Special Education Teacher Education: An Update

Topics and Presenters

Supply of Teachers from Traditional and Alternative Preparation Routes in Special and General Education

–Ed Boe, Univ of Pennsylvania

Topics and Presenters

Special Education Teacher Attrition:
What We Know, What We Can Do

– Bonnie Billingsley, Virginia Tech

Topics and Presenters

Highly Qualified Beginning Special Education Teachers: The Role of Classroom Practice, Teacher Knowledge, Preparation, and School Context

–Mary Brownell, Univ of Florida

Topics and Presenters

Teacher Education's Role in Technology Application

–Sean Smith, Univ of Kansas

Topics and Presenters

Alternative Route Programs in Special Education: What We Know About Program Design, Instructional Delivery, and Participant Characteristics

–Mike Rosenberg, Johns Hopkins

Topics and Presenters

Cost Effectiveness and Teacher Preparation Routes

– Paul Sindelar, Univ of Florida

Tomorrow's Schedule
Catalina 2

- 8 am Ed Boe and Lynne Cook, Cal State Dominguez Hills
- 9 am Paul Sindelar and Mike Rosenberg
- 10 am Mike Rosenberg and Paul Sindelar
- 11 am Sean Smith
- 1 pm Mary Brownell, Anne Bishop, UF, and Mary Dingle, Sonoma State
- 2 pm Bonnie Billingsley

SPECIAL EDUCATION TEACHERS: SUPPLY AND DEMAND

Ed Boe and Bob Sunderland
University of Pennsylvania

And

Lynne Cook
California State University, Dominguez Hills

TED Conference
November 9, 2006

Main Problem

Chronic shortage of special education teachers,

Due to:

Insufficient supply to satisfy demand.

"I hope it's not too much of an inconvenience for you, but I'm desperate to hold on to our good teachers."

National Data Sources

Data Sources:

OSEP's Data Analysis System: 1987-88 through 2004-05

NCES's Schools and Staffing Survey: 1999-00 and 2003-04

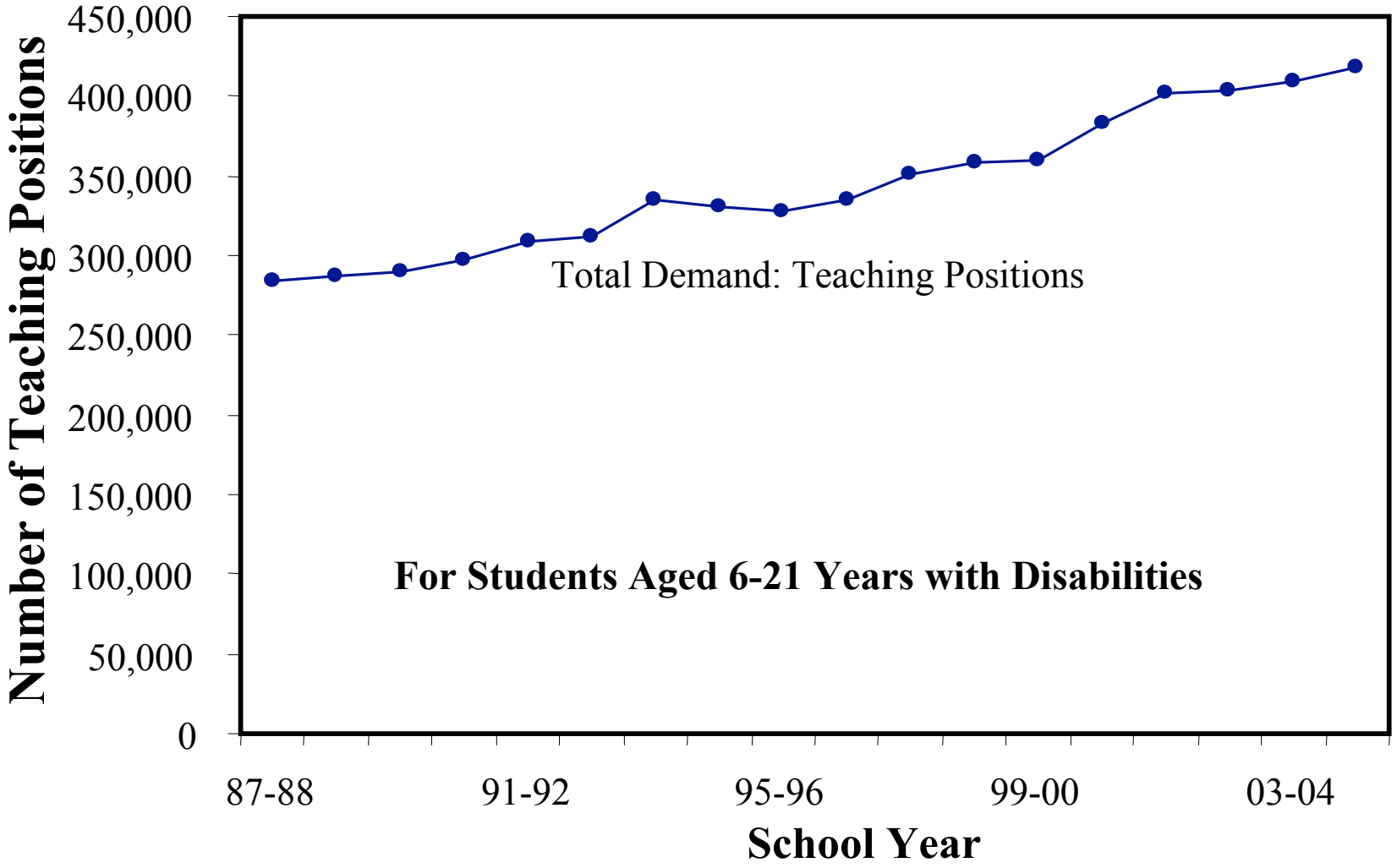
NCES's Teacher Follow Up Survey: 2000-01

NCES's Integrated Postsecondary Education Data System

Caution:

Numbers reported are subject to sampling and other errors; therefore, numbers reported are an approximation.

