state-level programs. The authors reported that "mismatches were more often the rule than the exception" (81).

As a final measure of monitoring the quality of the teachers prepared through these 11 alternative certification programs, all three states required assessments of participants' knowledge and skills—all of which were "relatively undemanding," according to the authors (83). They reported that "Candidates who were admitted to the program and completed the requirements—attended classes regularly, met minimal expectations in student teaching, and submitted required portfolios—could expect to receive provisional teaching licenses" (85).

Johnson et al. conclude that to make the best use of people and resources, policy makers would do well to consider "a selectively decentralized model of fast-track program delivery—one in which the states increase programmatic capacity by providing resources, while local agencies control selection and job placement" (87).

Limitations of the Study: The authors noted that in some cases, they were not able to contact respondents for follow-up interviews. Although the authors indicate that they used an iterative data process and procedures to cross check and analyze data from different perspectives, they did not illuminate the reader as to any (if any) questionable discrepancies.

2006. ***An Evaluation of American Board Teacher Certification: Progress and Plans.*** On behalf of Mathematica Policy Research, Inc., Steven Glazerman and Christina Tuttle are the authors of this report. The study of the American Board for Certification of Teacher Excellence (ABCTE) began in 2005 and is to be five-year evaluation of the certification programs—the Passport certification and the Master Teacher certificate. Each is a portable teacher credential—portable to the extent that the state recognizes the credential and permits the individual to teach. In May 2006, at the time the report was released, the authors reported that five states recognized ABCTE's Passport to Teaching: Florida, Idaho, New Hampshire, Pennsylvania, and Utah.

The Passport to Teaching or Passport identifies qualified beginning teachers and when it becomes available, the Master Teacher certification is intended to recognize accomplished teachers.

After an initial grant of $5 million in 2001, in 2003, Congress awarded a five-year $35 million grant to the American Board for Certification of Teacher Excellence (ABCTE). ABCTE's challenge was to reduce the barriers to teaching by developing a streamlined process to certification. After its research and development of a set of examinations, ABCTE has reported that the Passport is a "cost-effective route to earning a teaching credential based on subject-area mastery and professional teaching knowledge as demonstrated by meeting rigorous testing standards" (Web site, 1).

In part because candidates must produce a college transcript indicating receipt of a baccalaureate degree prior to completing the remaining requirements, ABCTE considers the

Passport to Teaching an alternate route to teacher certification. Program completion includes passing two rigorous examinations. A minimum passing score (270 out of 500) is required on the three-hour professional teacher knowledge test (multiple choice and essay). A minimum passing score (252 out of 500 for biology, but varies by subject) is required on the four-hour subject area knowledge test (5).

Similar to other alternate routes, the ABCTE Passport process is quicker and more cost-effective than the traditional college-based route to teacher certification. States, however, must approve the Passport to Teaching before it can be used or is valid in the state.

Methodology. Glazerman and Tuttle acknowledged the "chicken-and-egg" problem: the [ABCTE] program needs early evidence for the program to be widely accepted, yet the program needs acceptance in order to generate a study population large enough for a rigorous evaluation" (19). Because ABCTE endeavors to encourage career-changers to become teachers, the findings may reflect that emphasis.

The authors highlighted the first set of research questions for the preliminary evaluation which were:

- Who chooses to apply for ABCTE certification?
- Who makes it through the pipeline to become certified?
- Where do these certificate holders end up teaching?
- How do principals view ABCTE teachers (3)?

For answers, the authors collected data from ABCTE program staff, from discussions with some ABCTE teachers. To understand the teaching assignments of the Passport holders and the characteristics of the schools in which they were teaching, the authors used data from the Common Core of Data from 2003-2004. A survey of the principals of the schools where the ABCTE teachers were teaching was administered in the spring of 2006, the results of which will be included in subsequent reports.

Findings and Conclusions.

Of the 1,076 individuals who paid ABCTE the enrollment fee during 2004 until November 2005, 109 individuals (the first cohort) met the requirements of the program. Of the 109 successful candidates, 56 are K-12 teachers, 48 are non K-12 teachers, and the status of the remaining 5 is unknown. The authors also found that "some of the K-12 teachers were already employed as teachers or administrators before seeking American Board certification" (7).

Of the 48 individuals in the non K-12 teacher category, three were teaching overseas, four were teaching in postsecondary institutions, six were substitute teaching, 11 could not find a job and/or could not find a job that accepted ABCTE certification, 11 were working in an education-related field, and the other 13 had other or unreported reasons for not teaching.

