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Call for Manuscripts

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Editorial: Message from the Editor

Laura Levi Altstaedter, *Executive Editor, TPRE*

First, let me express my gratitude for the opportunity to serve as Executive Editor of *Theory & Practice in Rural Education(TPRE)*. It is a privilege to work with our authors, editorial board, and you, our readers, in fulfilling our mission to disseminate high-quality articles addressing theoretical, empirical and practice-related issues in rural education.

TPRE is hosted by ECU Library Services and its publication is currently supported through ECU's Rural Education Institute. All manuscripts submitted to TPRE undergo a double-blind review process, which involves the coordinated efforts of several members of the review board, including the Journal's Executive Editor, Managing Editor, Assistant Editor, Associate Editors, and Reviewers.

The following people and their continuous support for TPRE have contributed to the publication of this issue: Dr. Kristen Cuthrell, Director of ECU's Rural Education Institute; Dr. Jan Lewis, Director J. Y. Joyner Library; Dr. Diane Kester, Managing Editor; Dr. Robert Quinn, Associate Editor for the Research Forum; Dr. Irina Swain, Associate Editor for Digital Projects; Ms. Hannah Shano, Assistant Managing Editor; Ms. Elizabeth Japczyk Schuler, Production Assistant; Joseph Thomas, Assistant Director for Collections and Scholarly Communication, Joyner Library; and John McLeod, Director of the UNC Press Office of Scholarly Publishing Services. We would also like to express our sincerest appreciation for the reviewers on our editorial board and the authors who contributed their work to this issue.

I would like to take this opportunity to invite scholars and practitioners in the field of rural education to contribute their work for our general issues and for our upcoming special issue on *Equity, Inclusion, and Diversity in Rural Schools and Communities* (forthcoming in Fall 2021) and *Rural STEM Education* (forthcoming in Fall 2022). Manuscripts for our general issues are typically due in December with publication dates expected in May. Manuscripts for our special issues are typically due in March with publication dates expected during the Fall.

Finally, we are currently seeking an Associate Editor for the Practice Forum and additional reviewers. If you are interested in becoming Associate Editor for the Practice Forum, please email your CV and a short statement of interest to tpre@ecu.edu. If you are interested in becoming a peer reviewer, please go to the Journal's website (http://tpre.ecu.edu) to register. Edit your profile and navigate to the tab "Roles" where you may select "Reviewer" and submit your interests concerning rural education.

Laura Levi Altstaedter, PhD
Executive Editor, *Theory & Practice in Rural Education*

About the Author

Laura Levi Altstaedter, PhD, is an Associate Professor in Hispanic Studies Education. She holds degrees in Curriculum and Instruction, Second Language Education (PhD), and Latin American Studies (MA) from Virginia Polytechnic Institute and State University. Additionally, she holds an MA in Curriculum and Instruction from Wake Forest University and a Traductorado Público en Idioma Inglés, University of Buenos Aires, Argentina. Her research focuses primarily on second language writing at the college level. She is particularly interested in peer feedback and how it impacts students' writing proficiency. She is also interested in researching the effects of technology-enhanced language instruction and innovative assessment practices on students' perceptions and language proficiency.

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Place-based Innovations for Rural Education: An Introduction to Volume 10, Issue 1 of TPRE

Elizabeth Japczyk Schuler, *Beaufort County Community College*

Currently, the National Center for Education Statistics (NCES) utilizes physical addresses and geographic coordinates in an urban-centric system to categorize rural areas based on their proximity to urban centers (Institute of Education Science, 2006.). On a fundamental level, spatial narratives affect how we perceive certain objects in relation to others. These narratives establish a norm for which objects are centrally located (Bæck, 2016). Within the current rural parameters set forth by the NCES, urban education settings are being assumed as the norm in educational research, despite recent US census data. It was reported that 57% of US school districts and 24% of students are rurally located (Institute of Education Science, 2013). The variety of rural locales in which educational institutions are situated has reinvigorated the interest in rural education. The shift in place perspective offers an opportunity to innovate research, reform practices, and propose equitable policies for rural education (Biddle & Azano, 2016).

