National Center for Research on Rural Education (R²Ed)

Housed in the Nebraska Center for Research on Children, Youth, Families and Schools (CYFS)

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Co-Directors: Drs. Todd Glover, Gwen Nugent, Gina Kunz, Jim Bovaird
Brief Overview of R\textsuperscript{2}Ed

**Goal:**

To advance and support the scientific foundation for education in rural settings

**Immediate Aims:**

- ✓ To identify effective practices that lead to the provision of evidence-based interventions for reading and science instruction
- ✓ To identify effective school, teacher, and family supports to help advance student learning
- ✓ To create and provide an infrastructure for research and outreach for the field
Organization of $R^2$Ed

- National Center for Research on Rural Education ($R^2$Ed)
  - S. Sheridan, Director

- Steering Committee

- Core Leadership Team
  - Research Operations
    - T. Glover, Director
  - Statistics and Methodology
    - J. Bovaird, Director
  - Rural Education Leadership Institute
    - G. Nugent, Director
  - Rural Outreach and Coordination
    - G. Kunz, Director

- Advisory Boards:
  - National Research Advisory Board
  - NE State Leadership Advisory Board
  - National Leadership Advisory Board
Shared Leadership Initiatives: Outside In and Inside Out

**Outside In**
- “Listen and Learn”
- Coalesce a Knowledge Base

**Inside Out**
- Share a Knowledge Base
- Develop Future Leaders in Rural Education Research
Outside In:
Listening, Learning

Needs Identified:

• Evidence for teacher support
• Distance education technologies
• Strong connections with leadership
• Effective methods of dissemination to bridge the gap between research and practice
Outside In:
Coalescing a Knowledge Base

Expert Consultants/Visiting Professors

• Creating Rural Connections Series
  Dr. Carolyn Denton
    ✓ Effective Coaching
    ✓ Coaching in Rural Schools

• Methodology Series: Randomized Trials
  Dr. Peggy McCardle: NICHD
  Dr. David Cordray: Vanderbilt University
  Dr. Larry Hedges: Northwestern University
Inside Out:
Sharing a Knowledge Base

_Rural Center Website_
www.r2ed.unl.edu

_R²Ed Research Publications_

• Targeted Research Reviews
  ✓ Professional Development for Teachers in Rural Settings
  ✓ Family-School Connections in Rural Settings
  ✓ Extended Learning: Out of School Time Programs in Rural Settings
Inside Out: Sharing a Knowledge Base

R²Ed Research Publications

- Research Digests (select examples):
  - Parent and peer correlates of prosocial development in rural adolescents: A longitudinal study (Carlo, Crockett, Randall, & Roesch, 2007)
  - Individual and familial stressors among rural Nebraskan, bilingual paraprofessional educators (Dalla, Lopez, Jones, & Xia, 2006)
Inside Out: Developing Future Research Leaders

- Post-doctoral Research Fellowship Program
  - Danielle Parisi
    - Focus: Data-based decision making
    - Background: School Psychology
  - Sue Ellen DeChenne
    - Focus: Guided science inquiry and coaching
    - Background: Science Education
  - Ji Hoon Ryoo
    - Focus: Quantitative methods
    - Background: Statistics and Research Methods
  - Andy Garbacz
    - Focus: Family-school partnerships
    - Background: School Psychology
Growing a Research Profile

• Professional Development: Rural & Non-rural
• Project READERS
• Coaching Science Inquiry: Rural Schools (CSI: Rural Schools)
• CBC in Rural Communities
• Rural Language and Literacy Connections
• Mountain Prairie Upgrade Partnership-Early Childhood-Deaf Education (MPUP-EC)
• Arts in Education
Professional Development Identification Study: Current Progress

Introduction/Rationale

• Although existing literature on PD, little is known about:
  • characteristics of PD in rural schools
  • impact of PD characteristics on rural teachers’ perceptions, knowledge, and practice

• Addresses critical gap by investigating:
  • variations in existing rural PD practices
  • differences in PD practices between rural and non-rural settings
  • potential influence of PD aspects on rural teachers’ knowledge, perceptions, and instructional practice
  • moderating effects of context and teacher variables
Professional Development Identification Study: Current Progress

Introduction/Rationale (cont.)

- Investigates PD in 4 areas:
  - Reading
  - Science inquiry
  - Mathematics instruction
  - Teachers’ use of data to inform reading instruction/intervention

- Findings useful for informing:
  - future PD in rural schools
  - ongoing reach on PD
Professional Development
Identification Study: Current Progress

Participants

- Randomly selected from national NCES database
- Anticipate final sample of approximately 800 rural, 400 town, and 400 suburban/urban school teachers (late fall, 2010)
- Within each locale, sample was stratified by school size
Professional Development Identification Study: Current Progress

Procedure

• Surveys mailed in April and September of 2010
• Small incentives were provided to teachers (pen, sticky notes, and tote bag)
• Surveys returned via prepaid envelope
• Teachers responded to questions about their best professional development experience within the past year pertaining to one of four content areas
Professional Development Identification Study: Current Progress

Measures

• Demographic Information
  • E.g., teaching assignment, degrees obtained, class size, class organization

• Characteristics of PD
  • E.g., topical focus, format, PD leader, total hours, time span, distance travelled, use of demonstration/modeling

• Perceptions
  • E.g., perceived importance and knowledge of content-specific instructional topics/practices
Professional Development Identification Study: Current Progress

Measures (cont.)