Of the 56 individuals who were Passport certified, the average age was 38; 46 percent were male. Over 80 percent of these teachers reside in Idaho, Florida, or Pennsylvania, a reflection of the states that have granted ABCTE recognition. Of the schools for which data were available, 22.2 percent were in an urban district,[15] 28.9 percent suburban, and 48.9 percent rural (11). The schools served predominately white students as did other schools in the areas where ABCTE teachers were employed (10).

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[15] The 2003-04 Common Core Data cites district codes as follows: "urban" districts include large city or mid-size city; "suburban" districts include urban fringe of a large or mid-size city; and "rural" districts include large town, small town or rural. The U.S. Department of Education, National Center for Education Statistics publishes the Common Core Data.

The authors found that “almost 30 percent of Passport holders are not teaching in their certified subject areas,” and “in almost 15 percent of the schools, Passport holders are teaching in a subject area that is not certified by ABCTE (examples include drama, special education, and foreign language)” (9).

The distribution of those seeking certification depends in large part on the availability of the subject matter examinations. To date, the sequence of examination availability has been: elementary education, English/language arts, mathematics, biology, general science, and most recently, special education.

The authors report that they have data on more than 600 enrollees (the second cohort) as of October 2005. Of those, 42 percent were pursuing certification in elementary education and the remaining 58 percent the other subject-matter courses, 25 percent of whom were candidates for certification in mathematics (5).

The geographic pattern of the second cohort showed a more even balance than the first cohort:

Candidates from Idaho	24.1 percent
Candidates from Pennsylvania	13.7 percent
Candidates from Florida	19.4 percent
Candidates from other states	19.5 percent
Other countries	23.3 percent

Glazerman and Tuttle note that the number of candidates from overseas “points to a large source of demand for alternative certification” (7).

From admittedly small samples, the authors suggest that

- because some already-employed teachers and administrators acquired ABCTE certification, recipients may be viewing it as an additional credential rather than authorization to teach (7).
- although the candidate must pass the ABCTE assessments to become certified, final scores do not appear to predict whether a candidate will be teaching. Of all the placement subcategories of Passport holders, those who are not currently teaching and specified that the American Board certification was not accepted for their desired position had the highest score. Teachers in private schools scored slightly higher than those in public schools (8).

In subsequent analyses of additional data on larger cohorts, the authors will investigate and evaluate if American Board certified beginning teachers are effective in the classroom (13) and other related issues.

Limitations of the Study. The authors acknowledge that the small sample size affected the preliminary findings; however, they reported that the research strategy is to incrementally build up an evidence base, by increasing the sample size and level of methodological rigor over time, including the predictive validity of ABCTE examinations (19). In the meantime, Glazerman and Tuttle suggest that “early findings may motivate ABCTE to adjust both the certification process and the program’s recruiting and outreach strategies” (20).

REGIONAL STUDIES

1990. ***Alternative Certification: State Policies in the SREB States.*** Occasionally, researchers have conducted analyses of alternate routes throughout a region, for which summaries are included here. For example, Lynn M. Cornett reviewed the results of state policy changes after the recommendations of the Southern Regional Education Board’s (SREB) Task

Force on Higher Education and the Schools in 1981. Among other recommendations, the SREB Task Force suggested that “states should modify certification requirements to permit graduates in mathematics and science who lack professional education preparation to teach at the secondary levels, with safeguards to insure the quality of instruction.”

Although all 15 SREB states reported alternative certification programs in place in 1990, not all existing programs met the author’s definition of alternative certification programs: “state programs that alter licensure requirements through (a) completing a different set of standards (i.e., limiting the number of education courses required); and (b) meeting licensure requirements by demonstrating competency (i.e., passing tests for certification, on the job evaluations, and/or completing a supervised internship).”

Findings:

- SREB states that did not alter licensure requirements for alternative certification programs: Alabama, Louisiana, and Oklahoma;
- SREB states that did alter licensure requirements for alternative certification programs: Arkansas, Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia;
    - The 12 states (above) require tests and on-the-job performance assessment of all beginning teachers;
    - Entrance requirements are equal to or higher than those entering regular teacher education programs;
    - Additional supervision (mentors) is often required;
    - All are joint efforts of higher education institutions and schools.
- The alternative certification programs are attracting individuals who would not otherwise enter teaching;
    - Older persons: “In 1989, twice as many persons were prepared through alternative certification programs in SREB states as were prepared just two years before;”
    - Minorities: “A larger portion of persons trained through alternative certification programs were minorities as compared to the traditional teacher education programs.”
    - Gender: “A larger proportion of the candidates being prepared were male as compared to the traditional programs.
    - Pass Rates: “In Texas, alternative certification interns have higher pass rates on certification tests than do traditional education graduates. Minorities have markedly higher pass rates than minorities who are initially certified through regular channels” (page 78).

