Teacher Education
What Difference Does It Make?
CEC
www.copsse.org
April 10, 2003

Objectives of the Center
- Conduct a comprehensive review of the extant literature base...
- Identify gaps in the current knowledge base and design a program of study to address them
- Conduct the studies
- Identify and disseminate policy and practice recommendations

Supply and Demand of Special Education Teachers

Overarching Research Questions:
- To what extent does an imbalance between personnel supply and demand exist or will exist?
- To what extent does a shortage vary by personnel type and locality?
- What factors influence the supply and demand of special education personnel?

Three Papers Relating to Supply and Demand

Supply and Demand
Retention and Attrition
Diversifying the Workforce

Considerations
- Suspicion that states do not consistently report certification status
- Terminology
- Old data
What We Know about the Shortage of Special Education Teachers

- Chronic
  - Long term (at least 10 years)
  - 10% of all teachers uncertified

- Great Magnitude
  - Shortage in all geographic areas
  - Greatest shortage in 200 largest cities
  - Shortage in all certification areas of SPE
  - Greater than math and science

What We Know about the Shortage of Special Education Teachers (cont.)

- Local variations within
  - State
  - District

- Supply insufficient
  - Exit attrition
  - Transfers to general education
  - Increasing student population
  - Insufficient supply of new SE teachers

Teachers from CLD Backgrounds

- 38% of SPE students are diverse
- 14% of SPE teachers are diverse

- If current trends continue, by 2009, 40% of students and only 12% of teachers will be diverse (Olson, 2000).

Trends

- Shortage Will Likely Worsen
  - Attrition rate exceeds production
  - Conditions of teaching not improving
  - SPE population projected to continue growth

What We Know About Exit Attrition

- 13% of SPE teachers depart each year
- 10 times as many SPE teachers
- Transfer to General ed as vice versa
- Approximately 1 in 2 are possible candidates for retention

The Gaps

- Supply
  - How to attract more teachers into SPE
  - Reserve pool
  - Impact of alternative certification
  - How qualified are 'uncertified' teachers?

- Attrition
  - How to retain more teachers
  - Why so many teachers transfer out of special education to general education
The Gaps (cont.)

- Retention:
  - Relationship with teacher quality
  - What specific retention strategies are effective for schools, LEAs, and SEAs
- CLD Teachers:
  - Effective recruitment and retention strategies for LEAs and SEAs
  - Measurable benefits of a diversified workforce

Lastly……

Available data suggest that in most of the US, we face a critical shortage of qualified SPE teachers who are willing to work at the salaries we offer, under the working conditions that exist in classrooms.

Personnel Preparation Team: Guiding Questions for the Reviews

- Overarching Question:
  - What influence does formal preparation have on beginning teacher competence as compared to informal preparation?
- Supporting Questions:
  - What characteristics differentiate programs?
  - How are these characteristics related to indicators of teacher quality?
  - How does school context facilitate a beginning special educators’ practice?

Key Findings from Research Syntheses

Comparison To Practices Considered Exemplary in General Education:

- Commonalities:
  - Carefully designed, well-supervised field experiences
  - High degree of professional collaboration
- Differences:
  - Student diversity addressed from different perspectives
  - Program evaluation employs more direct assessment in GE
  - Program orientation articulated better in GE
  - Stronger emphasis on content area pedagogy in GE

Key Findings from Research Syntheses

Induction of Beginning Special Education Teachers

- Conditions of SE practice make beginning teachers more vulnerable
- Effective induction programs in GE and SE share several features (e.g., frequent interactions between mentors and mentee)
- Induction programs influence beginning SE teachers’ decisions to stay, collaborative skills, and self-confidence
- Alternative routes to certification are a form of induction for unprepared teachers
Key Findings from Research Syntheses

Beginning Teacher Quality

- Little consensus exists about the defining characteristics of a quality teacher
- Indicators of quality depend on the research design
- Five approaches to assessing beginning teacher quality exist (process-product checklists, Englert’s checklist, PRAXIS III, surveys, professional standards)

Key Findings from the Research Syntheses: The Status of Licensure

- There have been major changes in licensure structures and requirements in the recent years
- National standards for the preparation of Sped teachers have influenced the licensure standards adopted by many states
- A majority of jurisdictions have adopted licensure structures that include a mixture of categorical and non-categorical options
- Challenges exist in reliably indexing Sped

Key Unanswered Questions

- What characterizes effective practice in initial preparation?
- How do features of initial preparation contribute to beginning teacher competence?
- What characterizes beginning teacher competence?
- How does the school context extend or inhibit beginning SE teachers’ learning after initial preparation? What role does formal induction play in beginning teacher learning?
- What supports do teachers entering through alternative routes (compared to more traditional routes) need?

