

COPSSE
Pacific Coast
Research
Conference

San Diego, CA
February 4, 2005
www.copsse.org

Beginning Teacher Quality Study

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Teacher Quality Research

Teacher quality is on the forefront of policymakers' minds:

- Research demonstrates that teachers can make a difference in student achievement growth
 - Value-added assessment studies (Ross, Stringfield, Sanders, & Wright, 2003)
 - Exemplary teacher studies (Pressley & Allington, 1998; Wenglinsky, 2002)
 - Policy studies employing teacher characteristics (Darling-Hammond, 1999; Rice, 2003)
 - Classroom observation research (Haager, Gersten, Baker, & Graves, 2003)

Teacher Quality Research in Special Education

What do we know?

- Early process-product research linking discrete teaching behaviors with student achievement gains (Sindelar, Smith, Harriman, Hale, & Wilson, 1986)
- SPeNSE and SEELS research linking aspects of teacher quality to student achievement

Teacher Quality Research in Special Education

What do we need?

- Studies describing practices of beginning special educators
- Studies linking the practices of beginning special educators to student outcomes

Teacher Quality Research in Special Education

Why is this important?

- In a policy context that emphasizes student outcomes and questions teacher preparation, we need to know:
 - Relationships between teacher preparation, teacher effectiveness, and student outcomes
 - But first, we need to define and assess what effective beginning special educators do

Teacher Quality Research in Special Education

What are the challenges to such research?

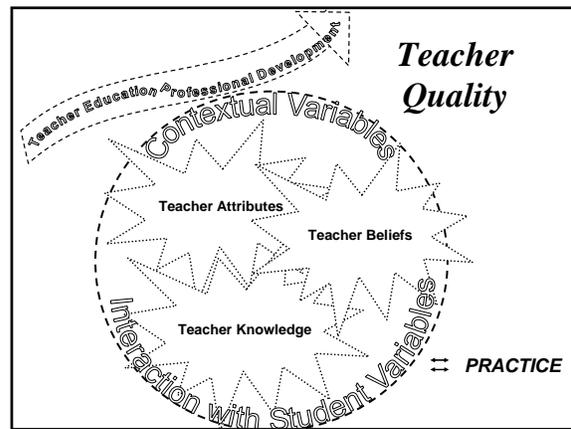
- Roles and responsibilities of special education teachers vary considerably
- Multiple sources contributing to instruction
 - In our study, students spent, on average, 17% of their day in special education (range was 8% to 22%)
- Issues of power necessitate collapsing teachers across grade levels

Teacher Quality Research in Special Education

- Assessments that are sufficiently sensitive, standardized, and individually administered
- Student variability in achievement gains
 - In our study, the confidence interval for mean gain scores on CBM for 12 students was 97 units, 168 units for 4 students.

Teacher Quality Research in Special Education

- *Purpose of this study:*
 - Define and assess what beginning teacher quality is for high incidence disabilities
- *Research question:*
 - What are the classroom practices, content knowledge, and beliefs of effective special education teachers providing instruction in reading?



Teacher Beliefs

- Self-efficacy
- Beliefs about teaching and learning
- Beliefs about struggling readers
- Beliefs about role of special education teacher
- Beliefs about special education service delivery
- Beliefs about role of curriculum

Personal Attributes/ Affective Variables

- Problem-solving skills
- Sense of commitment/responsibility
- Relentlessness
- Resourcefulness
- Sense of urgency
- Interpersonal/collaborative skills
- Affect

Teacher Knowledge (examples)

- General pedagogical knowledge:
 - Knowledge of theories of teaching and learning
 - Classroom management
- Content knowledge:
 - Concepts of print
 - Phonological awareness
 - Alphabetic principle
 - Structural analysis
 - Sequence and stages of reading development
 - Vocabulary and comprehension

- Knowledge of learners and learning contexts:
 - Knowledge of reading disabilities
 - Knowledge of English language learner issues
 - Knowledge of socio-cultural factors
 - Knowledge of motivational factors
- Pedagogical content knowledge:
 - Assessment
 - Planning
 - Instructional formats
 - Instructional techniques and activities
 - Reading curriculum and instructional materials