Conclusion: SREB states must begin to track teachers and their performance in the classroom to get conclusive answers on the effectiveness of different teacher preparation models.

2002. North Central Regional Educational Laboratory (2002), Ray Legler, who authored the study for the North Central Regional Educational Laboratory (NCREL) used a literature review to raise issues and questions about alternative certification, analyzed Schools and Staffing Survey (SASS) data on programs in the NCREL region (Iowa, Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin), and surveyed 3,400 principals in the region (received 1,110 responses).

NCREL’s review of literature showed mixed results—some positive changes using alternative certification in the NCREL region; some less than positive, including no specific definition limiting research using comparison groups. Wide varieties of program components and numbers and types of participants make comparison of programs and effects difficult.

The analysis of SASS data (estimations and weighted data) must be viewed with caution as the numbers are statistical estimates only. Even so, NCREL's report showed that "alternative certification has had an impact" on staffing. For example, in general, first-year alternatively certified teachers *feel* as prepared to teach as other first-year teachers; both groups participated in induction programs, and levels of preparation were similar.

NCREL sent surveys to a random sample of 2,600 principals across the seven-state NCREL region. The survey requested information from the school districts about the number of alternatively certified teachers hired, their backgrounds, and their performance. There were problems with the sample (not representative, second round surveys, and school level); however, 1,110 (32.6%) responded and of these 140 (12.6) reported they had hired alternatively certified teachers in the last five years.

Findings:

- Numbers of male teachers increased;
- Alt cert teachers are older and bring life experiences into teaching;
- Alt cert has had little impact on racial/ethnic diversity of teaching force;
- Some support that alt cert brought in people from the business community into teaching;
- Alt cert programs have "yet to reach full parity with traditional teacher-preparation programs."
- Although levels of support and sufficiency of support varied, 90 percent received support or mentoring during their transition to classrooms;
- Alt cert teachers stayed as long as or longer than other newly hired teachers.

Conclusion: Despite the findings, in 2002 NCREL estimated that of all the teachers hired in the seven states in the NCREL region, only about 3.1 percent of all teachers in those states had been prepared though an alternatively certified program.

2005. ***Nontraditional Alternative Teacher Certification Programs: Their Purpose Design and Participants.*** Phyllis Adcock and Marc Mahlios surveyed 101 "teacher preparation programs" in the Midwest (states not identified) to learn:

- How nontraditional alternative teacher certification has become an auxiliary path for those who want to pursue a career in teaching;
- Ways in which states are implementing these programs; and
- Information about the participants who enter nontraditional alternative teacher certification programs.

Of the 44 percent of teacher preparation program directors who responded, 26 (59%) had traditional teacher programs and 18 (41%) had nontraditional alternative programs. Of the 6,617 total graduates in the school year cited (no date given), 6,233 or 94.2 percent were graduates of traditional programs, and 384 or 5.8 percent were graduates from nontraditional alternative certification programs.

Findings:

- From survey questionnaires, program directors indicated differences between the two programs in the internship requirements which were four times more likely for traditional than ATC programs to include student teaching components and the human development courses required of the teacher candidates.

- Survey questionnaires of teacher candidates revealed equal number of males and females in each of the 18 nontraditional programs (female traditional grads outnumbered males two to one). ATC students are older, but there were few ethnic differences.

The authors concluded that the focus should be on intensive preparation, regardless of the program.

STATE STUDIES

A rather recent phenomena has been the state-produced study of the alternate route or routes to teacher certification. Six of the most prominent state analysis of data collected and analyzed by a state agency are discussed in Chapter 4. The following are brief summaries of state-wide research studies, most of which were completed by entities other than the state.

1990. Connecticut: *Alternate Certification in Connecticut: Reshaping the Profession.* As Executive Director of the Institute for Effective Teaching, Traci Bliss provided keen insights into the assessment measures used to evaluate the state's alternate route. The legislature placed the Connecticut Alternate Route to Certification under the auspices of the Department of Higher Education in Hartford, Connecticut which closely monitored the program after it began in 1986. Previous chapters include some additional findings of the participant and program evaluation.

In 1990 Bliss wrote:

> With a three-year record of accomplishment, alternate certification in Connecticut has enjoyed enormous popularity with program participants as well as school personnel who work with alternate route teachers. The continued high employment rate in a fiercely competitive market is a key indicator of the program's contribution to the profession.
>
> The danger with the type of positive data reported throughout this article, however, is that it can be used out of context. That Connecticut Alternate Route teachers are performing at least as well as teachers from standard programs should not be used as a general endorsement of the alternate route concept in states which take a different approach (52).

Bliss reiterated the components of Connecticut's rigorous program and intensive training, including two years of mentoring—from a state-trained mentor and a district-appointed supervisor (52).