Fundamental to the articles chosen for the present issue of TPRE is the dynamism and pertinence of place in place-based education. Rurality is not a static set of circumstances that acts as a variable determinant of causality (Corbett, 2016). Rural contexts serve as multifaceted and productive pedagogical constructs, wherein educators, students, and administrators work within ever-changing social, political, and cultural domains (Reagan et al., 2019). Research within rural settings has generalized rurality as a problem to overcome as opposed to a context to comprehend (Burton et al., 2013). While the authors of the articles within this issue of TPRE address common issues facing rural settings, such as – the deficient funding and allocation of resources, the need for improved recruitment, preparation, and retention of qualified educators, and student poverty - they also direct our attention to the potential located within these locales, seeking to leverage favorable attributes, such as – smaller, more personalized education settings and the sense of community (Rude & Miller, 2017).

Overview of the Issue

The articles selected for the current issue of *Theory & Practice in Rural Education (TPRE)* explore varying rural places within an array of topics, including: the enrichment of child leadership research outside of the school context, the demand for trauma-informed practices in alleviating the challenges posed by childhood trauma and stress, the desire for contextualized professional development, and the need for boundary-spanning, innovative leadership in community renewal and student assessment practices. The expanse of research located within this issue speaks to the diversity of rural experiences. This issue not only includes promising research in rural education, but creative practices and templates for improved teacher recruitment, preparation, and retention.

The first article in this issue explores qualitative research into young children's leadership styles via contextual relationships of families in contrast to the traditional focus of leadership skills in early childhood classroom activities. Debra Jo Hailey and Michelle Fazio-Brunson (2020) utilized a leadership subscale of the *Scales for Rating the Behavioral Characteristics of Superior Students, 3rd. ed.* to identify several first-grade student leaders and their parental figures. In interviews conducted with several parents, common trends emerged. A prominent one was rural living provides multiple opportunities for young leadership development. Data revealed the importance of small-town size and support, community involvement, and neighborhood influences in presenting leadership opportunities for young children. The authors stressed the importance of community asset

mapping to help parents determine the growth potential for their children's leadership capabilities within the rural setting.

The second article utilizes qualitative and quantitative research methods to explore trauma informed practices in mitigating the effects of adverse childhood experiences (ACEs) on students in rural educational settings. In order to foster student success in social, academic, and emotional behavioral domains, Lauren Davis and Rebecca Buchanan (2020) incorporated yoga and mindfulness strategies into the curriculum of fourth grade students for the duration of nine weeks. Student and teacher pre- and postintervention survey data demonstrated positive improvements in student moods, academic behaviors, and social behaviors across all class sections. Davis and Buchanan offer an in-depth look at the benefits of trauma-informed practice and teaching children how to identify and regulate the 'big' emotions that often present problem-solving barriers.

The third research article in this issue presents an in-depth, cohort case study that explores the effects of a locally constructed professional development (PD) opportunity for mathematics teachers in rural Canada. Candy Skyhar (2020) addresses the unique, yet varied rural issues within a local context, including teacher professional isolation, educational funding challenges, and geographical hurdles. With limited available opportunities for rural educators to engage in meaningful PD, the author emphasizes the importance of constructing effective, local models utilizing the strengths of the region and mitigating challenges. Implications of this study include a responsibility of those designing rural teacher PD to analyze the dynamic contexts in which schools are situated to provide effective PD that will meet the needs of both the community and its educators.

In the fourth article, Sarah Zuckerman (2020) analyzes the centralized role of rural schools within their communities and the importance of boundary-spanning leadership for school and community renewal. Rural school leaders hold a responsibility to forge mutually beneficial relationships between school and community to promote agency and action towards the common good. The author expounds on the varying roles educational leaders assume and how their ability to direct change is both facilitated and constrained by their formal roles.