Methodology

Participants

- Beginning Special Education Teachers (N = 34)
 - Within first three years of teaching
 - Hold credential, or within a year of completing alternative route
 - 3 states
 - multiple settings, delivery models and curriculum
- Students with Learning Disabilities (N = 173)
 - 3rd to 5th grade
 - receive special education instruction for reading and have IEP goals in reading
 - Minimum of 3 students per teacher

Teacher Demographics

(for teachers included in all analyses)

	Full Credential	Temporary/Emergency/ Other
Florida	17	1
California	5	3
Colorado	4	4

	Self-contained	Resource	Inclusive
Florida	3	14	1
California	0	7	1
Colorado	0	7	1

Student Demographics

Total Number 173 (FL: 97, CO: 32, CA: 44)

Gender

Male: 99, Female: 73, Unknown: 1

Ethnicity

White	African American	Hispanic	Other	Unknown
80	28	54	9	2

SES

Free/Reduced Lunch	Paid Lunch	Unknown
139	22	12

Teacher Quality Research in Special Education

- Student Achievement Measures
 - Oral reading rates on CBM passages at the 2nd, 3rd, and 4th grade levels
 - Woodcock Reading Mastery Word Identification and Word Attack Subtests
 - Gray Oral Reading Test (posttest only, comprehension subtest only)

Teacher Measures

- Special Education Observation Instrument: Features of Effective Reading Instruction in Special Education (Items adopted from the English Language Learner Observation Instrument: Haager, Gersten, Baker, & Graves, 2003)
- Special Education Beginning Teacher Survey: Influences on Practice
- Content Knowledge for Teaching Reading Questionnaire (Study of Instruction Improvement: Ball & Phelps, 2002)
- Teacher Interviews

Observation Measure

- Adapted from the English-Language Learner Classroom Observation Instrument
- Developed based on research on effective reading instruction, observational studies of reading instruction for students with significant reading problems (e.g., Stanovich & Jordan, 1998), and research on components of an effective reading program

Primary Sources

- Instructional Practices Content:
 - Englert, C. (1984)
 - Stanovich, P. J., & Jordan, A. (1998)
- English Language Development Content:
 - Tikunoff, Ward, van Broekhuizen, Romero, Castaneda, Lucas & Katz, 1991)
- Reading Content:
 - California Reading/Language Arts Framework
 - Research literature

Sources for ELLCOI

- Haager, D., Gersten, R., Baker, S., & Graves, A. (2003). The English-Language Learner Classroom Observation Instrument: Observations of Beginning Reading Instruction in Urban Schools (p. 111-144). In S.R. Vaughn & K.L. Briggs (Eds.), *Reading in the Classroom: Systems for Observing Teaching and Learning*. Baltimore MD: Brookes Publishing.
- Gersten, R., Baker, S.K., Haager, D., & Graves, A. W. (in press). Exploring the role of teaching quality in predicting reading outcomes for first grade English learners: A classroom observational study. Submitted to *Remedial and Special Education*.
- Graves, A. W., Gersten, R., & Haager, D. (2004). Literacy instruction in multiple-language first grade classrooms: Linking student outcomes to observed instructional practice. *Learning Disabilities Research and Practice*, 19 (4), 262-272
- Baker, S., Gersten R., Haager, D., Goldenberg, C., & Dingle, M. (in preparation). The Relationship between observed teaching practice and growth in reading in first graders who are English learners.