2000. New Jersey: *Growing Better Teachers in the Garden State*. Leo Klagholz reviewed the history of the New Jersey Provisional Teacher Program, the state's "alternate route" to teacher certification. From 1985 through 1999, this New Jersey program trained and hired nearly 7,000 new teachers. Since the implementation, New Jersey has not issued any emergency certifications in any of the affected teaching fields, or reassigned any teachers outside their subject fields. More important, the program has achieved its primary purpose of enhancing the overall quality of the state's teacher candidate pool. Chapter 3 includes a lengthy description of this history and Chapter 4 includes a detailed description of the New Jersey program.

In 2005, Judy Cifone, Manager, Teacher and Administration training Unit, and Betty Sue Zellner and Vickie Sikorski of the New Jersey Provisional Teacher Program updated the New Jersey program through presentations at two conferences. In 2002, the Provisional Teacher Program was expanded to include subject-specific training for students with disabilities, bilingual/bicultural education, English as a second language, and a pre-school through third grade certificate. In 2003, through a former commissioner initiative, the Provisional Teacher

Program was expanded to create the availability of a master's degree credit for alternate route candidates going through college based programs.

In addition, New Jersey has incorporated its professional standards for teachers into the Provisional Teacher Program requirements. All of these changes have contributed to the growth of New Jersey's Provisional Teacher Program. New Jersey is conducting an evaluation of its route, the results of which are expected to be available in July 2007.

2003. Colorado. ***Alternative Teacher Preparation in Colorado: Moving from Experimental to Established.*** Mary Basset, et al. from the Alliance for Quality Teaching conducted the study to learn more about the role alternative teacher preparation played in providing quality teachers in Colorado.

In 2003, Colorado school districts hired between 6,500 and 7,000 teachers; about 40 to 50 percent of them were actually new to teaching. During that same year, "Colorado's alternative routes produced approximately 650 fully licensed teachers working in public schools and about 100 working in private schools" (1). The authors calculated that the number of teachers prepared through alternate routes is approximately the same number of those hired who were new to teaching and trained within Colorado. The authors concluded that "alternate teacher preparation programs have, in fact, become an important part of the teacher preparation system in Colorado" (1).

Through survey data which the authors collected from the two alternate route programs, the authors found that teacher quality and classroom preparation were mixed. Bassett et al. write that "there are few policy mechanisms to ensure a minimum of skills before alternative route teacher begin teaching and that they meet the Colorado performance-based teaching standards upon program completion" (2).

In general, the authors found that alternate routes prepared more males to teach and "higher-educated candidates into the teacher workforce" (2); however, that retention rate of those trained through alternate routes was lower than for traditionally trained teachers.

2005. Florida: ***Alternative Teacher Certification in Florida: Third Annual Progress Report.*** During the first year of mandatory alternative certification in Florida (2002-2003), the Florida Department of Education (FLDOE) collected both quantitative and qualitative data to guide enhanced program effectiveness. By 2005, Florida State University, in collaboration with the FLDOE had completed four evaluation reports: *The Second Annual Progress Report*; *An Initial Cost Analysis of the State of Florida's Role in Alternative Teacher Certification*; *An Initial Cost Analysis of the Florida School Districts' Role in Alternative Teacher Certification*; and *How District Assessment Systems Measure Up to Criteria for Legally Defensible Assessment Systems*.

The *Third Annual Progress Report* by Pam Flood and Sande Milton covers program and research findings only on state-approved district alternative certification programs. Florida also permits two other alternative options: the American Board for Certification of Teacher Excellence (ABCTE) Passport to Teaching program and Educator Preparation Institutes.

From both qualitative and quantitative web-based survey data, the researchers described the alternative certification programs and how they differ from district to district. In Florida, all district-level alternative certification programs are either developed or approved by the Florida Department of Education and implemented by Florida school districts. The programs are competency-based and provide on-the-job education preparation to newly hired teachers who have subject area expertise, but who did not graduate from a traditional teacher preparation program.

According to the report, the researchers used several position-specific web-based surveys to gather respondent data during the 2004-2005 school year. Of the 2,628 alternative certification teachers in the program, 1,209 (46 percent) responded; 388 mentors responded; 42 district alternative certification coordinators responded, and 117 building administrators responded.