The fifth article presented in this issue addresses the inequitable nature of traditional grading practices and the need for rural schools to move toward more effective grading policies. Tom Buckmiller, Matt Townsley, and Robyn Cooper (2020) employed a mixed-method survey of 85 rural principals to assess their intentions of employing standards-based grading (SBG) within their schools and perceptions of their leadership efficacy and resources in pursuance of this venture. The data demonstrated that not only did the principal sample incorporate SBG into their five-year vision, but that they also maintained the literacy, capacity, and resources to support SBG within their schools. The authors propose multiple solutions for strategic implementation, acknowledging the barriers to such a monumental task.

The issue next addresses innovative practices in rural teacher recruitment, preparation, and retention using community-based participatory research (CBPR) and a skillfully adapted video grand rounds (VGR) structure for special education teacher candidates. The sixth article examines how the cultivation of collaborative partnerships between universities and rural school districts can lead to increased efficacy in creating and testing a contextualized, rural clinical practice model. Tena Versland, Kathryn Will, Nicholas Lux, and James Hicks (2020) placed two groups of 13 preservice teachers into rural, remote schools in Montana to measure perceptions of rural schools before, during, and after a week-long clinical experience. Data indicated that the immersive rural clinical model positively changed the preservice teachers' perceptions of teaching in rural schools and provided the students a better understanding of working in a rural context. The authors offer an in-depth look at the implications of their research, including promise for the recruitment and retainment of teachers in rural areas, and the collaboration of school district leaders and university personnel to cocreate educational programs that bring rural communities and higher education into mutually beneficial partnerships.

There are many challenges that come with requiring special education teacher candidates to have a specified number of observation hours in rural education settings, including the availability and accessibility of quality special education teachers to serve as clinical teachers. The authors of the seventh article explore an innovative VGR structure for preparing special education teacher candidates with varied clinical experiences, including rural special education classrooms. Karen Voytecki, Marsha Craft Tripp, Kathi Wilhite, and Sandra Hopfengardner Warren (2020) designed and implemented an innovative VGR model to enhance and measure teacher candidates' observation skills in an early experience course. Data revealed the importance of VGR observation tasks in improving student observation protocols and ability to translate these skills to live observations. The authors offer a VGR template to supplement and/or replace face-to-face observations, thus revolutionizing rural field experiences.

In the final submission for the present issue, Kathleen Dorr (2020) provides a thoughtful critique of the book *No Longer Forgotten: The Triumphs and Struggles of Rural Education in America.* While rural schools are often generalized into one, broad category, Dorr stresses the need to recognize the potential this categorization has for oversimplifying regional issues. Dorr urges rural practitioners to thoroughly understand the communities in which they serve, and the defining characteristics of those communities, citing rural poverty levels, the current state of education for Black students, the politics of the region, staffing issues, and the lack of technology resources. By understanding each rural community's distinct features and needs, practitioners can ensure they are proposing innovative solutions that will work for their specific community, and not simply using a one-size-fits-all approach.

Final Thoughts

'Place' is a living, breathing entity, not a stagnant 'backdrop' to our lives. In a rural context, it is the manifestation of cultural-historical time, interpersonal dialogue, and the interaction between a community and its material environment (Van Eijck & Roth, 2010). In thoughtful contextualization of rural place, we are able to draw on the strengths of our communities and mitigate the effects of our deficiencies. The articles in this issue demonstrate the importance of understanding rural place in developing boundary-spanning leadership, creating relevant professional development opportunities for educators, utilizing trauma-informed practices to mitigate the effects of rural poverty and childhood trauma on student educational barriers, and revolutionizing rural teacher recruitment, preparation, and retention.

As you read, I encourage you to use this issue of TPRE as a template for innovation within your community. Uncover the defining features of your 'place' and leverage those strengths for contextualized place-based innovations for the advancement of rural education.