Adaptations for this study

- Series of revisions over past two years using a work group model, changes based on pilot and year 1 field notes
 - Items related to ELD were omitted, and a section on classroom management was added
 - In concept, instrument content did not change. Adaptations included rearranging, rephrasing or merging items
 - Some items were rearranged in instructional practices section to follow the instructional cycle and incorporate adjusting for individual needs
 - We expanded the section on comprehension instruction
 - We added descriptive questions on the classroom environment and structure

Subscales

- Subscales based on ELLCOI item grouping:
 - Instructional Practices
 - General Instructional Environment
 - Phonological Awareness
 - Word Study
 - Fluency
 - Vocabulary
 - Comprehension
 - Classroom Management
- Instrument had 27 items rated using a Likert scale (coefficient alpha = .92)

Example from Observation Instrument

4. Provides support to students who need assistance
- Asks students easier questions to get at the bigger concept
 - Reminds students of a rule or strategy to use
 - Teacher provides partial response
 - Breaks the task down when students are struggling
 - Re-explains skills and strategies to students

1 2 3 4
Low Moderate High

Not Observed

Observation Procedures

- Observations
 - Observation of complete reading lesson, on 2 to 4 separate occasions. Times ranged from 1-3 hours per observation
 - Anecdotal field notes used to complete observation tool
 - Interrater reliability established with one anchor person at each site > 80% prior to observations

Instructional Practices

Selects and incorporates students' responses, ideas, examples, and experiences into the lesson.

- Connects personal experiences into lesson content.
- Makes instruction relevant and meaningful to students.

Instructional Practices

Organizes instruction in ways that allow most students to respond.

- Avoids multiple questions when students don't immediately respond.
- Allows time for students to process and doesn't immediately give the answer.
- Calls on multiple students.

Instructional Practices

Provides support to students who need assistance.

- Reminds students of a rule or strategy to use.
- Breaks the task down when students are struggling.
- Re-explains skills and strategies to students.

Instructional Practices

Gives feedback on academic performances (i.e., clarifies, reinforces).

Instructional Practices

Provides sufficient and quality practice.

- The task reinforces concepts taught.
- The task is the appropriate level and length.
- The teacher provides clear directions, checking for understanding, and circulates, if appropriate.

General Instructional Environment

Extent to which students are highly engaged during literacy activities.

General Instructional Environment

Fosters students motivation and interest.

- Shows enthusiasm.
- Uses an interesting learning format.

General Instructional Environment

Provides continuous and intensive instruction.

Comprehension

Provides explicit instruction in comprehension skills and strategies.

- Models/explains comprehension skills and strategies.
- Thinks aloud for students in order to demonstrate strategies or skills.

Comprehension

Prompts and cues students to use comprehension strategies and skills.

- Reminds students to use strategies.
- Models metacognition.

Comprehension

Effectively uses teacher facilitated discussions to build comprehension.

- Asks students to provide evidence for their responses (asking how and why).

Teacher Knowledge Survey

- Total number of items (n=119)
- 3 subscales were good discriminators in MU study and used in this study
 - Comprehension/Knowledge of Content ($\alpha=.74$)
 - Comprehension/Knowledge of Teaching and Content ($\alpha=.67$)
 - Word Analysis/Knowledge of Content ($\alpha=.82$)

Teacher Quality Research in Special Education

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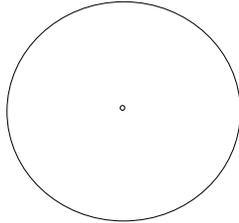
Teacher Interviews

- Questions about the lesson we observed
- Teacher preparation (including pie charts)
- Beliefs (including vignettes)
 - Self-efficacy
 - Beliefs about learning
 - Beliefs about teaching reading
 - Beliefs about the role of the special education teacher
- Knowledge
 - General pedagogical knowledge
 - Knowledge of learners and learning contexts
 - Pedagogical content knowledge
- Practice (pie chart)

Sample “Pie Chart” Question

- Where did you get your ideas/practices about how to teach reading in Special Education? Check off the items we have provided and then add any others we may not have included.
 - Teacher Education program coursework
 - Teacher Education program Student Teaching (if applicable)
 - Other teachers at your school acting as mentors
 - Professional development in your school or district
 - Your own experiences as a student K-12
 - Your own process of learning to read
 - Feedback from your students/Trial and Error
 - Curriculum Materials
 -
 -

Now imagine that you are going to make a pie chart that reflects the relative impact of these sources on your repertoire in teaching reading. Draw lines on the circle below to show the proportion of significance of each of the above items.