Total Demand for Special Education Teachers



Source: OSEP Data Analysis System

Growth in Total Demand for Teachers in Special Education

- 47% during the past 17 years
- 2.75% per year during the past 17 years
- 10,000 additional teaching positions created per year during the past 6 years

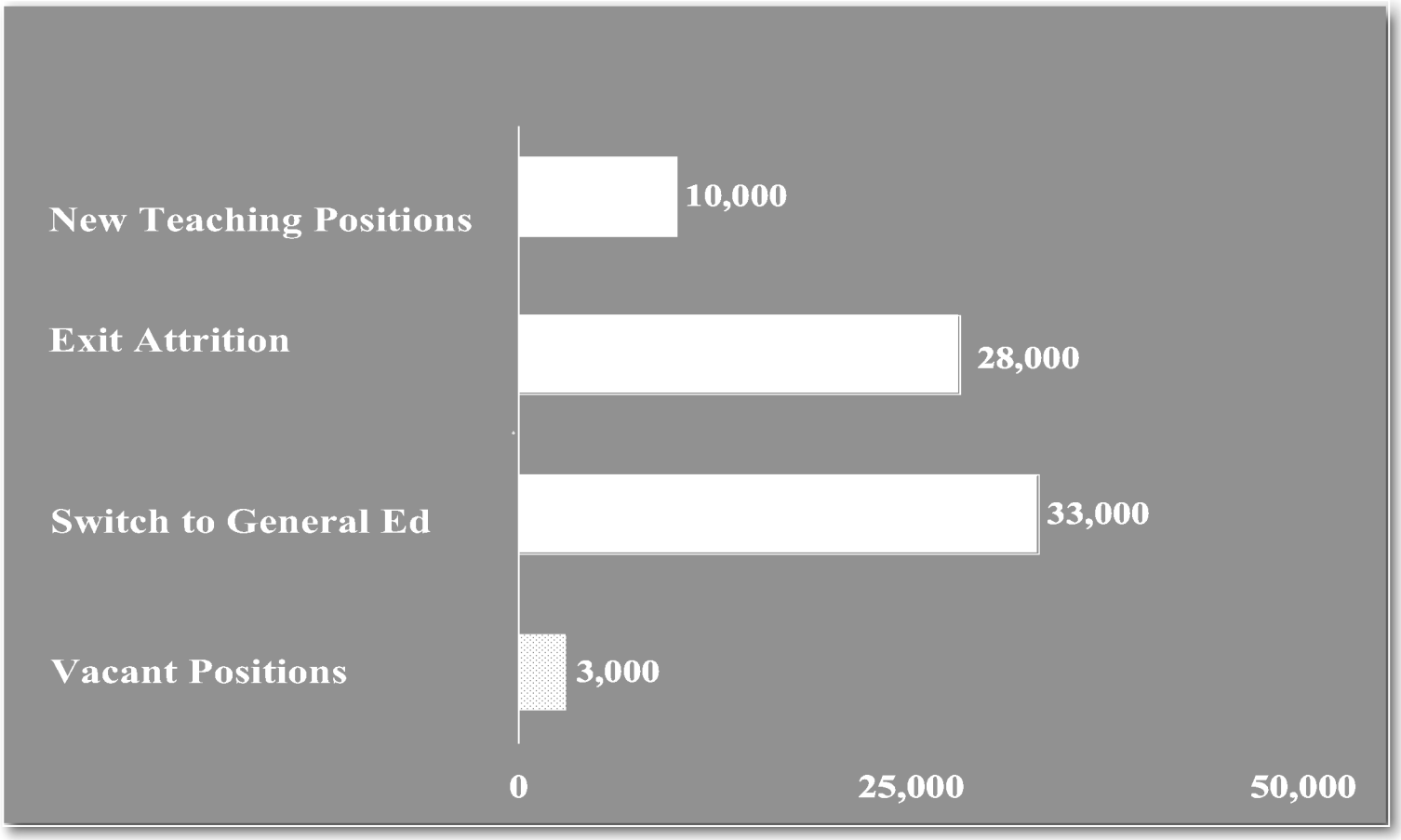
Annual Demand for New Hires of Special Education Teachers

QUESTIONS:

How large is the annual demand for new teacher hires?

What factors create the annual demand for new hires?

Sources of Annual Demand for New Hires of Teachers into Special Ed (Year 2000)



Annual Number of Teaching Positions to be Filled by New Hires

•Sources: DANS (OSEP); 1999-01 SASS/TFS (NCES)

Annual Supply of New Hires of Special Education Teachers

QUESTION:

What sources produce the annual supply of new hires?