Certification and Licensure of Special Education Teachers

- Overarching Research Questions:
  - Are methods of certification and licensure predictors of student achievement and other related outcomes? What do we know about the efficacy of alternative routes to certification?
  - What certification options are currently utilized by the states? What criteria have states used to devise these standards? How have changes in certification and licensure influenced the range and design of teacher preparation programs?

Certification and Licensure of Special Education Teachers

- Overarching Research Questions:
  - What are the relationships between the existence of certification and licensure reciprocity agreements among states and Sped teacher supply and demand both within and between states?
  - What is the professional status of special education? How does the evolution of teaching compare with the developmental histories of established professions? What are the issues and social forces that influence the course and development of teaching as it moves toward full professional status?

Research Syntheses

- The Status of Licensure of Special Education Teachers at the Beginning of the 21st Century
- Getting Teachers Where They are Needed Most: The Case for Licensure Reciprocity
- The Proliferation of Alternative Routes to Certification in Special Education: A Critical Review of the Literature
- The Development of Teaching as a Profession: Comparisons with Careers that Have Achieved Full Professional Standing
Key Findings from the Research Syntheses: Licensure Reciprocity

- Forty-five states have entered into the NASDTEC Reciprocity Compact
- Although good reciprocity benefits individual teachers and individual states, licensure has limited capacity to alleviate teacher shortages
- Other factors influence teachers’ decisions to teach
- Further research is needed to learn the extent to which teachers relocate in response to market conditions

Key Findings from the Research Syntheses: Alternate Routes to Certification

- Little is known about ARC in Special Education
- There is a great range and variability of the structure and standards of ARC
- Successful, ARC programs are planned and delivered collaboratively by IHEs, SEAs, LEAs.
- We know little regarding how ARC programs influence professionalization of Sped or teacher candidates.

Key Findings from the Research Syntheses: Teaching as a Profession

- Teaching as a profession mirrors debates that have occurred in the developmental histories of established professions
- The developmental structures found in medicine, law and engineering are not currently found in education
- At present, teaching lacks clear borders that demarcate legitimate programs of preparation
- Efforts to professionalize teaching are dependent upon free-market or governmental forces which influence professional preparation programs

Key Unanswered Questions

- Are there certain licensure frameworks or models more efficacious?
- Is there a relationship between the existence of certain licensure models and the demand for Sped teachers within a particular jurisdiction?
- To what extent do ARC programs contribute to the production of Sped teachers?

Key Unanswered Questions (cont.)

- What are the relative cost benefits of different types of preparation programs?
- How do variations in the quality/rigor of teacher preparation affect teacher performance outcomes? How do the variations affect the status of the profession?
- How have certification policies, including ARC and reciprocity affected teacher migration and supply?

Formulating the Research Agenda
Research Design Panel
Baltimore, MD
April 17-19, 2002

- Purpose: Prescribed in RFP
- Inputs: Executive Summaries, Synthesis of the Syntheses
- Process: Expert Panel (Ed Boe, Lynn Boyer, Elaine Carlson, Stan Deno, Mary Kennedy, and Virginia Richardson) Discussion and Interactions with Project Team
- Outcome: Four Guiding Questions

Research Design Panel: Guiding Questions

- What characterizes efficient and effective practice in initial preparation as measured by beginning teacher quality and retention?
- How do school and district context influence beginning teacher quality and retention?
- How does state policy context affect the shortage of qualified special education teachers?
- How does policy context affect the content and process of teacher education?

The Quest for Concrete, Researchable Questions

- Post RDP Team Planning
  - May - June 2002
- Policy RDP
  - July, 2002
    - Bill East, Mike Hardman, Maggie McLaughlin, Jane West, Deb Ziegler
  - Policy Summit, July 2002

Policy Summit Outcomes: Top-rated Questions

- How do school settings (e.g., administrative support, school climate, student SES) interact with beginning teachers' preparation to influence their effectiveness and retention?
- What teaching and working conditions (class size, caseload, collaboration time, paperwork) lead to quality and retention of special education teachers?