Findings: Quantitative All Sites

Teacher Quality Research in Special Education

- Subscale Means and Standard Deviations
 - Instructional Practices (2.59; .91)
 - General Instructional Environment (2.84; .79)
 - Phonological Awareness (.51; 1.19; dropped)
 - Word Study (1.69; 1.30)
 - Fluency (1.36; 1.44)
 - Vocabulary (1.58; 1.36)
 - Comprehension (2.0; 1.37)
 - Classroom Management (2.92; .85)

Correlations for Observation Instrument

Observation Measure	CBM	WID	WA
Holistic TQ	.46*	.37	-.07
IP	.26	.16	
GIE	.44*	.25	-.10
WS	.06	.22	.07
FLU	.21	.33	-.10
VOC	.15	.18	-.20
COMP	.39	.27	-.01
CM	.60*	.30	-.05

Within Site Correlations

Site	CBM (2nd grade)	WID	WA
Florida	.39	.61	.11
California	.37	-.13	-.07
Colorado	.81	.44	-.55

Correlations Between TQ and Teacher Knowledge

Comprehension/ Knowledge of Content	Comprehension/ Knowledge of Teach and Content	Word Analysis/ Knowledge of Content
.25	.28	.45*

Qualitative/Descriptive Findings: Colorado

Colorado Teachers								
Name	Cert.	Program	Years Tchg.	Knowledge Survey % correct	Observation Overall Teacher Quality	Observation Classroom Management	CBM Rank	WID Rank
1	Alt.	Resource	2	77%	2.5	3	7	7
2	Alt.	Resource	1	69%	2	2.5	6	8
3	Reg.	Resource	3	NA	3.0	4.0	2	6
4	Alt.	Resource	3	63%	2.5	3.5	NA	NA
5	Reg.	Self-con.	2	47%	3.5	3.5	NA	NA
6	Reg.	Resource	2	64%	3	3.5	NA	NA
7	Reg.	Resource	3	65%	2.5	3.5	4	3
8	Reg.	Resource	2	82%	3.5	3.5	3	2
9	Alt.	Resource	2	68%	3	3.5	5	5
10	Alt.	Resource	3	NA	2	3	NA	NA
11	Alt.	Resource	3	73%	1.5	1.5	8	4
12	Reg.	Inclusion	3	72%	3.5	3.5	1	1

Beliefs about Learning

- Teachers were asked: "Whose beliefs most closely align with your own?"
 - Teacher A believes that children learn best when they are taught a sequence of skills that start from the simplest skills and get more and more complex. So, in her teaching, she follows a curriculum that helps build skills in a systematic way....
 - Teacher B believes that children learn by connecting new information to past experiences and prior knowledge... When she introduces a new topic, she spends a lot of time building up their background knowledge about it...
 - Teacher C believes that learning is a social process, and that it does not occur just "in-the-head" of the student... She, therefore, places great emphasis on building a classroom community... She also tries to locate tasks that seem meaningful or authentic to the children...

- 4 selected Teacher A
- 5 selected Teacher B
- 2 said they were a combination
- Teachers observed practices "matched" their beliefs about teaching and learning

Beliefs about their Role

- Teachers were given this vignette and asked: "If Maria was your student, which aspect of her reading would you prioritize?"
 - Maria is in fourth-grade, but she reads at a first-grade level. In your work with her, you have noticed that she cannot read words that you would expect most first-graders to read. At the same time, she is expected to work from challenging grade-level texts in her class. Her teacher provides her with some adaptations so that the work of actually reading these challenging texts does not fall on her alone, that is, she is typically supported in reading these texts by either a peer, or a paraprofessional, or the teacher. Despite this help, Maria still struggles with making sense of the text in a way that shows that she really understands it.

- 5 teachers prioritized comprehension
- 6 teachers prioritized word study

Teacher Knowledge

- In comparison with GE teachers, special education teachers say they have specialized knowledge about the learner
 - They know the learning needs of students with disabilities and the “learning process”
 - They better understand affective needs
 - But they lack information about English language learners
- Special education teachers say they have a more sophisticated understanding of instruction (but general education teachers know the GE curriculum better)
 - How to “break things down”
 - How to provide differentiated instruction
 - How to modify or adapt
- Special education teachers say they need to know more about working with families and other professionals, assessment, and the “hidden” aspects of their profession.