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Leadership in the Early Childhood Years: Opportunities for Young Leadership Development in Rural Communities

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Research into young children's leadership skills is sparse and focuses on leadership in early childhood classroom contexts. Understanding of leadership development in young children can be expanded by studying parents' perceptions of children's leadership development as it is enacted in contexts outside of the school. This qualitative study examined beliefs, practices, and contextual relationships of families with young children who were identified by teachers within their schools as having strong leadership skills. Student leaders were identified according to the Leadership subscale of the *Scales for Rating the Behavioral Characteristics of Superior Students*, 3rd ed. Four mothers and three fathers of identified first graders who met gender and ethnic selection criteria participated. Interviews were conducted with structured and unstructured open-ended questions, and parent journals were collected from participants. Using Bronfenbrenner's bioecological model of human development as a guide, parental perceptions of contextual influences on young children's leadership development were investigated. Findings indicate that parents were intentional in trying to develop characteristics and dispositions in their children to help them become good citizens but did not necessarily consider their actions as also building early leadership skills. Information concerning contextual situations, relationships, tools, and characteristics of early leadership development is shared. As parents discussed opportunities for their first graders to develop leadership skills, an unexpected theme emerged regarding benefits of rural living for young leadership development.

***Keywords*: early childhood, extracurricular activities, human development, leadership, parenting, rural education, social networks**

In a democratic society such as the United States, leadership skills are relevant in many ways to daily life. Books abound on the topic of developing leadership skills in business, athletics, religion, and education. Organized groups that cater to youth, such as 4-H, Boy Scouts, and Girls and Boys Clubs of America, seek to help youth develop leadership skills (Karnes & Bean, 1995). Although discussions on potential leadership abilities of people ranging from preadolescents to adults abound in professional literature, few focus on young children and their emerging leadership skills (Trawick-Smith, 1988). Early childhood is recognized by researchers, educators, and parents as formative years of cognitive development, and it is likewise recognized that a stimulating environment early in life will positively affect overall development. Therefore, as a society that values leadership skills, it seems only natural to be interested in the development of those skills from a young age.

This study investigated some of the contextual factors that influence young leaders' behaviors.

Parent interviews and journals were used to explore parents' perceptions about young children's emerging leadership development.

Literature Review

Early Childhood Leadership Defined

A review of research identified many definitions of leadership, but one seemed most applicable to the early childhood years: Foster (1981) defines several categories of leadership, including action leadership, characterized by behaviors that preserve the functioning of group social processes or by actions that cause changes that either improve problem-solving efficiency or advance the level of thinking in the group. This description most accurately describes leadership as it is enacted in the early years of development.

Characteristics of Young Leaders

It may be difficult for some to think of very young children as being leaders, but a review of typical leadership behaviors observed in early childhood classrooms illustrates how leadership is enacted.

Linguistic Competence. Topping the list in the execution of leadership in almost every study reviewed was the ability to listen and respond effectually. Linguistic competence, evidenced as both advanced verbal skills, such as broad vocabulary and the use of compound and complex sentences, and the ability to communicate effectively with age-mates and adults by modulating words to fit the circumstances and intended audience, was frequently noted (Karnes & Chauvin, 2000; Kemple, Speranza, & Hazen, 1992; Kitano & Tafoya, 1983; Milligan, 2004; Perez, Chassin, Ellington, & Smith, 1982; Trawick-Smith, 1988; Wolfle, 1989). Young leaders were more likely than their same-age cohorts to promote continuation of play and interaction by listening, on-topic responding (Woolfson, 2016), making alternative suggestions, and rejecting suggestions diplomatically (Green, Cillessen, Rechis, Patterson, & Hughes, 2008; Kemple et al., 1992; Trawick-Smith, 1988; Williams & Schaller, 1990). In addition, skilled communication was observed as a primary reason for leaders effectively entering into an existing play group and recognizing body language and facial expressions as part of the communication schema (Kemple et al., 1992; Trawick-Smith, 1988).

Problem Solving. Many young leaders seem not only to express themselves well but also to have the ability to listen to their followers and make good decisions based on that input. Young leaders are curious and creative thinkers who are willing to take risks (Woolfson, 2016). This is evidenced by their willingness to offer suggestions for new play episodes and problem-solving strategies (Adcock & Segal, 1983; Hatch, 1990; Segal, Peck, Vega-Lahr, & Field, 1987) and to explore innovative methods for accomplishing a task or team effort (Sternberg, 2004; Woolfson, 2016).

