The Influence of Rural Professional Development Characteristics on Teachers Perceived Knowledge and Practice

National Center for Research on Rural Education (R²Ed)

N. CYFS

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Project Contributors

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Introduction and Study Rationale

- Although existing literature on teacher professional development (PD), little is known about:
  - characteristics of PD in rural schools
  - impact of PD characteristics on rural teachers' perceptions, knowledge, and practice

Introduction and Study Rationale

- Addresses a critical gap by investigating:
  - variations in existing rural PD practices
  - differences in PD practices between rural and non-rural settings
  - the potential influence of PD aspects on rural teachers' knowledge, perceptions, and instructional practice

Introduction and Study Rationale

- Investigated PD in 4 areas:
  - Reading
  - Science inquiry
  - Mathematics instruction
  - Teachers' use of data to inform reading instruction/intervention
- Study findings useful for informing:
  - future PD in rural schools
  - ongoing reach on PD

Primary Research Questions

1. How do rural and non-rural teachers differ with respect to their professional development participation and their perceptions and classroom practices pertaining to training foci?

2. What is the potential influence of professional development characteristics on rural teacher perceptions, knowledge, and practices?

Method

Participants

- Randomly selected from national NCES database
- Sample included 268 rural and 327 non-rural K-5 teachers from 43 U.S. states
- Within each locale, sample was stratified by school size

Method

Procedure

- Surveys mailed in April and September of 2010
- *S*mall 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*

Method

Measure	Focus/Description
Demographic information	• Teaching assignment • Certifications • Degrees obtained • Gender, age, ethnicity • Experience • Class size and organization • School grade-level range
Professional development characteristics	Characterize best PD experience in past year in one of four content areas with respect to: • Topical focus • Format • PD leader • Total hours and time span • Distance travelled • Use of demonstration/modeling • Opportunities for practice/feedback and interaction/collaboration

Method

Measure	Focus/Description
Perceptions	Rate: • Importance of content-specific instructional topics/practices • Acquisition of knowledge of specific instructional topics/practices
Instructional content knowledge	Complete one of four measures: • *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* (Project developed) • *Science Inquiry Instructional Knowledge* (Project developed)
Reported practice	Indicate the extent to which instructional topics are focus of practice

Results & Implications

1. How do rural and non-rural teachers differ with respect to their professional development participation and their perceptions and classroom practices pertaining to training foci?

Results: Rural and Non-Rural Teachers Best PD Experiences

- Similarities:

	Rural	Non-Rural
Hours Spent in PD	*M* = 18.78 (*SD* = 18.87)	*M* = 18.30 (*SD* = 19.51)
Training Method		
Live	93.5%	96.2%
Distance Learning	3.0%	2.5%
% of time spent on practice & feedback opportunities in classroom (coded as continuous variable; e.g., 3 = 21%-30%)	*M* = 3.42 (*SD* = 2.81)	*M* = 3.82 (*SD* = 3.06)

Results: Rural and Non-Rural Teachers Best PD Experiences

- Similar PD leaders:

	Rural	Non-Rural
Teacher/Staff from School	19.9%	25.2%
District Staff	10.4%	16.4%
Regional Educational Unit Staff	11.9%	10.7%
State Staff	6.0%	3.8%
External Expert/Consultant	38.8%	31.4%
University/College Faculty/Staff	7.0%	7.5%

Results: Rural and Non-Rural Teachers Best PD Experiences

- Differences in PD format:

	Rural	Non-Rural
Single Workshop/Institute	24.4%	13.8%
Workshops/Institutes w/ Coaching	24.4%	18.2%
College Course	4.0%	6.9%
Mentor, Coach, Lead Teacher, Observer	3.0%	8.2%

- Differences in interaction/collaboration:

	Rural	Non-Rural
Did Not Interact/Collaborate	7.0%	15.7%
Part of Professional Development Experience	64.2%	57.2%

Results: Rural and Non-Rural Teachers Perceptions, Knowledge, & Practices

	Rural	Non-Rural
Perceived utility of topical foci (average rating across listed topics; Not important = 0, Somewhat Important = 1, Important = 2, Critical = 3)	*M* = 2.03 (*SD* = 0.57)	*M* = 2.01 (*SD* = 0.59)
Instructional content knowledge (proportion of items correct)	*M* = 0.53 (*SD* = 0.19)	*M* = 0.52 (*SD* = 0.20)
Reported practice (average rating across listed topics; Not a focus = 0, Minor = 1, Significant = 2, Unsure = 0)	*M* = 1.52 (*SD* = 0.41)	*M* = 1.42 (*SD* = 0.45)

Implications

- Despite perceptions about limitations in access to PD, rural teachers were not disadvantaged in their receipt of PD
  - Similar to non-rural teachers in time spent in best PD experience
  - Similar to non-rural teachers in receipt of practice/ feedback in both a workshop and a classroom context

Implications

- Rural teachers' best PD was more often provided in single workshop context or in workshop with coaching
  - Coaching finding is promising, as it suggests some level of personnel support beyond workshops