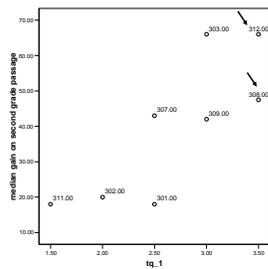
Differences between Alternative and Regular Certification Teachers

- Regular certified teachers had higher observation scores overall, but not higher scores on the knowledge measure.
- Regular certified teachers were more likely to give more sophisticated responses, with more technical language to interview questions (with one exception).
- Alternative certified teachers were more likely to say they felt unprepared to teach reading (though regular certified teachers said this also).
- Alternative certification teachers were more likely to give atypical responses (with one exception), for example:
 - In response to a question about what distinguishes teachers from non-teachers:
 - ...If you think about it as a container, and each kid is holding a container and you think “how much information am I going to put in it? Or am I going to ignore the fact that they’re holding it.”

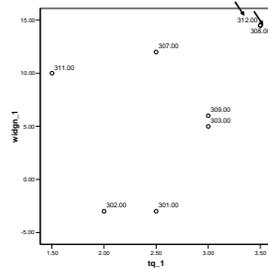
Two Teachers: “12” and “8”

Colorado

Second Grade CBM vs. TQ (r = .807)

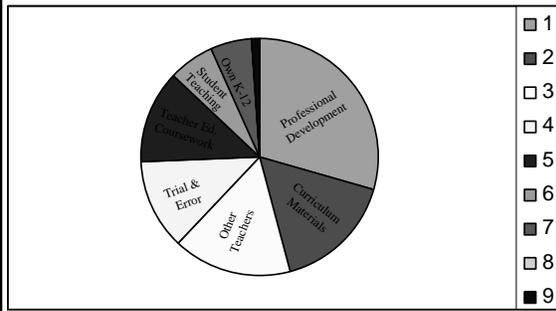


WID vs. TQ (r = .444)



- 12—Barbara (3rd year)
 - 72% on Teacher Knowledge
 - 3.5 on Observation
 - 3.5 in Classroom Management
 - Phonemic Awareness Not Observed
 - Word Study Not Observed
 - 3.0 in Vocabulary
 - 2.5 in Fluency
 - 4.0 in Comprehension
 - Regular Certification
 - Inclusion Classroom
 - Focus on Comprehension
- 8—Catherine (2nd year)
 - 82% on Teacher Knowledge
 - 3.5 on Observation
 - 3.5 in Classroom Management
 - 4.0 in Phonemic Awareness
 - 3.5 in Word Study
 - Vocabulary Not Observed
 - Fluency Not Observed
 - Comprehension Not Obs.
 - Regular Certification
 - Resource Room
 - Focus on Word Study

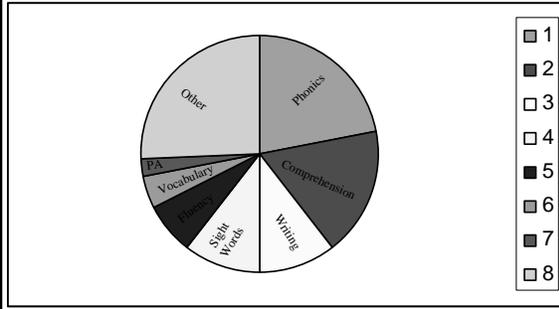
Where do beginning special education teachers say they learned to teach reading?



Where do beginning special education teachers say they learned to teach reading?