Intelligence. It may not be necessary to be a gifted academic learner to possess extraordinary leadership skills, but there seems to be a general tendency for leaders to be of above-average intelligence (Sternberg, 2005). This is evidenced by the ability to quickly analyze a situation, analyze possible outcomes and consequences of decisions, reach a logical conclusion, and organize a plan of action (Karnes & Chauvin, 2000; Kitano & Tafoya, 1983; Landau & Milich, 1990; Ramey, 1991; Sternberg, 2005). Above-average intelligence is also apparent as exceptional leaders express creativity while enhancing the make-believe quality of play and act as the generator of new or innovative ideas (Feldhusen & Pleiss, 1994; Kitano & Tafoya, 1983; Sternberg, 2005; Trawick-Smith, 1988).

Social and Emotional Skills. Positive outcomes of leadership are the result of a give-and-take communication scheme that includes negotiation, persuasion, compromise, and often taking the group needs into consideration as opposed to acting in a self-serving capacity (Sankar-DeLeeuw, 2007; Sternberg, 2005; Trawick-Smith, 1988; Wolfle, 1989). A proclivity for dealing effectually with social and emotional issues is another attribute frequently seen when observing young leaders. Examples of high functioning in the social and emotional development domain include sharing resources, maintaining personal emotional control (Landau & Milich, 1990; Ostrov & Guzzo, 2015), helping regulate the social interactions of players within a group, and enjoying group interactions (Mawson, 2011; Scharf & Mayseless,

2009; Willis & Schiller, 2011). Even when resource acquirement is for personal gain, young children who use prosocial behaviors are more likely to get the desired resource (Hawley, 2015). Socially and emotionally astute young leaders are more likely to attend to the feelings of playmates, expressing empathy with both actions and words (Feldhusen & Pleiss, 1994; Rivizzigno & Brendgen, 2014; Trawick-Smith, 1988).

Social Responsibility. Not only do young leaders tend to think about group needs as opposed to being self-serving, but they also have an altruistic nature, seeing the needs of the less fortunate and seeking solutions to the problem causing the misfortune (Karnes & Bean, 1995; Scharf & Mayseless, 2009). Furthermore, leaders in group situations have an affinity for generating and applying conflict-resolution strategies quickly and effectively without using coercive measures (Mawson, 2011; Sankar-DeLeeuw, 2007; Trawick-Smith, 1988; Wolfle, 1989).

Although young leaders are likely to bring unique leadership characteristics and strengths to a given situation, these are typical behaviors that many exhibiting leadership share. Table 1 synthesizes typical leadership behaviors exhibited by young children as observed and published by teachers and researchers.

Theoretical Framework: The Bioecological Systems Theory of Human Development

Bronfenbrenner organized the many contexts of human development into a set of five interrelated levels, called the bioecological systems theory of human development. The first level is the microsystem, the immediate context containing the developing person, and consequently his or her biology, along with the relations between the developing person and the immediate active environment (Bronfenbrenner, 1979). For example, children exist within a home where they have relationships with their parents and siblings. The second level is the mesosystem, the interrelationship between the contexts the child exists within, such as home and school (Bronfenbrenner, 1979). The third system in this theory, the exosystem, involves little or no contact with individuals but is influenced by events that occur within it, such as decisions made by the local school board (Bronfenbrenner, 1979). A fourth level, the macrosystem, is the overarching level of society the child exists within and includes social, cultural, political, and historical influences (Bronfenbrenner, 1979; Bronfenbrenner & Ceci, 1994; Lerner, 2002). This dynamic theory also incorporates time as a functioning component on human development, called the chronoystem (Bronfenbrenner, 1995). An example of time as an influential factor in development is a child's age when parents go through a divorce.

Each level of Bronfenbrenner's bioecological systems theory of human development is connected to the others: changes, events, and disturbances at one level have a trickle-up or trickle-down effect on other levels (Lerner, 2002). Specifically for this study, childhood leadership development was examined by looking at the children in their immediate environment and within the interactions of the larger environment by using the bioecological systems theory as a guide.

Methods

Setting and Participants

To investigate young children's leadership skills outside the school context, parents were interviewed in 2013 to gain insight into their perceptions. Unless otherwise noted, the demographics reported here are for the year 2013.