Sources of the Annual Supply of Newly Hired SE Teachers

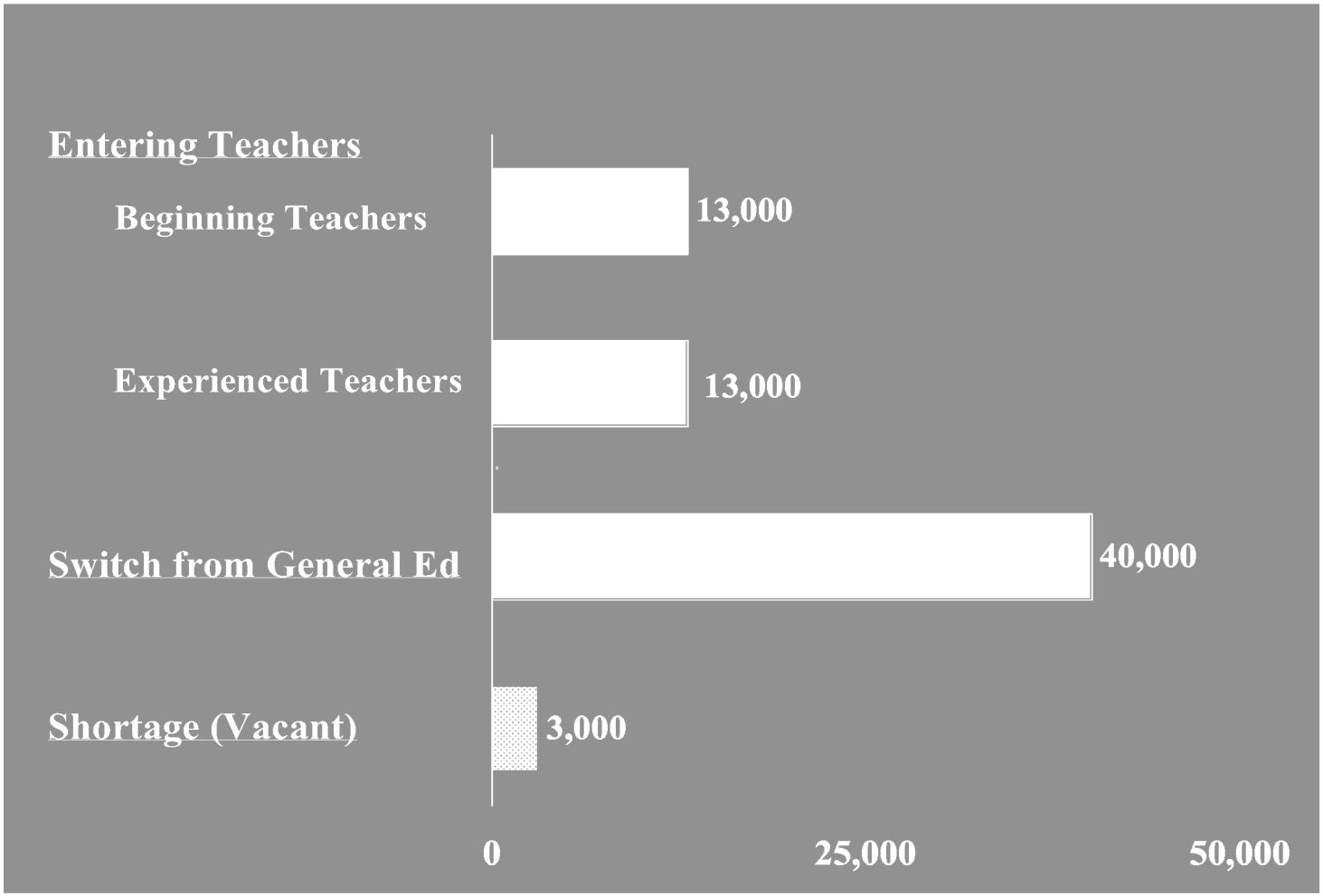
A. Entering Teaching Employment

1. Beginning Teachers

2. Experienced Teachers
   a. Reentering Experienced Teachers
   b. Migrants from Private to Public Schools

B. Employed General Ed Teachers Switching to Special Ed

Sources of Annual Supply of New Hires of Special Education Teachers (Year 2000)



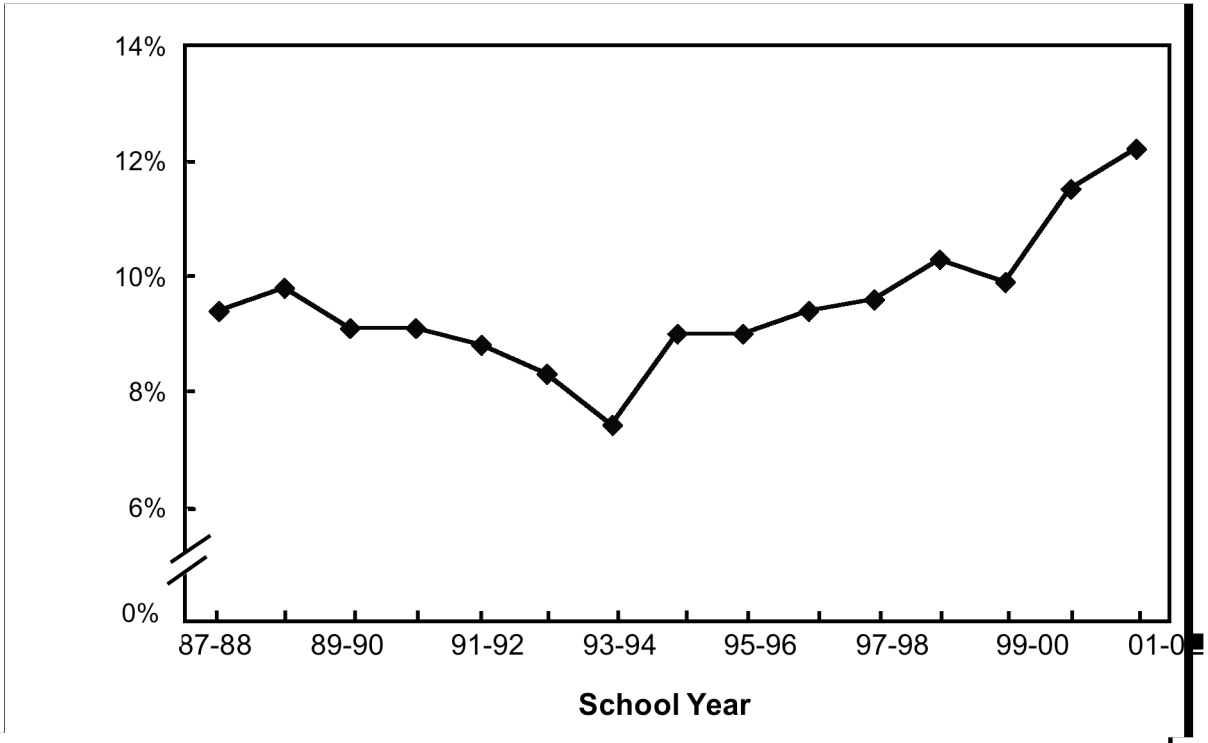
Sources: DANS (OSEP); 1999-01 SASS/TFS(NCES)

Qualifications of Special Education Teachers

QUESTION:

Do the sources of supply of SpEd teachers yield a sufficient number of teachers who are qualified to teach in special education?

Consider the shortage of fully certified teachers.



Shortage of fully-certified special education teachers by school year.