Extensive charts and tables accompanied the survey findings, some of which were:

- Over 50 percent of teachers reported that knowing about the alternative route to certification positively influenced their decision to enter the field of teaching.
- Half of the teachers in the alternative certification programs were older than 36, and nearly 60 percent were between 27 and 45.
- Florida alternative certification programs are not attracting more minorities or males.
- Over 50 percent of teachers in the alternative certification programs had majored in business, the physical sciences, or the social sciences.
- Over 70 percent of teachers in the alternative certification programs were teaching in middle and high schools.
- Over 30 percent of teachers in the alternative certification programs reported that their mentors influenced their decision to stay in teaching.
- Most teachers in the alternative certification programs rated their training as positive or very positive (75 percent), and 90 percent reported that they would choose an alternative certification program again.
- Over 75 percent of mentor respondents reported that they were teaching while mentoring.
- Over 95 percent of the responding principals reported that alternative certification program teachers met their criteria for rehiring.

2005. Massachusetts: ***In MINT Condition? The Politics of Alternative Certification and Pay Incentives for Teachers in Massachusetts.*** Kathryn A. McDermott provided an engaging legislative history of the development of the state's alternative certification program. Included in the 1985 Act Improving the Public Schools of the Commonwealth were two provisions that were largely ignored by institutions of higher education with teacher preparation programs. First was a requirement that candidates for certification pass tests of subject matter and pedagogical knowledge, after which the Massachusetts Department of Education automatically granted certification. Second, the law permitted local school authorities to hire uncertified apprentice teachers for no more than two years before meeting certification requirements—establishing an alternate route to certification.

The next year, when a report commissioned by the Massachusetts state Board of Regents called attention to "an impending crisis in teacher quality and criticized the status quo in teacher preparation," the Board of Regents and the Massachusetts Board of Education reacted by convening a task force (49). After studying the structure of higher education based teacher preparation programs, particularly their heavy emphasis on pedagogy, the Joint Task Force on Teacher Preparation (JTTP) recommended that colleges "develop special programs for non-traditional candidates for provisional certification" (49). Candidates with a baccalaureate degree in liberal arts, not an education major, would qualify for the provisional certification, rather than permanent certification awarded to those with a master's degree and advanced knowledge and competencies.

That two-stage plan, along with a requirement that teacher candidates (including those in the alternative route to certification) successfully pass certification tests became the Massachusetts Education Reform Act (MERA) passed by the legislature in 1993.

Again, implementation was largely ignored. Teacher education faculty opposed alternative programs. The Massachusetts Teachers' Association, the affiliate union of the National Education Association (NEA) that represented public higher education faculty had obvious interests "in keeping responsibility for teacher preparation within its purview rather than seeing it shift toward school districts" (51). And many K-12 teachers opposed alternative certification "as a matter of principle because it seemed to undercut their claims to professional expertise" (51).

In 1996 Governor William Weld appointed John Silber as chairman of the Massachusetts Board of Education. Silber, president of Boston University was a well-known critic of teacher preparation and public education. As board chairman, Silber "pushed hard for implementation of the teacher certification test" that institutions of higher education had ignored since 1985 (51).

In 1998 when "59 percent of the teacher candidate test takers had failed either the Composition and Literacy test (required for all certification candidates)," and/or the subject-matter competency test, there was more than enough blame to go around—especially in a gubernatorial election year (52). As the legislature was completing its work on the fiscal year 1999 state budget, the president of Massachusetts senate suggested a dramatic use of some of the state's budget surplus. To attract highly talented people from other fields into teaching, the senator suggested that Massachusetts provide a $20,000 signing bonus. The new commissioner of education connected alternative certification to the bonus plan to develop the Massachusetts Institute for New Teachers (MINT) in 1999.

MINT began with 59 participants as a collaborative effort between two University of Massachusetts campuses and the Massachusetts Department of Education (54). By 2001 and 2002, "MINT prepared more teachers than almost any of the teacher preparation programs in the state's 12 public colleges and universities that had students taking the certification tests" (55). Perhaps partly as a result of an evaluation that found "that bonus recipients rated the accelerated certification program as a more important recruiting tool than the pay incentive" legislators ended the signing bonus in 2003, in part too, because of budget concerns (56).

In 2002, MINT was no longer a state-based alternate route. The Department of Education shifted to a district-based model in response to several concerns: insufficient buy-in to the program by cooperating teachers, insufficient support of many new MINT-trained teachers, and too few MINT trainees teaching in high-need subject areas. To help maintain this now district-based alternate route as a major source of new teachers, the U.S. Department of Education awarded MINT a Transition to Teaching grant in 2004.

2006. California: *Beyond Demographics: Who Enters and Completes Alternative Teacher Credential Programs in California.* California's 84 alternative certification programs annually produce 30 percent of all newly credentialed teachers. All teacher preparation programs in California, traditional or alternative, are post-baccalaureate. The alternative certification (District Intern) programs are intended to alleviate shortages in the teacher labor force, require candidates to be fully employed as teachers of record while concurrently participating in a teacher preparation program, and mandate that candidates are provided with a mentor during the entire internship. In 1996, the state adopted and legislated funding ($2,500 per intern for the two to three years that an intern is enrolled in a program) for alternative teacher certification programs.