The Community. Riverdale (pseudonym), a rural town in Louisiana, has a rich history of agriculture, southern hospitality, and battlefields. At the time of this study, the U.S. Census Bureau ranked Louisiana as one of the poorest states in the nation, with 19.8% of the population living below the poverty line (Bishaw & Fontenot, 2014). The median household income for the area was approximately $27,400 (U.S. Census Bureau, 2013a), compared to median household incomes represented by the state and nation of approximately $45,000 and $52,000, respectively (Noss, 2014). Demographic data for the parish indicate that 54% were Caucasian, 41% African American, and 5% other.

(Continued following Table 1)

Table 1.

Characteristics and Behaviors of Young Leaders

Characteristic	Behaviors
Linguistic competence	▪ Has advanced verbal skills ▪ Modulates words to intended audience ▪ Promotes continuation of play through diplomacy ▪ Enters existing play groups successfully ▪ Has multiple exchanges in conversations ▪ Listens to followers ▪ Recognizes and uses body language as communication
Problem solving	▪ Listens and makes decisions based on available information ▪ Exhibits curiosity ▪ Exhibits creativity ▪ Takes calculated risks ▪ Works to accomplish task or team effort
Intelligence	▪ Analyzes a situation and organizes a plan of action ▪ Develops creative solutions ▪ Generates new ideas and innovative solutions ▪ Expresses empathy
Social and emotional skills	▪ Negotiates and compromises ▪ Is persuasive ▪ Takes group needs into consideration, collaborates ▪ Uses prosocial skills to acquire desired resources ▪ Exhibits emotional self-control ▪ Expresses empathy ▪ Helps regulate emotions in group processes
Social responsibility	▪ Is altruistic ▪ Sees injustice and considers solutions ▪ Uses noncoercive measures to resolve conflicts

As might be expected of a college town, the educational attainment levels were relatively high compared to the rest of the state and nation: high school degree or GED, 33%, and college degree, 21%, compared to the national average of 30% and 14.4%, respectively (U.S. Census Bureau, 2013b).

To some extent, individuals create their own definitions of *rural* and *urban* (Coladarci, 2007). In this state, the classification system is based on population. Communities of more than 5,000 inhabitants are labeled a *city*. By that definition, Riverdale is a city. However, some government entities define geographic areas using other measures, such as income, poverty, access to health care, and geographic proximity to metropolitan areas. Considering these demographics, Riverdale has low income levels in addition to high poverty rates, which classify it as rural. Furthermore, according to the Rural Health Information Hub (2018), Riverdale is classified as a rural community based on health care accessibility and level of services available. In addition, the U.S. Department of Agriculture (2018) considers Riverdale to be rural based on population density and distance from a metropolitan area. Although the local government classifies it as a city, Riverdale meets many criteria for being defined as rural.

The School. Riverdale Elementary School (pseudonym) served 320 students from first to eighth grade, with two classrooms per grade level. The Louisiana State Department of Education publishes a School Report Card for Parents annually, ranking schools with letter grade ratings ranging from F (failure) to A (above average) based on academic performance, goal achievement, and school climate. The overall grade for the parish was a C, but the specific school in this study was consistently scored A and had higher academic growth than targeted (Louisiana Believes, 2014).

The Children. As the lowest grade level of students, first graders were chosen so the children were less likely to have prior relationships with their classmates than other grade levels, thus eliminating many presupposed relationships or reputations. The first grade students closely reflected the ethnic population of the community, with 19 Caucasian students, 20 African American students, and 1 Asian student.

Riverdale first-grade teachers were trained to administer the Leadership portion of the *Scales for Rating the Behavioral Characteristics of Superior Students* (Renzulli et al., 2010) and then administered the test. Results were given to the researcher using only student numbers for identification. High scores were determined and sorted by gender and then by ethnicity. Ethnicities represented in the study were African-American and Caucasian, by far the most represented ethnic groups of both the school and the community. The school principal identified the students with the highest scores and provided contact information for their parents.