• Instructional Content Knowledge
  • *Teacher Knowledge of Reading and Reading Practices* (Carlisle, Johnson, Phelps, & Rowan, 2008);
  • *Content Knowledge for Teaching Mathematics* (Learning Mathematics for Teaching, 2006)
  • *Data-based Decision Making Knowledge for Reading*
  • *Science Inquiry Instructional Knowledge*

• Reported Practice
  • extent to which content-specific instructional topics are practiced in classroom
Professional Development Identification Study: Current Progress

Pilot Psychometric Investigation

• Purpose
  • To develop and validate two knowledge measures:
    • Data-based Decision Making Knowledge for Reading
    • Science Inquiry Instructional Knowledge

• Participants
  • 371 elementary school teachers from multiple U.S. states

• Procedure
  • Initial items were developed based on concept maps
  • Conducted classical and IRT analyses to refine items
Professional Development Identification Study: Current Progress

Pilot Psychometric Investigation (cont.)

- Results
  - For both measures, original items yielded moderate internal consistency with wide variability in item difficulty and discrimination
  - Item analyses and deletion resulted in:
    - changing the measures’ appropriateness from \(~1.5\) to 2 SD below average to \(~1.5\) below average to average
    - increasing the breadth of applicability
Professional Development Identification Study: Current Progress

Preliminary Descriptive Survey Results

• Sample (N = 183)

<table>
<thead>
<tr>
<th></th>
<th>All Teachers (n = 183)</th>
<th>Rural (n = 116)</th>
<th>Non-Rural (n = 67)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>7.2%</td>
<td>6.1%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Female</td>
<td>92.8%</td>
<td>93.9%</td>
<td>90.9%</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
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</tr>
<tr>
<td>White, non-Hispanic</td>
<td>84.2%</td>
<td>83.6%</td>
<td>85.1%</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>13.7%</td>
<td>15.5%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.6%</td>
<td>---</td>
<td>4.5%</td>
</tr>
<tr>
<td>American Indian/Alaskan Native</td>
<td>0.5%</td>
<td>0.9%</td>
<td>---</td>
</tr>
<tr>
<td><strong>Years Teaching Experience</strong></td>
<td>M = 15.53 (SD = 10.44)</td>
<td>M = 16.46 (SD = 10.95)</td>
<td>M = 13.96 (SD = 9.39)</td>
</tr>
</tbody>
</table>
Professional Development Identification Study: Current Progress

Preliminary Descriptive Survey Results

• A larger proportion of rural teachers participated in:
  – single professional development workshops
  – consultant-led professional development
• A smaller proportion of rural teachers participated in professional development led by colleagues
• A similar proportion of rural and non-rural teachers participated in workshops with coaching
• Most professional development for both rural and non-rural teachers was in-person
Professional Development Identification Study: Current Progress

Next Steps

• With the complete sample, assess descriptive differences in PD experiences between rural and non-rural teachers
• Using a multi-level path analysis, investigate the potential influence of PD characteristics on rural teachers’ knowledge, perceptions, and practice
• Conduct exploratory analyses to assess the potential moderating influence of other relevant contextual and teacher variables
Project READERS: Update

Introduction/Rationale

• Reading is a critical prerequisite for all learning in school settings
• Unfortunately, access to quality and ongoing PD on reading instruction can often be a challenge for rural teachers
• Additional research is needed to assess the utility of efficient and effective PD approaches for rural teachers
Project READERS: Update

Purpose of Study

• Purpose of this study is to investigate the efficacy of two variations of teacher PD with coaching in the use of student data to inform K-5 reading instruction/intervention:
  • PD with distance (web-based) coaching
  • PD with on-site (face-to-face) coaching
Project READERS: Update

Participants
• Approximately 360 rural classrooms teachers (3 from each of 120 participating schools) and their special education and/or Title I support staff

Research Design
• Three-cohort, randomized experimental design
• 120 schools randomly assigned to one of three conditions
  – No PD
  – PD with onsite (face-to-face) coaching
  – PD with distance (web-based) coaching
Project READERS: Update

Intervention Implementation

• Teachers in PD conditions participate in institute-base PD accompanied by either distance or onsite coaching on:
  • the use of data to identify students’ reading needs
  • goal setting for individual students
  • implementation of research-based interventions based on identified student needs
  • ongoing monitoring of students’ progress to determine the need for modification/adaptation of ongoing instruction/intervention
Data Collection

• Teacher data
  – Reading instructional knowledge
  – Data-based decision making knowledge and skills
  – Teacher instructional logs
  – Videotaping of instructional sessions
• Student data
  – DIBELS
  – Woodcock Johnson Tests of Achievement – Reading
• Implementation fidelity data
  – Fidelity checklists
  – Video observations
Project READERS: Update

Current Progress

• Currently conducting study with 62 rural teachers and special education and/or Title I support staff from Cohort 1
• Teachers have begun receiving condition-appropriate PD with coaching
• Conducted initial baseline student and teacher data collection in August, 2010; teachers are currently completing logs
• This 3-Cohort study will conclude in June, 2014
Contact Information

R²Ed Leadership

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• Todd A. Glover, Director, *Research Operations*
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• Gina M. Kunz, Director, *Rural Outreach and Coordination*
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Thank you!