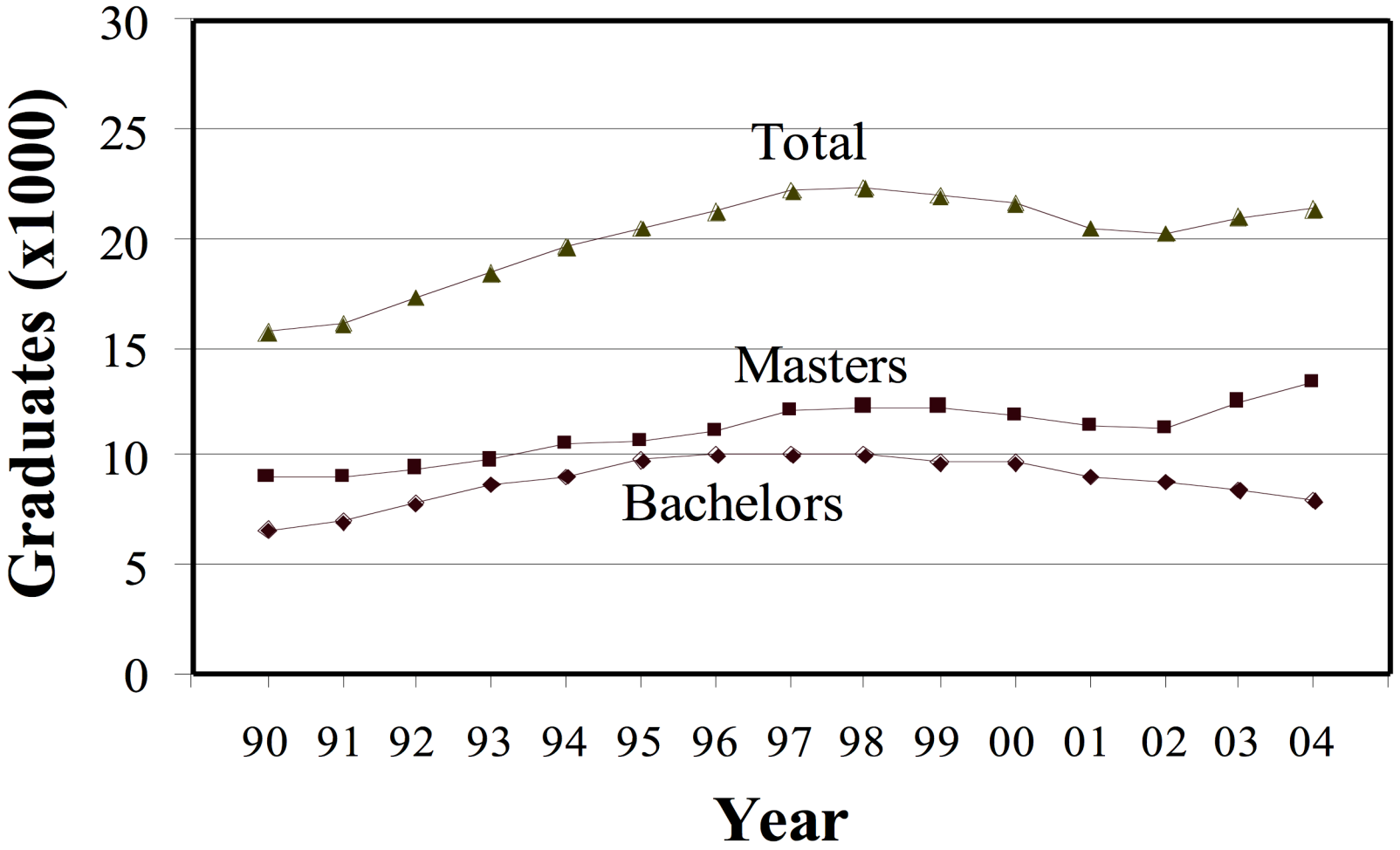
Source: OSEP Data Analysis System

Degree Graduates With Traditional Preparation

QUESTION:

Does the annual production of degree graduates from traditional teacher preparation programs satisfy the annual demand for qualified teachers in special education?

Degree Graduates in Special Education Teaching



Source: IPEDS, NCES

Annual Degree Graduates with Majors in Special Education Teaching : Year 2000

Employment Status at Time of Graduation	Bachelor's		Master's	
	Number	%	Number	%
Not Employed as Teachers	9,300	97%	1,300	11%
Employed as Teachers	300	3%	11,000	89%
Total Graduates	9,600	100%	12,300	100%