Policy Summit Outcomes: Other Key Questions

- What defines teacher quality in special education teachers?
- What are the key characteristics of initial preparation programs that contribute to the development of skill in novice special educators?
- How do workplace variables interact with preparation variables to contribute to the quality of novice special education teachers?

Setting the Research Agenda

- Teacher Quality
  - Validation of BTQ Assessment
  - Initial Preparation and BTQ
- Policy Studies
  - Indexing Study (with CEC Clearinghouse)
  - SASS Analysis
  - Cost Effectiveness Analysis
ARC Indexing Study

• Background
  - Proliferation of ARCs
  - Little Known re: Scope
    - re: Characteristics
    - re: State Variability

• Research Questions
  - What is the breadth and depth of ARC training?
  - How do programs vary across states?
  - How do ARC programs differ in terms of
    - a) program sponsorship/alignment
    - b) program length/intensity
    - c) program participants
    - d) specific program characteristics?
    - e) program capacity
  - How does policy context influence ARC programs within states?

• Method
  - Partnership with CEC Clearinghouse
  - Development of Structured Interview Reflecting Key Factors
  - Interviews conducted by BEBR
  - Analyses of State Policy Contexts
  - Data Aggregated Across/Within Factors and States

ARC Indexing Study: Initial Outcome Data

• Scope of ARCs to Date
  - 185 programs in 30 states (no info from several key states)
  - Six states have 9 or more programs and account for 68.1% of the programs found
  - Two states (CA & TX) account for 44.3% of the programs found

• Relationship of Selected States Program Data to Percent of Teachers Not fully Certified
**ARC Indexing Study: Initial Outcome Data**

<table>
<thead>
<tr>
<th>State</th>
<th># ARC Programs</th>
<th>% Not Fully Certified</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>46</td>
<td>20.84</td>
</tr>
<tr>
<td>TX</td>
<td>14.26</td>
<td>10.64</td>
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<td>KY</td>
<td>46</td>
<td>2.17</td>
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<tr>
<td>SD</td>
<td>14.26</td>
<td>1.06</td>
</tr>
<tr>
<td>UT</td>
<td>46</td>
<td>4.23</td>
</tr>
</tbody>
</table>

**Schools and Staffing Survey Study**

**Background:**
- The proliferation of ARCs
- Debate continues regarding ARC:
  - Proponents argue ARCs:
    - reduce shortages
    - raise the quality of teachers
    - diversify the teaching workforce
  - Opponents argue ARCs:
    - degrade the professional status of teaching
    - ultimately hinder student learning
    - teachers: easy come, easy go

**Schools and Staffing Survey Study**

**Purpose**
- To describe the demographics of those teachers who have attained their certification through alternative routes, as well as to describe the characteristics and outcomes of their alternative preparation.

**Research Questions:**
- Research Question I: *The extent of alternative certification.*
  - What is the extent of practicing alternatively certified special educators in the elementary and secondary teaching force today? How have the demographic and descriptive characteristics of these educators changed over time?
- Research Question Number II: *The quality and efficacy of alternative certification.*
  - How do alternative routes vary from traditional routes to elementary and secondary special education certification according to both the quality and components of the teacher preparation program?
Schools and Staffing Survey Study

- Research Questions:
- Research Question Number III: The relationships among method of preparation, self-efficacy, and intent to remain in the profession.
  - What are the relationships, if any, among types of certification and new teacher intent to remain in the profession? Specifically, what are the differential effects of method of teacher preparation, mediated by situational variables (e.g., self-efficacy), on a new special education teacher’s intent to stay?

Schools and Staffing Survey Study

- Methodology:
  - This study will be based upon an analysis of data from the public school teacher surveys of the Schools and Staffing Surveys (SASS) from 1997-98, 1990-91, 1993-94, and 1999-2000.
  - The SASS surveys were sponsored by the United States Department of Education, National Center for Educational Statistics (NCES). Schools were sampled nationally, proportional to size within various demographic strata. Approximately 57,000 teachers were sampled.

Schools and Staffing Survey Study

- Methodology:
  - Variables used in this study were taken across time from the SASS and consist of the following, among others: teacher demographics (gender, income, race, age, marital status), teacher academic background, degrees held, previous work experience, and programmatic aspects of the respondent’s pre-service preparation.