Item	Mean %	Range (in %)
1 Professional development	29	5-75
2 Curriculum materials	16	0-35
3 Other teachers at your school	16	0-45
4 Trial and error	13	0-30
5 Teacher education program coursework	13	0-45
6 Student teaching	6	0-35
7 Own K-12 experiences	6	0-25
8 Your own process of learning to read	0+	0-1
9 Other	1	--

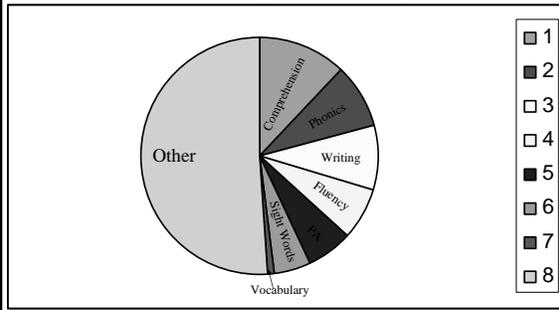
What aspects of reading do beginning special education teachers say they teach?



What aspects of reading do beginning special education teachers say they teach?

Item	Mean %	Range (in %)
1 Phonics	22	0-50
2 Comprehension	18	0-60
3 Writing	11	0-20
4 Sight words	11	0-25
5 Fluency	7	0-20
6 Vocabulary	4	0-10
7 Phonemic awareness	3	0-20
8 Other	27	--

Of what beginning special education teachers teach, what proportion of their time in teacher education was spent learning these?



Of what beginning special education teachers teach, what proportion of their time in teacher education was spent learning these?

Item	Mean %	Range (in %)
1 Comprehension	12	0-25
2 Phonics	9	0-40
3 Writing	9	0-25
4 Fluency	7	0-25
5 Phonemic awareness	6	0-40
6 Sight words	5	0-25
7 Vocabulary	1	0-5
8 Other	51	--

Understanding the Influences of Preparation and Context on Beginning Special Education Teachers: Florida

Purpose of the Study

- To identify the attributes of accomplished beginners that contribute to effective teaching practices
- To develop an understanding of the role of preparation in a beginner's ability to practice
- To identify contextual features that promote effective practice

Methodology

Participants

- Seven special education teachers with 1-3 years of experience teaching reading to 3-5 grade students
- Participants' Preparation
 - All from accredited institutions
 - Three highest ranked teachers had master's degree
 - Two with reading endorsements
 - Number of reading courses ranged from 1-4

Methodology

Context

- 2 in co-teaching situation, 5 in resource room
- Class size varied from 4-25 students
- All schools were urban or rural poverty (41% - 79% poverty rate)
- All rated their administrative support as above average
- Four teachers used highly structured curriculum
- Context varied considerably within and between districts

Methodology

• Data collected

- 23 classroom observations - multiple observers
 - 3-4 observations per teacher within 6 months
- field notes on observations
- preparation survey data (Likert scale)
- interview data on current practice, preparation and context

Methodology

Using the COPSSE Observation Instrument

- Classroom practice scores were ranked from 1-4
 - Struggling Beginners vs. Accomplished Beginners

– 1.5 - two teachers	1st year
– 2.5 - one teacher	2nd year
– 3.0 - two teachers	1st and 3rd year
– 3.5 - one teacher	2nd year
– 4.0 - one teacher	2nd year
- Teacher scores on student engagement items were highly correlated to their overall quality score

Methodology

• Qualitative analysis

- Evaluated teachers by ranking them in order of observation scores
- Used inductive analysis to code responses into categories
- Integrated concepts and categories around preparation, context, and teacher attributes

• Trustworthiness determined through

- Multiple observers, multiple observations, multiple analysts
- Peer debriefing

Findings - Personal Attributes

Accomplished beginners can be distinguished from struggling beginners - they are more reflective, resourceful, and relentless

Personal Attributes - Reflective

- Theme 1: Reflective
 - They focus less on themselves and more on student learning
 - Reflection regarding instruction is thoughtful and includes a high level of specificity - it is specific to what they can do as the teacher

Personal Attributes - Resourceful

- Theme 2: Resourceful
 - More accomplished beginners seek out information, materials, and resources

Personal Attributes - Relentless

- Theme 3: Relentless
 - More accomplished beginners find ways to enact knowledge and practice with a no excuses approach

Findings - Preparation

Preparation influences the quality of instruction for beginners

- Theme 1: Pedagogical knowledge in special education and reading content knowledge are both critical components
- Theme 2: Opportunities to practice and apply information to the classroom influences a beginner's sense of preparedness and practice
- Theme 3: Preparation in classroom management influences a beginner's ability to deliver instruction