Sources: IPEDS and SASS, NCES

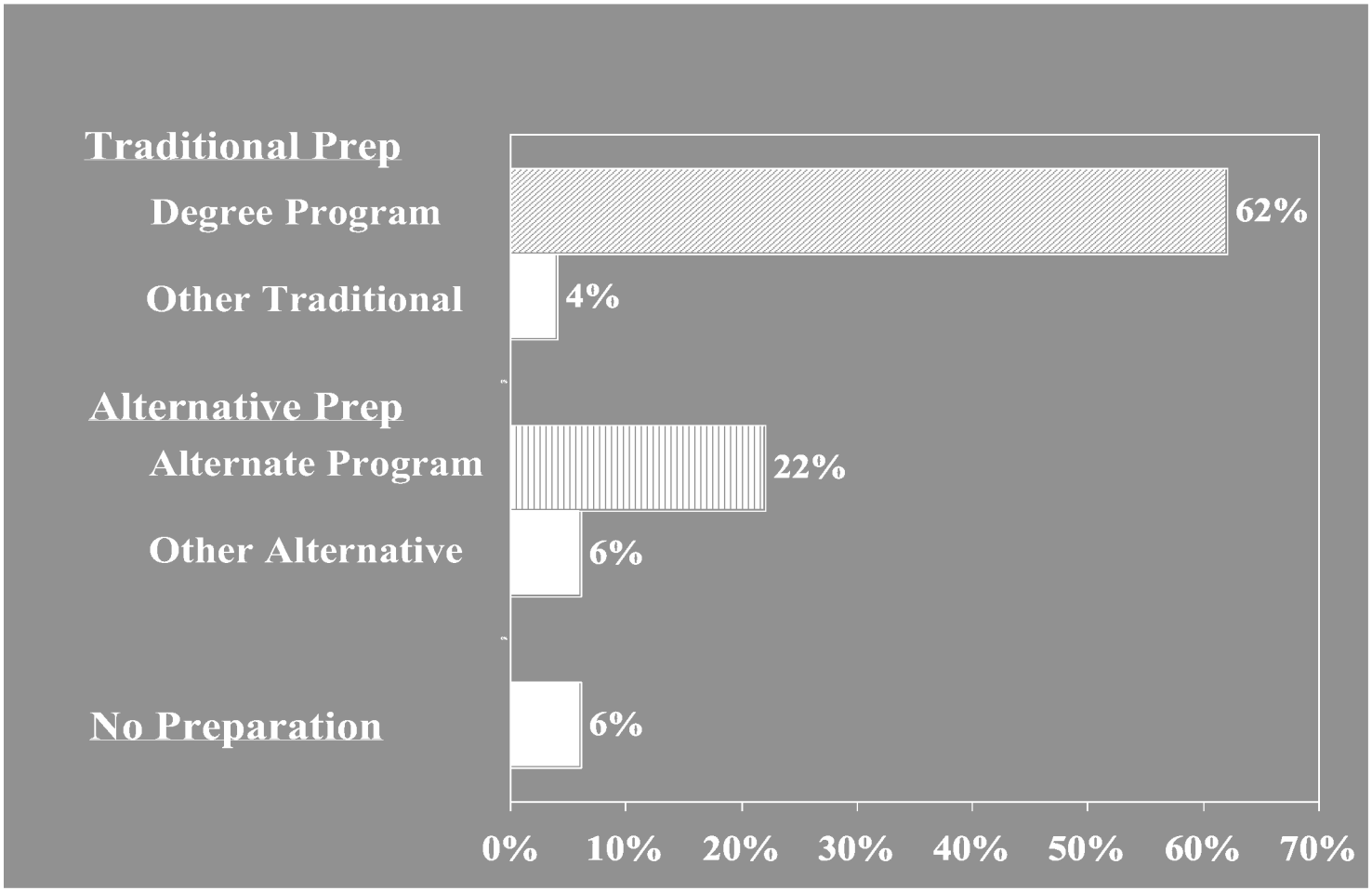
Questions

- Why is the production of traditionally prepared Special Education teachers at the bachelor's level declining when the annual demand is increasing?
- To what extent is the demand for new teacher hires satisfied by alternatively prepared teachers and unprepared teachers?

Types of Teacher Preparation

- TRADITIONAL TEACHER PREPARATION
  - Traditional Degree Programs (BA/BS & Master's)
  - Other Traditional (e.g., fifth year programs)
- ALTERNATIVE TEACHER PREPARATION
  - Alternative Programs
  - Other Alternative (e.g., take courses)
- NO TEACHER PREPARATION

Supply of Beginning Special Education Teachers With 1 – 3 Years of Experience: By Type of Preparation



Percentage of Beginning Special Education Teachers

Source: 2003-04 SASS, NCES

Main Topics for Breakout Session

Comparisons of traditional and alternative routes of teacher preparation in terms of:

- Amount of preparation completed
- Qualifications produced
- Response to teacher shortage
- Fidelity to alternative route policy intents

TEACHER TURNOVER IN SPECIAL EDUCATION

Bonnie S. Billingsley
Virginia Tech
TED/TAM Conference
November 9, 2006

RECENT NEWSPAPER HEADLINES

From Georgia:

"***Special ed teachers could leave classroom*** due to No Child rules"

From Miami-Dade:

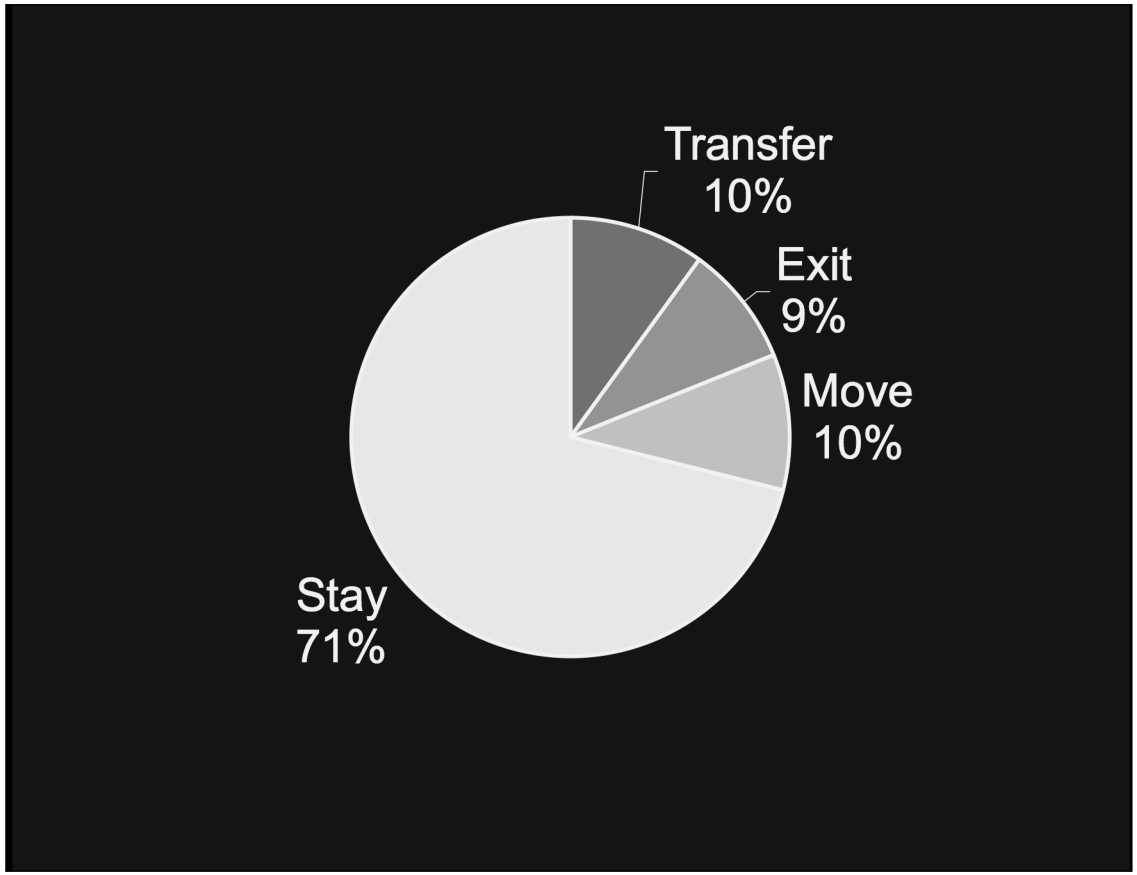
"Teachers of special-ed students want more help… ***special education is very challenging field***…"

Types of Teacher Turnover

- ***Switch*** or ***transfer*** to general education
- ***Move or migrate*** to other special education positions
- ***Exit*** to non-teaching positions

SPECIAL EDUCATION TURNOVER (in 2000-01)