Elaine Chin and John W. Young surveyed California's intern candidates (8,881 enrolled in 2004); of 6,367 who visited web site, 4,239 (67%) completed the majority of survey questions on the interns' backgrounds. A subset of 1,862 (not demographically different from all interns) completed all questions. Thirty-eight alternative route to certification programs participated in the study.

The alternative certification program may be district based, administered as a partnership between a university and a district or several districts, or be through the one distance learning intern program offered through the California State University systems – CalState Teach.

A goal of the study, through surveys at the beginning of the program and near the end of the program (during the 2002-2004 academic years), was to develop a model that could predict program completion and the acquisition of a teaching credential by the interns. The predictive model found ten variables that had the greatest effect on when and if an intern acquired a full teaching credential.

The authors found that the variable that had the strongest effect was school placement. Interns were more likely to finish if they were in a hard to staff school. Chin and Young speculate that the "higher completion rates may be a function of the experiences interns bring to their preparation program and the resilience that they may have developed from previous work in schools" (21).

From their survey data analysis, Chin and Young found that "it is probably true that the intern population attracts men, second career seekers and people interested in becoming special education teachers at higher rates than are typically found in traditional programs" (19).

Chapter 4 includes a statistical description of the alternative route to teacher certification program in California.

2006. South Carolina: ***A Study of the Differences between Alternatively and Traditionally Certified Teachers in South Carolina.*** Falicia Harvey conducted a study of the 20-year state-run Program of Alternative Certification for Educators (PACE) to make comparisons with traditional teacher preparation routes in South Carolina. Three research questions guided her research:

- What differences exist in pedagogical knowledge?
- What differences exist in teaching performance?
- What differences exist in teachers' performance by age, gender, race, and highest degree?

The author limited the study to second-year teachers in South Carolina school districts that used the Assisting, Developing, and Evaluation of Professional Teaching (ADEPT) Team-Based Evaluation and Assistance Model (TEAM) developed by the State Department of Education. The model provided a formal evaluation process for typical teaching performance (97).

The South Carolina State Department of Education collected and provided the data from the 47 (of 85) school districts that had used the abovementioned model during the 2003-2004 academic year. From within the 47 school districts, the author formally evaluated a total of 932 teachers, 768 (82.4 percent) were traditionally certified and 164 (17.6 percent) were alternatively certified (97).

To measure pedagogical knowledge, the author reviewed each teacher's score on the Principles of Learning and Teaching (PLT) examination. Out of a possible score of 200, South Carolina set the passing score at 165. The mean score for teachers traditionally certified was 174.51; for teachers alternatively certified, the mean score was 169.33. Although the mean scores did not reveal the variances, 9.71 percent of the traditional participants scored below the passing score while 22.2 percent of alternative route participants did not meet the minimum score (10).

To measure teaching performance, the author used the data from the analyses of the 10 performance dimensions on the basis of the ADEPT school district level evaluators' perceptions. The author reported that "the analysis determined there was not a significant difference between any of the mean scores for the individual performance dimensions" (100). Of the teachers, 95 percent of alternatively certified teachers and nearly 97 percent of traditionally certified teachers met the performance dimension for instructional strategies.

To measure teachers' performance, the author analyzed data for the sum of the 10 performance dimensions with appropriate comparisons for each demographic variable (104). The author concluded there were no significant differences between traditionally certified and alternatively certified teachers. "Alternative certification in South Carolina is attracting more diverse age populations, males, and minorities and this diverse audience is performing the same as their traditionally trained counterparts" (105). Harvey's analysis did reveal a significant difference in the performance between teachers who had a master's degree and teachers who had a master's degree with additional graduate hours or a doctorate degree; both groups scored higher on the summary of their ADEPT performance. The difference was true for both traditionally certified and alternatively certified teachers.

Even with both programs in place in South Carolina, each preparing qualified and effective teachers, Harvey reported that there were 500 teaching vacancies in South Carolina on October 1, 2004, "putting immense pressure to place someone in the classroom" (109). Nevertheless, Harvey calls for continued and additional research, including an investigation of the first-year attrition rate of South Carolina teachers.

ANOTHER SIGNIFICANT STUDY OF ALTERNATE ROUTES

On-going. ***How Changes in Entry Requirements Alter the Teacher Workforce and Affect Student Achievement.*** Donald Boyd, Pamela Grossman, Hamilton Lankford, Susanna Loeb, and James Wyckoff focused their study on pathways into teaching in New York City and the "effects of such programs on the teacher workforce and on student achievement." The authors used data on students and teachers in grades three through eight in New York City. Boyd et al. identified three distinct pathways and divided teachers in the study into six groups "as defined by their pathway into their *first* job in New York City" (6).