The Parents. Parents of the highest scorers in each gender and ethnicity category were contacted for permission to be interviewed. Both parents of each of the highest scorers agreed to participate, with the exception of one father. This resulted in interviews with the parent(s) of four children (all pseudonyms): (a) Mr. and Mrs. Sawyer, parents of a Caucasian male; (b) Ms. Bigsby, parent of an African American male; (c) Dr. and Mrs. Pillsbury, parents of a Caucasian female; and (d) Mr. and Mrs. Flowers, parents of an African American female.

Data Collection

In addition to the initial data collected at the school used to identify young leaders, data also included parent interviews and parent journals. Each of these is clarified below.

Interviews. The central question that guided this study was whether there are certain practices, beliefs, or contextual relationships within the family of a young child who has been identified as a leader in the academic setting that will contribute to an in-depth understanding of how parenting performance influences the development of a young leader. To understand the beliefs, practices, and contextual influences of four families, one-on-one interviews were conducted.

Each parent was given a consent form that explained the study. The parents were informed that pseudonyms would be used in all written documentation so that their names and the name of the school would remain confidential. Confidentiality practices were discussed and agreed on, with signatures obtained as evidence.

After gaining consent, one-on-one interviews were conducted at times and locations convenient for the parents (e.g., workplaces, coffee shops, homes, church classrooms, and civic organization meeting spaces). Interviews were audio-recorded, and the time span between the first and last interview was 83 days.

Although mothers and fathers were given equal opportunities to choose how to participate, mothers chose to participate in three different 45-minute interviews, whereas fathers chose to participate in one in-depth interview that lasted 1–2 hours. Mothers chose to read over their typed transcripts, but fathers turned down that option. All of the mothers took the opportunity to read, correct, and make comments on transcribed interviews, but no changes were requested.

Journals. During the first interview, the journal was introduced and explained. Participants were responsible for preserving confidentiality of their journals until returning them to the researcher; the researcher then maintained confidentiality. For each entry, parents described a specific situation relating to a childhood leadership question in order to create

personal stories. Journals were retrieved one week after the last interview.

Thus, several methods of data collection were employed: three rounds of one-on-one structured and unstructured interviews (for mothers), one in-depth interview (for fathers), content analysis of parent journals (mothers and fathers), and transcript checking of reports (mothers).

Data Analysis

For this project, the researcher utilized constant comparative data analysis as a guide for organizing, connecting, and understanding the collected and triangulated data. The constant comparative method is characterized by immersion in the data to identify patterns and themes (Charmaz, 2000). Glaser and Strauss (1967) first proposed the constant comparative method for use in grounded theory research, but the method has since been adopted for a variety of qualitative methodologies, including within-case and cross-case analyses (Merriam, 2009). Merriam (2009) contends that the constant comparative analysis technique allows the researcher to construct and revise categories by continuously comparing patterns and themes within each case and between cases, thus allowing for a deeper understanding of concepts and perceptions. Data obtained in the interviews were initially organized into categories of beliefs, practices, context factors, limitations, and supports with subsets determined and labeled as categories evolved.

In qualitative research, data collection and analysis are typically processes that occur in tandem (Merriam, 2009); thus, the researcher analyzed data as they were collected, allowing for the analysis to impact the subsequent stage of data collection. As described previously, an important component of qualitative inquiry and, correspondingly, reliability is triangulation previously substantiated through the variety of data sources and data collection methods. Reliability was further enhanced by intercoder reliability during interview analysis (Creswell, 2012).

The researcher began by coding and analyzing approximately 70 pages of interview transcripts using qualitative inquiry procedures outlined by experts in the field (Creswell, 2012; Glesne, 2005; Patton, 2002; Seidman, 2019). Initially, the researcher utilized eight codes drawn from the interview protocols and review of the literature: parent beliefs about leadership in general and beliefs about leadership in regard to their focus child, parenting practices and child practices that were perceived to build leadership skills, contextual elements that directly and indirectly influenced their child's leadership enactment, perceived limitations in developing early childhood leadership skills, and perceived supports for developing early childhood leadership skills. Following completion of the initial round of coding, an external researcher independently used the same codes to label two parent transcripts, and coded data were compared and discussed. As a result, five new codes emerged: parenting strategies, parent roles, family values, leadership influences, and child personality characteristics. Both researchers then used the 14-code scheme to recode one interview with each father and the first interview with mothers. A comparison of the transcribed interviews showed an overall reliability rate of 85% using a formula described by Miles and Huberman (1994): Reliability = number of agreements ÷ number of agreements and disagreements