Data from Boe, Cook, & Sunderland, 2006

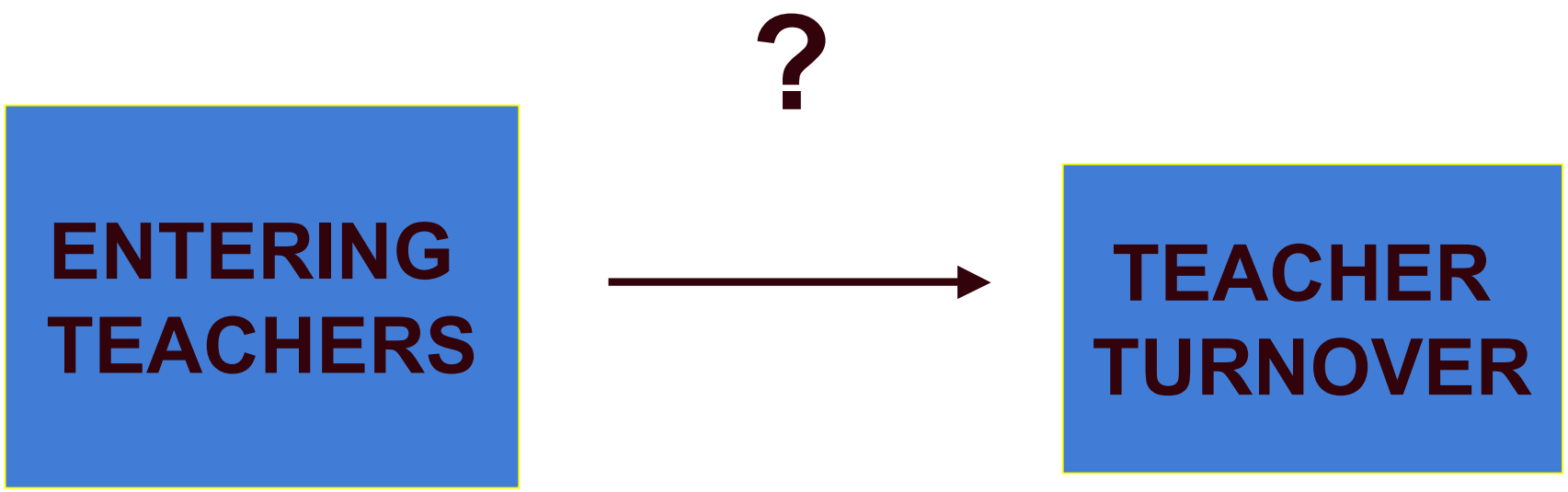


COSTS OF TURNOVER

- Financial
- School
- Student
- Teacher

EXODUS OF EARLY CAREER TEACHERS

WHAT CONTRIBUTES TO TEACHER TURNOVER?



Linking Teacher Quality and Preparation

Mary T. Brownell

Center on Personnel Studies in Special Education

Demands of Current Policy Context

- Strong emphasis on teacher quality and questions about the ability of Colleges of Education to prepare high quality teachers has put incredible pressure on teacher educators to establish credible linkages between teacher education, the quality of TE graduates, and the achievement of students taught by TE graduates.

Considerations in Making Such Linkages

- Essential to establishing linkages between teacher education, teacher quality, and student achievement are valid and reliable dependent measures
  - Dimensions of special education teacher quality are not well-conceptualized and potentially vary considerably
  - Valid assessments of those dimensions are not available
  - Student assessment is inadequate for comparison across groups of student with disabilities and most standardized, group administered tests are insufficiently sensitive to gauge gains

Considerations in Making Such Linkages

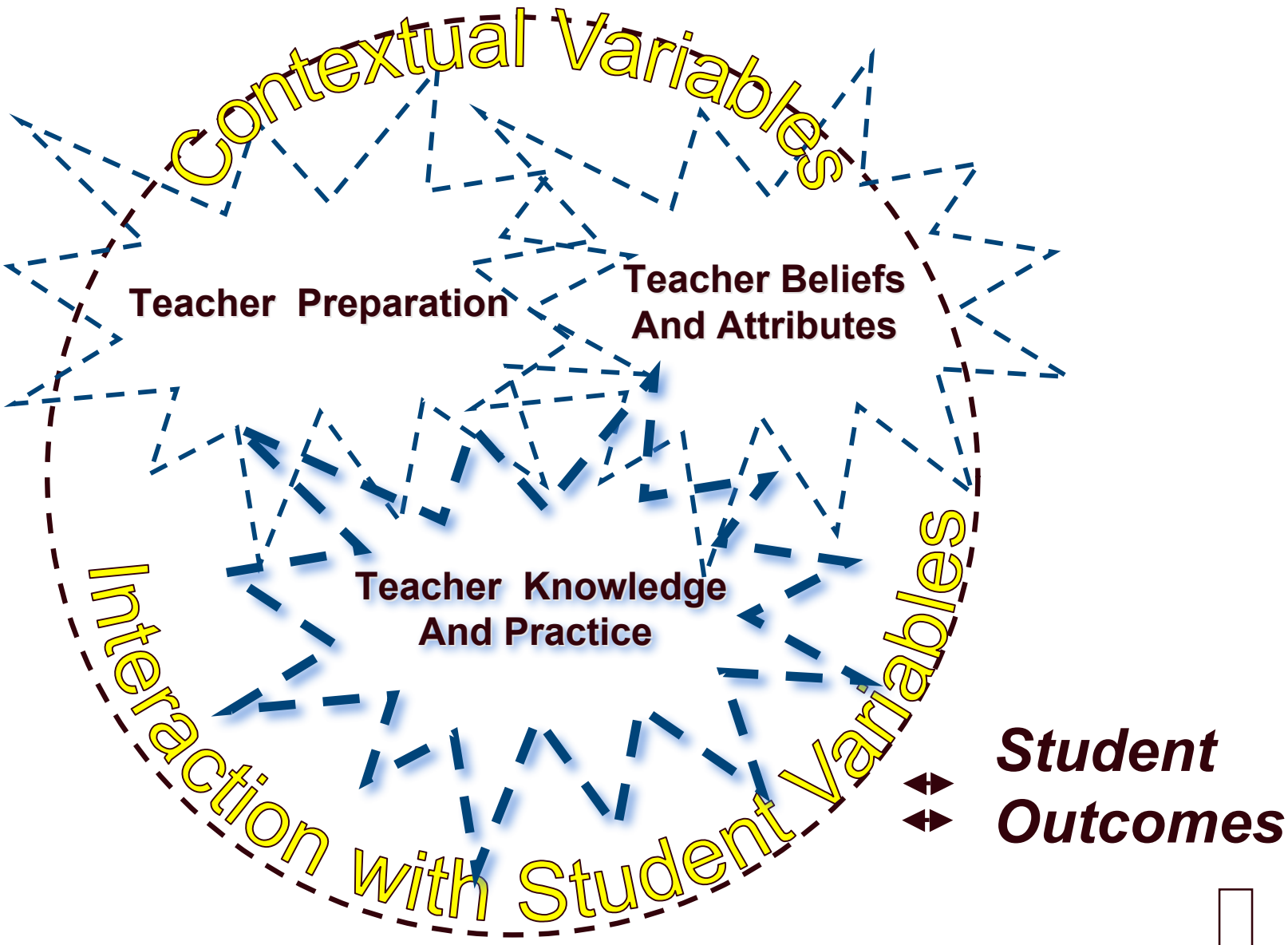
- Program variability is enormous, making it more difficult to link program elements with specific changes in dimensions of teacher quality
- Special education teachers work in such varied contexts requiring specific knowledge, making comparisons across these contexts challenging
- Students with disabilities are served by multiple professionals, making it difficult to link their achievement with the special education teacher

Our First Attempt

- Focused mostly on understanding some key dimensions of teacher quality, for both beginners and experienced teachers, and to a lesser degree, the contextual factors that seem to support quality

What did we do?