The distinct pathways were identified as:

1. traditional university-based programs, both at the graduate and undergraduate level;
2. transcript review, a process of individual evaluation;
3. alternative routes, prior to being issued a Transitional B certificate (good for three years) to teach, a candidate must complete pre-service training and pass two examinations.

From among several alternative routes in New York City, the authors selected two of the largest programs that address shortages in New York City public schools: the Teaching Fellows program and Teach For America (TFA). Teaching Fellows are generally older than participants in the TFA program.

A less distinct pathway, "other" included teachers that did not fit in the above pathways, such as individuals teaching through reciprocity agreements with other states.

Prior to the 2004-2005 school year New York State had allowed the limited use of modified temporary licenses by those school districts that experienced shortages of certified teachers. Except for teachers employed who had completed 27 credit hours of a preparation program and actively moving toward certification, this practice of issuing temporary certificates was set to expire in 2005.

The authors reviewed student demographic and test score data for approximately 65,000 to 80,000 students in grades three through eight in New York City schools. Boyd et al. constructed sets of data to identify value added score increases by the pathways to teaching of the classroom teachers in the study. They write, “For this purpose a student was considered to have value added information in cases where we had a score in a given subject (English Language Arts or math) for the current year and a score for the same subject in the immediately preceding year for the immediately preceding grade” (9). The authors did not include scores of those who had either skipped a grade or were repeating a grade.

To enrich their data on teachers, the authors used a crosswalk file provided by the New York City Department of Education. Variables included teacher experience, teacher demographics, ranking of college selectivity of undergraduates, teacher test score performance, initial pathway into teaching, and whether or not the teacher had completed a college-recommended teacher preparation program (10).

Using various controls and models, including teacher and student characteristics and school work environments, the authors reached several conclusions. By teacher experience models, the authors write:

> Teaching Fellows start out performing worse, but gain more over the first year than do other teachers. By their second year, their students are doing as well as students of College Recommended teachers. Teach For America members also appear to make substantial gains during their first year but this coefficient is never statistically different from a College Recommended teacher. For Elementary English Language Arts (ELA) results, Teaching Fellows and TFA members have more trouble improving their students’ reading achievement initially than do temporary license teachers or College Recommended teachers, and, unlike the situation for math, these teachers do not make differentially large gains in student achievement by their second year. By their third year differences are not statistically significant (18).

Among other findings, the authors also conclude that alternative routes into teaching that reduce both the tuition and the time costs of pre-service preparation attracted many new teachers, most of whom replaced temporarily licensed teachers. Alternative route teachers have stronger measurable qualifications than teachers entering through any other pathway. In recent years, Teaching Fellows have been working in difficult-to-staff subject areas, “such as middle and high school mathematics and science and special education—subjects that attract very few traditionally prepared applicants” (7).

Differences in attrition rates across pathways are statistically significant and meaningful, according to the authors. “For example, 9.6 percent of Teaching Fellows are predicted to leave teaching after the first year, substantially less than the attrition of College Recommended teachers” (22). After two years, however, the attrition rates are comparable, and in years three and four, Teaching Fellows exceed the attrition rates of College Recommended teachers (23).

Based upon the state and federal requirements to have a qualified teacher in every classroom, the authors write that “we believe that different pathways bring different strengths to teaching. These differences in pathways provide a means to discuss potential improvements in how all pathways prepare teachers”(25).

COMPILED BIBLIOGRAPHIES

As studies have became more frequent, one of the challenges has been to compile the results of the published studies into annotated bibliographies, similar to that developed by Adelman, Michie and Bogart in 1986. Of Adelman’s 58 citations, only two dealt with some aspect of alternative certification in the title as discussed previously.

By the time Sarah E. Birkeland and Heather G. Peske compiled their Literature Review of Research on Alternative Certification for the National Education Association, they cited 90 studies, almost all of which were published from the late 1990s through 2004. The works cited dealt with research on attrition of teachers, findings from a single alternate route program to national studies, comparisons of teacher preparation programs to the problems of under qualified teachers in urban schools, and a host of other issues.

Similarly, Linda Brannan and Robert Reichardt of Mid-continent Research for Education and Learning (McRel) developed a Review of Selected Literature about Alternative Teacher Education for the Western Interstate Commission for Higher Education after the new millennium began. A particularly useful addition to this review is a glossary of terms related to alternative teacher education.