Schools and Staffing Survey Study

- Methodology:
  - Other variables used included responses to a series of questions contained in the SASS that seek to measure a teacher’s self-efficacy, or ask “how well prepared were you before entering teaching” to handle specific sets of teaching skills. In addition, variables were included that measured a teacher’s intent to stay in special education, and their intent to stay in the profession of teaching altogether.

Schools and Staffing Survey Study

- Initial Outcome Data:

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<tr>
<th>Holds Certification in Main Field?</th>
<th>sample (n)</th>
<th>pop. est. (value)</th>
<th>plus/minus (value)</th>
<th>%</th>
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<td>329,167</td>
<td>6,324</td>
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<td>total</td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>plus/minus (value)</td>
<td>percent (%)</td>
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<tr>
<td>------------------------------------------</td>
<td>------------</td>
<td>------------------</td>
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<td>Regular/APC</td>
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<td>Probationary</td>
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<td>8,216</td>
<td>967</td>
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<td>Special Education**: Provisional</td>
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<th>percent (%)</th>
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<td>3,988</td>
<td>279,774</td>
<td>5,926</td>
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<table>
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<th>plus/minus (percent)</th>
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<tr>
<td></td>
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<td></td>
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<td>5,335</td>
<td>395,951</td>
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Cost Effectiveness Study

- Denton & Smith (1985): Alternative versus traditional routes
- Lewis (1990): 5th year licensure versus undergraduate teacher education programs
- Darling-Hammond (2000): 5-year, 4-year, and alternative route programs
Cost Effectiveness Studies

- Participants: Mike Rosenberg and Paul Sindelar, COPSSE, and Jim Dewey and Dave Denslow, BEBR

- Question: How should public funds be allocated across training programs to maximize special education teacher supply?

Cost Effectiveness: Next Steps

- Develop analytical model
- Analyze data from familiar programs
- Develop program taxonomy and cost out all models, including traditional programs
- Develop quantitative model of special education teacher labor market
  - Estimate net benefits
  - Relate benefits to program characteristics
- Identify need for new parameter estimates

Training Costs

- Production Costs
- Number of Graduates
- Retention: How long do they remain in the field?
- Teacher Quality: How capable are they?
- Contexts: Where do they work?

Production Costs

- Instructional costs
  - Instructors’ Salaries
  - Equipment and Materials
- Administrative costs
  - Facilities
  - Record Keeping
  - Student Services
- Opportunity Costs

Number of Graduates

Some enter teaching, and others do not. Of interest to us is the number of graduates who to enter the profession.

So, Unit Cost is better expressed as

\[
\text{Costs/Number of Graduates who enter the profession}
\]

An Example:

Volusia County/UF Program

- OSEP funded from 1992-1995
- Paraprofessional step up program
- 19 Graduates
- Total costs incurred: $274,000
- Unit cost: $14,413 (discounting admin costs)
- 16 teachers currently teaching in VC
- Graduates have provided 140 years of service
- Cost/year of service: $103
Retention and Context Upgrades

Retention: All other things equal, if graduates of Program A remain in teaching longer than graduates of Program B, Program A may be said to be more cost effective than Program B.

Also, retention in hard-to-staff schools may be more highly valued than retention in readily staffed schools.

Beginning Teacher Quality Upgrade

**Beginning Teacher Quality:** All other things equal, if graduates of Program A are judged to be more effective teachers than graduates of Program B, Program A may be said to be more cost effective than Program B.

Cost Effectiveness Model

The Simple Case

Impact of an AR Program

What is the impact of an alternative route program on supply?

Assuming that new programs supplement existing programs . . .

Total cost of eliminating shortages by raising salaries is reduced proportionately
Does Teacher Education Make a Difference?

Research we need:
- Cross institutional studies that provide insight into effective preparation practice
- Longitudinal approaches that examine how teachers change in response to preparation
- Studies that account for the influences of context
- Studies that tie preparation to valued criterion measures

Carving Out a Research Agenda in Teacher Education

How do we know teacher education makes a difference?

Issues in Design

Understanding the Influence of Teacher Education

What makes the task so hard?

Learning to teach is developmental
- Teacher education programs and beginning teachers are situated in complex contexts
- Conducting research that is meaningful to key stakeholders

Understanding the Influence of Teacher Education

What makes the task so hard?