Implications

- Non-rural teachers may be able to better utilize school/district personnel for mentoring and may have greater access to better college courses
  - Non-rural teachers' best PD was more often provided by a mentor/lead teacher
  - Non-rural teachers best PD was more often a college course

Implications

- Rural teachers reported more collaboration both during PD, perhaps a function of:
  - the rural work environment
  - accommodating for limited personnel resources

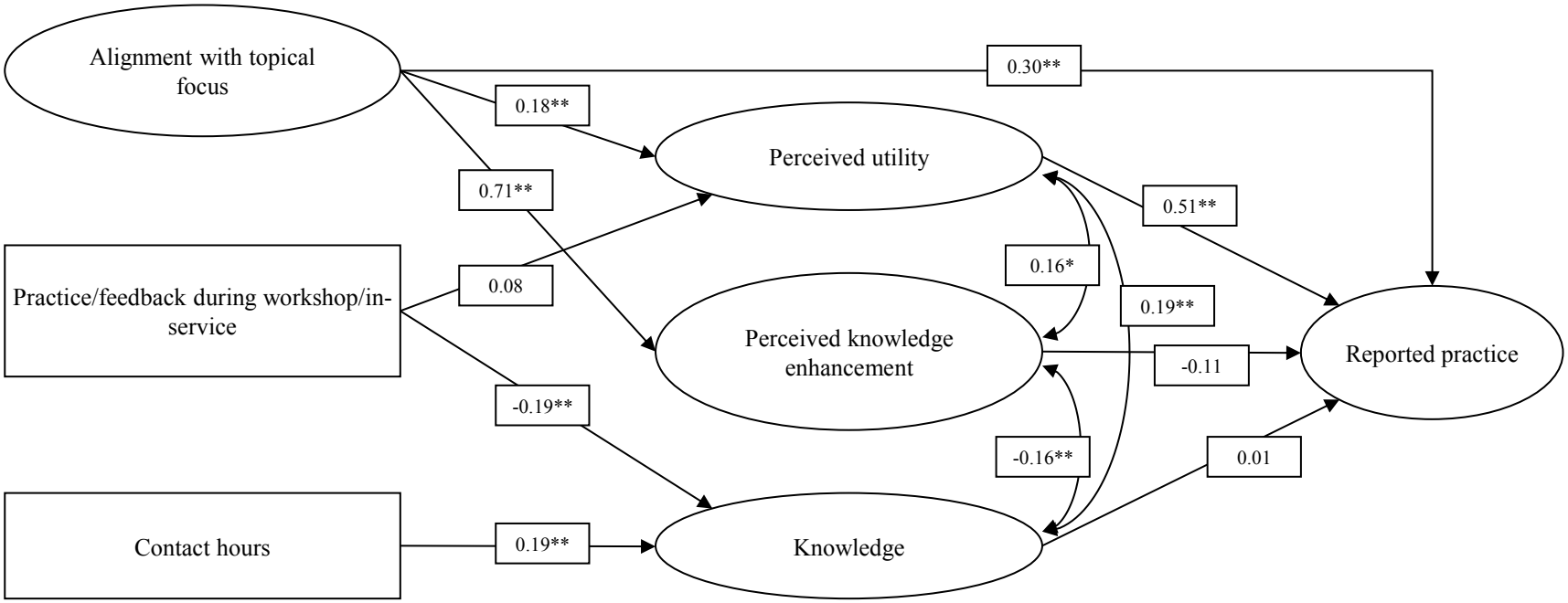
Implications

- Neither rural nor non-rural teachers were highly knowledgeable about content/pedagogy
  - Additional PD may be of benefit for achieving mastery

Results & Implications

2. What is the potential influence of professional development characteristics on rural teacher perceptions, knowledge, and practices?

Analytic Model



Results

- Greater emphasis of topics during PD was related to:
  - increased perceptions of the utility of those topics
  - increased perceptions of knowledge gained pertaining to those topics
  - an increased focus on those topics during classroom instruction

- Overall, when topics were included during PD, teachers found the topics to be more useful and reported implementing more practices related to the topics (chi-square tests follow-up)

Results

- Teachers who perceived topics to be more useful reported more emphasis on those topics during instruction
- Teachers who spent more time in PD had greater pedagogical content knowledge (*total sample only*)
- Teachers who reported receiving more practice/ feedback had less pedagogical content knowledge
  - Maybe due to seeking out PD in less knowledgeable areas

Implications

- By focusing on topics in PD, may be able to increase:
  - teachers' perceptions about their utility
  - their practice in the classroom

- By focusing on teachers' perceptions about a topic's utility, may also be able to increase practices related to that topic in the classroom

- This is promising in that PD appears to have an impact on perceptions and practice

Ongoing Research

- These findings are useful for informing:
  - PD for rural teachers
  - Existing and future research on teacher PD

- Ongoing randomized trials on PD through R^2ED in reading and science:
  - Project READERS (Response to Effective Assessment-Driven Early Reading Supports)
  - Coaching Science Inquiry (CSI)

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