- Quantitative studies of 30 beginning teachers and 60 of varied experience (Colorado, Florida, California)
- In-depth, qualitative studies of selected beginning and experienced teachers involving both interviews and observations


Contextual Variables
Teacher Preparation
Teacher Beliefs
And Attributes
Teacher Knowledge
And Practice
Interaction with Student Variables
Student
Outcomes

Quantitative Findings

- Beginning special education teachers demonstrated average generic practice; whereas, demonstrated reading practice was somewhat below average.
- Overall classroom practice correlated with student gains in oral fluency
- Overall classroom practice correlated with knowledge of word attack

Qualitative Findings

- Most highly engaging teachers differed from moderate to low engaging teachers on:
  - Instructional quality, including structure and coherence of reading lessons as well as strategies for engaging students in reading
  - Responsiveness to student needs, both academic and behavioral
  - Socio-emotional climate of classroom
  - Strategies for fostering student autonomy

Qualitative Findings

- Knowledge of special education and knowledge of reading pedagogy are both important, and most beginners feel unprepared to teach reading
- Opportunities to apply and practice teacher education content influences sense of efficacy and classroom practice
- Preparation in classroom management influences a beginners' ability to deliver instruction

Qualitative Findings

- Access to curriculum and relevant training influences instruction
- Service delivery model influences ability to provide instruction
- General administrative and collegial support plays a necessary, but not sufficient role in supporting beginners

Conclusions

- Quality of the special education teachers' reading instruction matters in securing student achievement gains, particularly at the basic skill level
- Knowledge of how to teach reading (word attack) relates to quality of instructional practice
- Beginning teachers demonstrated a need to strengthen reading instruction

Conclusions

- The nature of preparation in reading seems to matter
  - good experience is necessary
- Need to better understand the role of curriculum in supporting beginning teacher practice
- Uneven practice of beginners suggests a strong need for coherence between preparation and induction

Questions to Consider

- Given the dramatic shortages of special education teachers, and our subsequent need to prepare teachers broadly, how can we help special education teachers develop the sophisticated knowledge they need to teach reading well?
  - Or, the sophisticated knowledge they are likely to need to teach other subject areas well?

Technology & Teacher Education

Panel Inclusion?

- Reading and Teaching?
- Behavior and Teaching?
- State of Teacher Preparation
  - Traditional
  - Alternative
  - Distance/Online
- State of Assistive/Instructional Technology
  - Meaningful Access to General Education Curriculum
  - Accommodations & Modifications

Technology & Teacher Education

- Online/Distance/Alternative Prep
  - Delivery at a Distance
  - Supplementing Current Traditional Efforts
    - BlackBoard - blackboard.com
    - WebCT - webct.com
    - Moodle - moodle.com
    - Podcasts - epnweb.org
    - iChats - apple.com/education/solutions/ichat
    - Live Messenger - microsoft.com
    - Bloggin - essdack.org
    - Interactive Video Conferencing - altec.org

Distance/Online Instruction

- Impact on Teacher Preparation
  - Meyen and colleagues
  - Spooner and colleagues
  - Collins and colleagues
  - Skylar, Higgins, Boone and colleagues
- Delivery Evaluation
  - Satisfaction
  - Achievement
  - Perceived Knowledge
  - Ability to Apply Knowledge?
  - Demonstrate capacity?

Distance/Online Education

- Faculty development - Leadership Prep
  - Evidence of preparation
  - Coursework for skill development
  - Coursework on implications
    - Pedagogy
    - How to Apply?
    - When to apply?
    - Media/Format Implications?

Assistive/Instructional Technology

Why Technology & Teacher Education?

- Body of research documents that it works
  - Reading -
    - access/decoding/comprehension
  - Writing -
    - mechanics/quality/quantity
  - Adaptive development -
    - self-determination

Assistive/Instructional Technology

- Technology Impact
  - CEO Forum
    ceoforum.org
  - NCTI Information Dissemination
    nationaltechcenter.org
  - NATRI Findings
    natri.uky.edu
  - QIAT
    qiat.org

AT/IT Teacher Education

- Teacher Education & AT/IT Research
  - How to we prepare future teachers?
    - pt3.org
  - Edyburn and Gardner - JSET - 1999
    - Individual to Group Visions
      - Collegial Study Groups w/ Shared Vision
      - Communities of Practice
    - Selection
    - Acquisition
    - Implementation
    - Integration

AT/IT Teacher Education

- Preservice Examinations
  - Teacher Technology Skill Translate to Adoption?
  - Does Skill Translate to Integration?
  - Do Preservice Students Value Technology?
  - Self-efficacy tied to Technology Integration
    - Computer-related teaching practices

AT/IT Teacher Education

- Faculty and Preservice Student Development
  - Reverse mentoring
  - Skill development
  - Communities of Practice
  - Knowledge dissemination

AT/IT Teacher Education

- Research indicates Teacher Education:
  - Pre-service teachers need to perceive AT is a tool that can:
    - Expand Student Engagement
    - Promote equitable access to the general education curriculum
  - Teacher Education Programs need to:
    - Incorporate technology rich coursework
    - Observe classroom teachers integrating AT
    - Use AT in an inclusive setting (preservice student)
    - Access to multiple and frequent opportunities to practice across the teacher education experience
  - Michaels & McDermott
  - Wetzel and colleagues

AT/IT Teacher Education

Next steps in Research

1. *Both qualitative and quantitative methodologies are needed to provide scientifically based evidence for the technology in teacher education community.*
2. *Research in education should use multiple measures for formative and summative assessment. Reliance solely on either phenomenological evidence or standardized test scores should be avoided.*

AT/IT Teacher Education

3. *Researchers should be encouraged to identify important new questions about technology in teacher education. Progress in the field will now permit such questions to be researched.*
4. *Researchers **should** synthesize **knowledge** gained **across PT3 projects around** the country **to** identify what **we have** learned and what **we know about successful** preservice preparation programs.*

AT/IT Teacher Education

5. *Researchers should collect data in ways that permit it to be disaggregated by single and multiple factors-e.g., LD Hispanic students-so that important differences in technology access and use can be identified and addressed.*
6. *Researchers should track P- graduating teachers into their induction year through year three and investigate the achievement of their students.*

The Changing Mode of Production of Special Education Teachers: What We Know About Who's Teaching Our Students

Michael S. Rosenberg
Johns Hopkins University

TED 2006

The Search For A Theme

- CSI?