Preparation - Theme 1

Theme 1: Pedagogical knowledge in special education and reading content knowledge are both critical components

- All of our beginners feel well prepared in generic special education
- All beginners feel unprepared to teach reading, lacking comprehensive knowledge to address the needs of students with reading disabilities
- Gaps in reading knowledge result in ineffective, misinformed practice

Preparation - Theme 2

Theme 2: Opportunities to practice and apply information to the classroom influences a beginner's sense of preparedness

- The most valuable experiences in college classrooms and field experiences provided opportunities to practice
- Cohesive job match between internships and teaching job promotes the beginner's sense of preparedness
- Negative perceptions about inadequate preparation is expressed as "too much theory"

Preparation - Theme 3

- Theme 3: Preparation in classroom management influences a beginner's ability to deliver instruction
 - Struggling teachers equated their inability to manage their classrooms with lack of preparation
 - The lack of a well-practiced routines and management results in more emphasis on regulating the classroom rather than promoting learning

Findings - Context

Working conditions influence the nature of beginning teacher instruction

- Theme 1: Access to curriculum and professional development influenced instruction
- Theme 2: Service delivery models influence a teacher's ability to provide effective instruction
- Theme 3: General administrative and collegial support play a necessary, but not sufficient role

Context - Theme 1

- Theme 1: Access to curriculum and professional development influences instruction
 - Programmed curricula supports beginning teachers' instruction
 - Materials and training (or lack of) affected the nature of the instruction

Context - Theme 2

- Theme 2: Service delivery models influence a teacher's ability to provide effective instruction
 - The number of students beginners serve influences a beginner's ability to develop stronger practices
 - Opportunities to work in partnerships influenced beginners

Context - Theme 3

- Theme 3: General administrative and collegial support play a necessary, but not sufficient role in developing beginning teachers
 - Well-crafted instructionally driven support provided opportunities for real professional growth

A Positive Note

- "I figured I was trained well enough but the first half of the year stressed me out with behavior no end. I thought at the end of the semester that maybe I was not cut out to teach. At the end of the year, I know this is what I want to do and that is a great surprise. I can do it... I can do it." (Tears and a smile)

What We Learned

- What special education teachers do makes a difference
- More knowledgeable teachers are more likely to engage in more effective classroom practices
- Beginners provide glimpses of expertise, suggesting the need for on-going learning on the job
- Beginning teachers are more sophisticated in their general practices and classroom management than reading practices

What We Learned

- Preparation matters - both special education pedagogy and content/pedagogical knowledge of reading
- Our beginners mirrored what we know about general education beginners highlighted in the literature
- Preparation, context, and personal attributes seem to interact to strengthen or inhibit a beginning teacher's opportunity to thrive

What We Learned

- Preparation should include special education pedagogy, content knowledge pedagogy in reading, classroom management and opportunities to apply learning
- Contextual support impacts a beginner's ability to thrive (e.g., structured curriculum, instructionally-focused administrative support, and opportunities to grow professionally)

Implications

- If teachers clearly agree on the important elements of preparation, what does this tell the field about the effectiveness of fast track programs who can not provide intensive training in pedagogical content knowledge in reading, special education pedagogy, classroom management, and opportunities to practice?

Implications

- How should we best prepare beginning special education teachers to provide reading instruction?
 - Moreover, whose responsibility is it to provide this preparation?
- What do our findings mean for other aspects of special education instruction?
 - For example, would similar findings hold for special educators teaching mathematics, science, or social studies?

Implications

- What do our findings mean for studying teacher education?
 - More dependent measures are needed for determining effectiveness of teacher preparation, particularly in large scale studies
 - Classroom observation is more realistic for smaller, in-depth work

Next Steps

- Replicate quantitative study with a larger pool of teachers, beginners and experienced (n=60)
- Analyze the next set of interview data and observation data from 2003-2004 teachers with knowledge scores in reading and link to student achievement data
- Look for relationships between the new teacher data set and the themes that emerged from this glimpse into beginners