Reaching back to the Nancy Adelman study in 1986 and from there to research produced in 2004, Kenneth Zeichner and Hilary Conklin reviewed 38 studies that met their criteria for inclusion in a chapter in *Studying Teacher Education: The Report of the AERA Panel on Research and Teacher Education.* In addition to providing narratives about the studies, the authors also summarized the focus of the study, the context of the research, the research design, and also the findings. The authors arranged the information about each study in a columnar format, making the information user-friendly.

In August 2003, The Education Commission of the States (ECS) produced a report on teaching quality. The report included a review of the research which found that alternative route programs graduate high percentages of effective new teachers with average or higher-than-average rates of teacher retention. ECS reviewed 15 studies that met its criteria for inclusion in the research report as having effective alternative route preparation programs.

As alternative preparation programs expand, some are developed for specific purposes, such as specialized subject matter courses in science and mathematics or other subjects. For example, in 2005, Michael S. Rosenberg and Paul T. Sindelar reviewed research on alternative routes to certification in special education. In “The Proliferation of Alternative Routes to Certification in Special Education: A Critical Review of the Literature,” the authors reiterated the persistent shortages of qualified special educators. Through a careful search of existing studies, Rosenberg and Sindelar included studies that reported “empirical data on program outcomes” (120). The authors reviewed six program evaluation studies and four comparative studies, concluding that additional reliable and valid research is needed “to strengthen our understanding of effective preparation” of special educators (125).

SHARING RESEARCH

National Association for Alternative Certification

In addition to the abovementioned resources, a variety of professional journals and publications include research findings. An early venue that permitted providers of alternate route programs to share developments—and setbacks—through their research was the annual meeting of the National Association for Alternative Certification (NAAC) begun in 1990. First organized in Houston, Texas, as a state association, the group eventually expanded to become the National Association for Alternative Certification. The NAAC national conference provided speakers and panelists a forum for their research and provided networking opportunities. In March 1994, participants discussed topics such as critical elements of successful alternative preparation programs; encouraging diversity in the classroom; providing support for the first year teacher; and preparation and training: the keys to classroom success.

At its March 2006 national conference, the NAAC President, Nell Ingram announced that 34 states, the District of Columbia, and Puerto Rico were represented among its membership of nearly 400 individuals and groups interested in or involved with alternative certification. The program included more than 60 concurrent sessions and six general sessions with speakers whose topics focused on recruiting, training, mentoring, and retaining alternatively certified educators.

One of the speakers was Jason Kamras, a teacher at John Philip Sousa Middle School in Washington, D.C. President George W. Bush named Kamras 2005 National Teacher of the Year at a White House ceremony in April 2005. Kamras, with a bachelor's degree from Princeton and a master's degree from Harvard was recruited by Teach For America and received his teaching certificate through an alternate route. As a teacher for eight years at the D. C. middle school, Kamras said that "limited access to well-funded, high quality schools for economically disadvantaged students is the greatest social injustice facing America today" (NAAC, 2006, 20).

NAAC publishes a peer-reviewed online journal. *The NAAC Online Journal* serves as a forum for the exchange of information and ideas related to alternative certification. NAAC accepts manuscripts of quantitative and/or qualitative research that have implications and applicability for practitioners and policy makers involved with alternative certification.

National Center for Alternative Certification

Established by the National Center for Education Information (NCEI) in September 2003, the National Center for Alternative Certification (NCAC) is a one-stop, comprehensive clearinghouse for information about alternative routes to certification in the United States.

With a three-year grant of $2.25 million from the U.S. Department of Education, NCEI developed a major interactive Web site (www.teach-now.org), continuously updated, and designed to provide information pertaining to alternative routes to certification in every state and the District of Columbia. In addition, more than 262 program providers have completed data templates with extensive information about individual programs, giving prospective teachers answers at their fingertips about alternative routes to certification.

NCAC provides researchers with access to the latest survey information, data, and reports; policymakers with data on the progress of alternative programs; and technical assistance for networking and other opportunities. When possible, NCAC posts research about alternate routes presented at its annual conferences and presented elsewhere.

In addition to regional conferences, the National Center for Alternative Certification hosts an annual conference that encourages researchers to share their studies and research projects with like-minded individuals. At the 2006 NCAC conference, more than 100 individuals shared information through general sessions, breakout sessions, workshops and a plenary session. In 2007, NCAC and NAAC will host a joint conference in lieu of the separate conferences held previously.

Researchers have produced hundreds of studies—and even more commentaries—about alternative teacher certification. The debates are no longer about whether teacher preparation through alternate routes is a viable option. Credible research now assists policymakers and practitioners alike to support effective programs and improve those not up to par in producing effective teachers. Even so, concerns still exist, some of which are discussed in the next and final chapter about the trends and emerging issues of alternate routes.