- Special education teaching is complicated by disability, grade level, and role played
- State assessments may not be appropriate
- Determining reasonable progress for students with disabilities

Linking Preparation, Teacher Quality, and Student Outcomes: Factors to Consider

Preparation Influences:
- State policies
- Accreditation standards
- Public school conditions
- Qualities of entering preservice teachers
- Teacher education funding

Teacher Quality:
- Classroom Practices
- Dispositions
- Intellectual Ability
- Collaborative Practices
- Years of Experience

Student Outcomes:
- Academic
- Social
- Functional

Preparation Routes:
- Traditional Preservice Preparation
- Alternative Certification
- Emergency Certification

Federal & State Level Influences:
- State and Federal Policies
- Professional Standards
- Support for Public Education
- Family & Student Involvement
- Induction Programs
- Intensity of instructional support

District/School Program Level:
- Working Conditions (e.g., school climate, school size, administrative support)
- Professional Development
- Work Assignment Issues
- Service Delivery Systems
- Nature of Disability

Family & Student Influences:
- SES
- Family Involvement
- Nature of Disability

Preparation Influences:
- State policies
- Accreditation standards
- Public school conditions
- Qualities of entering preservice teachers
- Teacher education funding
Issues in Designing Teacher Education Studies in Special Education

Developing dependent variables:
- Measures of knowledge, beliefs, and practice capture developmental nature of learning to teach
- Measures can be used in large and small scale studies (e.g., retention, classroom practice)

Developing dependent variables:
- Measures capture different aspects of special education teaching
- Measures contribute to some of variance in student performance or can predict later expertise

Sampling programs for study:
- Preparation programs are heterogeneous
- Need to distinguish programs in ways that may influence teacher learning (e.g., views of teacher knowledge, amount of clinical experience)

Determining the Influence of Context:
- Designs must account for ways state, district, and building policies and practices might influence beginning teacher practice

Considers constructivist and developmental nature of learning to teach:
- Experiences and beliefs novices bring to their program influence learning
- Knowledge development is uneven and evolves differently according to context

Developing Quality Special Education Teachers:

Center on Personnel Studies in Special Education

University of Florida
Instructional Research Group
University of Colorado
Johns Hopkins University
**Guiding Question**

What characterizes efficient and effective practice in initial preparation as measured by beginning teacher quality?

**Rationale:**

Establish criteria for evaluating the impact of initial preparation on beginning teachers

**Overarching Question:**

What defines teacher quality in beginning special education teachers?

---

**Our Conceptualization of Teacher Quality**

- Beliefs & attitudes about teaching reading & student learning
- Knowledge of the reading process & practices
- Adaptations for Individual Differences
- Specific Reading Practices
- Instructional Practices

**Research question:**

What are the classroom practices and beliefs that promote growth in reading skills for 3rd, 4th, and 5th grade students with high incidence cognitive disabilities?

**Research Activities**

- Instrument Selection and Modification
- Observations and interviews with teachers
- Collection of some student data
- Conceptualizing common themes

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**Role of Initial Preparation in Beginning Teacher Quality (Year 3)**

**Rationale:**

Identify key features of preparation for studies linking preparation, teacher quality, and student performance

**Research Question:**

What are the common features of preparation that discriminate competent early career teachers from their less competent counterparts?

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**Facets of Effective Teaching: Linking Teacher Quality to Student Performance (Year 3)**

**Rationale:**

Establish criteria for evaluating the impact of initial preparation on beginning teachers

**Overarching Question:**

What defines teacher quality in beginning special education teachers?

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**Role of Initial Preparation in Beginning Teacher Competence (Year 3)**

**Purpose:**

Develop survey measures assessing features of initial preparation and beliefs that discriminate more expert from less expert novices

**Participants:**

Beginning special education teachers selected for teacher quality study
Role of Initial Preparation in Beginning Teacher Competence (Year 3)

Research Activities:
- Create initial preparation survey
- Conduct content validation of survey
- Pilot test survey
- Conduct focus groups with teachers being observed
- Conduct survey with future teachers from various preparation routes

Impact of Initial Research
- Provides observable criteria and some survey measures for determining the impact of initial preparation
- Provides a better understanding of the roles general and special education are playing in the achievement of students with disabilities
- Lays some foundation for correlational studies examining relationships between teacher quality, workplace, and initial preparation variables

Components of the Survey
- Initial Preparation
- Work Environment
- Instructional Programs, Materials & Practices
- Certification and Preparation Route to Teaching
- Special Education