The Search For A Theme

- CSI?
- Close To Home?

The Search For A Theme

- CSI?
- Close To Home?
- Deal or No Deal

The Search For A Theme

- CSI?
- Close To Home?
- Deal or No Deal
- Who Wants To Be A Millionaire?

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- Mosaic/Pieces of a Puzzle

Where We Were

- Shortage of special education teachers is chronic, long-term, and is worsening
- NCLB and IDEA encourage the development of teacher preparation alternatives
- In special education, we know little about how effective alternative routes are.
- What we do know suggests that not all alternative routes are created equal.
- Tendency to generalize from secondary content model to special education.

Where We Were

- **Effective ARC programs can produce competent teachers, often as competent as graduates of traditional teacher education programs**

- **Effective ARC programs are characterized by (Rosenberg & Sindelar, 2001; 2005):**
  - **Collaboration among program providers (LEA, SEA, IHEs)**
  - **Program of adequate length and intensity**
  - **Substantial, rigorous, and coherent programmatic content**
  - **Meaningful and frequent observation and mentoring**

Where We Are: AR Indexing Study

- Development of Program Lists (n=235)
- Final Sample (n=101)
- Areas of Survey
  - Program Infrastructure
  - Program length and intensity
  - Program Characteristics
  - Participant Characteristics

(Rosenberg, Boyer, Sindelar, & Misra, in press)

Where We Are: AR Indexing Study

- General Themes
  - High IHE Involvement
    - AR programs represent an effective means for IHEs to expand their offerings with little additional capital expenditure
  - Length of Preparation and Support
    - Regardless of length of time before assuming full teaching responsibilities most AR programs are more than 18 months

Where We Are: AR Indexing Study

- Participants
  - Mid-Career Changers – 46%
  - Recent Bachelors - 29%
    - 25% of Recent Bachelors Degrees are General Educators

What We Need To Consider

- Actual Contribution To Supply
  - Cannibalizing Existing Program Recruits
- Sense of Profession and Professionalism
- Cost Effectiveness
  - Consideration of Attrition and Quality
- Impact on IHE Faculty
  - Roles and Responsibilities of Faculty
- Most Important: Impact on Students

Break-Out Sessions

- Indexing Details
- Cost-Effectiveness Study

Cost Effectiveness and Teacher Preparation Routes

Paul Sindelar
University of Florida
Michael Rosenberg
Johns Hopkins University

Collaborators

- Economists from UF's Bureau of Economic and Business Research
  - David Denslow
  - Jim Dewey
  - Chifeng Dai (now at Southern Illinois U)

The Problem

- Persistent, severe special education teacher shortages
- Inadequate supply of new teachers from traditional teacher education programs
- Inadequate supply of teachers who are culturally and linguistically diverse
- Risk borne by high poverty schools

The Policy Context

- NCLB encourages states to develop alternatives to traditional teacher preparation, and alternative routes of all kinds are increasingly commonplace in SE
  (Rosenberg, Boyer, Sindelar, & Misra, in press)
- NCLB also encourages states to "streamline" pedagogical training and to move teachers into the classroom on a "fast track basis."

A Point of Logic

- NCLB: content mastery and verbal ability more important than pedagogical skill
  - Derives from secondary math/science context
- The same logic doesn't fit special education well at all
  - In teaching children who struggle to learn, effective pedagogy is essential

The Policy Context

- Persistent Unmet Demand + Facilitative Policy Context => Proliferation of Preparation Alternatives

- States are faced with the problem of deciding how best to allocate training funds among alternatives so as to maximize supply

Cost Effectiveness Model

- Cost Effectiveness =

  Total Costs/# Program Completers
- Key Variables
  - Costs
  - Output
  - Attrition
  - Quality
  - Unique Contribution to Supply

Costs and Attrition

- Initial costs (and *cost effectiveness)* is ameliorated by high retention and inflated by high attrition
- Programs with high initial costs may prove cost effective in the long run, provided that attrition is low
- Programs with low initial costs may prove cost ineffective in the long run if attrition is high

Costs and Attrition

- Program A: 20 graduates @ $10,000/graduate, 95% annual retention
- Program B: 20 graduates @ $7,500/graduate, 85% retention
- Which Program is more *cost effective* 5 years out?

Costs and Attrition

- Program A: initial cost of $200,000, with 15 survivors: $13,333/survivor
- Program B: initial cost of $150,000, with 9 survivors: $16,666/survivor

Unique Contribution to Supply

- If new programs do not contribute uniquely to supply, they only add to total cost of preparing a given workforce
- If new programs do not contribute uniquely to supply, they only diminish overall cost effectiveness

Project INVEST

- OSEP field-initiated project
- Purpose: To determine the costs and benefits of special education teacher preparation alternatives and to inform states' decision making about how best to allocate training funds to assure an adequate supply of diverse and competent special educators.

Phase I Data Collection

- Participant Recruitment
- Interviews with Program Directors
  - Conducted by telephone, recorded contemporaneously
  - Ask about monetary support, program and institutional features, and participants
- Analysis of Program Planners
  - Gen and SE foundations and methods, field experiences
- Cost Tables
  - Excel Workbook, completed independently
  - Instructional and administrative costs, progress through and attrition during the program

Phase II: Program Case Studies

- Teaching observations (Pathwise)
  - Teacher Quality
- Prospective study of teacher attrition
- Participant Interviews
  - What training options were available to you when you entered the program?
  - Unique contribution to supply

Tomorrow…

- Presenting findings from Phase I of the project, including
  - Common program types, our typology
  - Content analysis, by type
  - Preservice and on the job training, by type
  - Cost and costs/completer by type

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