Defining Teacher Quality in Special Education: Understanding the Practices, Knowledge and Beliefs of Effective Special Education Teachers

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Teacher Quality Research

Teacher quality matters:

- Research demonstrates that teachers can make a difference in student achievement growth and motivation:
  - 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; Scanlon et al., 2005)
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What do we know?

- Early process-product research linking discrete teaching behaviors with student achievement gains (Leinhardt, Zigmond, & Cooley, 1980; Sindelar, Smith, Harriman, Hale, & Wilson, 1986)
  - Not connected with pedagogical content knowledge
  - Provides little insights into the beliefs and attitudes behind effective practice
- SPeNSE and SEELS research linking aspects of teacher quality to CURRENT student achievement
  - Relies on self-report data
  - Provides broad understandings of teacher quality characteristics
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What do we need?

- A richer conceptualization of teacher quality in special education so that research, practice and policy about highly qualified is complimentary
- Valid and reliable measurement that can be used to assess the dimensions of teacher quality
- Studies linking dimensions of special education teacher quality to each other, student achievement, and preparation and professional development opportunities
What are the challenges to such research?

- Roles and responsibilities of special education teachers vary considerably
- Curriculum and school/district contexts vary dramatically
- Multiple sources contributing to instruction
  - *In our study students spent 30-135 minutes a day in special education*
- Case loads of most special education teachers cut across grade levels
**Teacher Quality Research in Special Education**

*What are the challenges to such research?*

- Instructional objectives in reading varied from teacher to teacher.
- Identifying assessments that are sufficiently sensitive, standardized, and individually administered.
- Lack of understanding of what a good gain is for students with disabilities at various achievement levels.
- Student variability in achievement gains in reading within the same special education class.
  - *In one study, the confidence interval for mean gain scores on oral reading fluency for 12 students was 97 words per minute, or 168 words per minute for 4 students.*
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- **Purpose of our research:**
  - Define dimensions of special education teacher quality and validate assessments of these dimensions
    - First study examined beginning special educators
    - Second study examined special educators across the experience continuum

- **Research question:**
  - What are the relationships between observed classroom practice, content knowledge, beliefs, and reading growth of intermediate grade students taught by special education teachers?
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• Supporting research questions:
  • What role do school environments, particularly professional development opportunities, play in the reading achievement gains of students with disabilities?
  • What are the influences on beginning special education teachers’ practice?
Teacher Attributes
Teacher Beliefs
Teacher Knowledge

Contextual Variables
Interaction with Student Variables

Teacher Education Professional Development

Teacher Quality

PRACTICE
Methodology
Participants

First Study:
• 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

Second Study:
• Special Education Classrooms (N = 60)
  • Experienced teachers (N=53) and beginners (N=9)
    • Teachers N=62
  • 3 states
  • Multiple settings, delivery models and curriculum
Participants

- **Students with Learning Disabilities**
  - Majority of students were SLD (Specific Learning Disabilities)
  - 3rd to 5th grade
  - Receive special education instruction for reading and have IEP goals in reading
  - Minimum of 3 students per teacher
    - Florida: 3 to 13
    - California: 4 to 12
    - Colorado: 3 to 8
  - First study: 173 students with SLD participated
  - Second study: 369 students with SLD participated
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• Student Achievement Measures
  • Oral reading rates on CBM passages at the 1st, 2nd, and 3rd grade levels
  • Woodcock Reading Mastery Word Identification and Word Attack Subtests
  • Gray Oral Reading Test
Teacher Measures

- Reading Instruction in Special Education (Items adopted from the English Language Learner Observation Instrument: Baker, Gersten, Haager, Goldenberg, & Graves, 1999)
- TORP (Theoretical Orientation to Reading Profile) (Deford, 1995)
- Special Education Influences on Practices Survey
- Content Knowledge for Teaching Reading Questionnaire (Ball & Phelps, 2002)
- Teacher Interviews
Observation Instrument

Subscales

a) Instructional Practices
b) General Instructional Environment
c) Phonemic Awareness: Dropped from this analysis
d) Word study
e) Fluency
f) Vocabulary
g) Comprehension
h) Classroom Management

- Instrument had 28 items rated using a Likert scale (coefficient alpha = .98)
• 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

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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
    • Total: mean 91.06%; range 71% - 100%
    • Florida: mean 94.81%; range 89% -100%
    • California: mean 91.6%; range 85% - 96%
    • Colorado: mean 86.77%; range 71% - 96%
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• 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 (α=.74)
    • Comprehension/Knowledge of Teaching and Content (α=.67)
    • Word Analysis/Knowledge of Content (α=.82)
Influence on Teacher Practice Survey

- Scales
  - Content of learning opportunities
  - Opportunities for active learning
  - Coherence of learning opportunities
  - Relevance of learning opportunities
  - Learning from the curriculum
  - Schoolwide efforts
  - Collective teacher practice
  - Properties of school climate
Findings: Beginning Special Educators
Teachers’ practice was related to CBM reading gains

- Correlational analyses reveal relationships between 2nd grade CBM gains and
  - Overall classroom practice
  - General instructional environment
  - Classroom management

Teachers’ practice was related to knowledge, particularly of word analysis instruction
Influences on Practice

- From interviews with beginning teachers, we learned:
Findings: Teachers Across the Experience Spectrum
Mean Scores on Practice
Teacher Practice Matters

- Hierarchical Linear Modeling showed that:
  - after controlling for site and SES, overall classroom practice had a:
    - Large effect on WA gains ($R^2 = .343$, $p = .079$)
    - Moderate to large effect on WID gains ($R^2 = .159$, $p = .005$)
    - Moderate effect on CBM-3 gains ($R^2 = .064$, $p = .109$)
Effect of teacher practice becomes more obvious with time

- Correlations between overall classroom practice and student achievement increase with time spent in special education

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Relationships Vary Across Sites
However, . . .

context also matters, a lot!
School Context Matters

• After controlling for site and SES, coherence of learning opportunities had a large effect on GORT-S gains (R² = .349, p = .000)

• Coherence: To what extent are the reading curriculum and materials you have learned in the past several years:
  • Consistent with your goals for improving reading instruction
  • Based on teacher education coursework
School Context Matters

• After controlling for site and SES, schoolwide efforts to improve reading had a moderate to large effect on GORT-S gains ($R^2 = .141$, $p = .019$)

• Schoolwide efforts: To what extent do you agree or disagree with the following statements about efforts at your school to improve reading:
  • At this school, resources are used in ways to provide intensive reading instruction to struggling readers, including those with disabilities
  • Teachers are encouraged to continually learn and seek out new ideas about teaching reading
Conclusions

- Quality of the special education teachers’ reading instruction matters in securing student achievement gains, particularly at the basic skill level.
- School context seems to have a strong influence on student achievement, particularly comprehension gains.
Conclusions

- The majority of teachers demonstrated a need to strengthen reading instruction.
- Time spent in special education is an important factor in establishing relationships between student achievement and teacher quality.
- More sensitive, standardized student assessments are needed.
- Better understand the role that curriculum might play in evaluating teacher quality.