The primary researcher then conducted the last two face-to-face interviews with mothers, transcribed the interviews, and gathered parent journals. Next, both researchers coded the second transcribed interview with mothers and determined that intercoder reliability continued to be at least 85% for each. The primary researcher coded the last remaining interview of the mothers and all of the parent journals. Through spot-checking, the researchers conducted two additional reliability checks on the last round of interviews and parent journals, again showing an agreement rate of at least 85%. At the end of the interviewing process, parent interview transcriptions totaled 140 pages.

Visuals were used to further organize data. For example, a domain analysis was used to organize recurring concepts and how they were connected to people or places. Additional visuals included a metamatrix analysis across cases that provided an easy-to-review comparison among the families of each child. By assembling the data from each case

in this form, the researcher was able to visualize how the variables compared to one another. In constructing the variable-oriented analysis, we used the variables specified in the central question: Do certain beliefs, practices, and contextual relationships within a family of a young child who has been identified as a leader in the academic setting contribute to an in-depth understanding of how parenting performance influences the development of a young leader? Looking across columns and blocks of data, common components across families as well as interesting contradictions and inconsistencies were identified.

During the within-case analysis of each family, data were coded separately, considering each family as a bound system. There was a continuous search for emerging, unexpected themes and collections of instances that could be grouped together because they had a similar meaning for participants. The constant comparative method helped identify categories that were continuously compared within and across cases, which were then further refined, expanded, or in some cases deleted (Charmaz, 2000). Although rural living was not intended to be a focus of this research, the concept of rurality continually emerged as important to the parents. As the quotes used throughout this article indicate, parents believe that the rural context and small town lifeways have distinct advantages for young leadership development.

Trustworthiness and Reliability

Triangulation methods of oral interviews and personal journals along with participant transcript checking were used to provide a greater understanding of the beliefs, context factors, and practices of parents whose first-grade child was identified by a teacher as a leader. Additionally, each family was first considered as a bound case, and then commonalities and differences between families guided a cross-case analysis between families. Using both within-case and cross-case analysis added an additional degree of robustness and trustworthiness to the study (Creswell, 2012). Lastly, an intercoder reliability rate of more than 80% was established, which is the standard for sufficiency (Miles & Huberman, 1994).

Results

Many concepts emerged that showed similarities between the study families' ideas about leadership development. The leadership characteristics of children observed in early childhood classrooms were also seen by parents in other contexts. Most parents were not purposeful in teaching their child leadership skills but were intentional in teaching life skills deemed important for being productive citizens. Some other examples of similarities include the importance of having close relationships with family and extended family (especially aunts and grandmothers), relationships and a social network between the family and others outside of the family, learning opportunities in a variety of social contexts, a strong work ethic, a quality education, a family legacy built on personal stories, involvement in extracurricular activities, an understanding of church history and being considerate of others, critical thinking skills, and a sense of place. The sense of place, as they described their rural community, is evidenced by the participants' voices and is the primary focus of this article.

Building Relationships

In general, parents felt that the relationships children had in their nuclear and extended family, along with relationships with adults and children in their schools, extracurricular activities, churches, and neighborhoods, aided them in building social skills, problem-solving skills, social networks, and bonds with mentors or role models. For example, Mrs. Flowers commended rural community life for being an asset to her daughter's leadership skills, believing that it was easier to develop relationships with neighbors and others in the community in a rural environment. Those relationships, in turn, could be a catalyst for learning skills and making connections with people who can teach a child "new things, different things than what they might learn from their parents."

Benefits of a Small Rural Town

More specific to the theme of place and rural living, parents related their first graders' opportunities for leadership development in a rural community to opportunities for leadership

development in urban communities, indicating they believed each context had benefits and drawbacks, but especially celebrated the unique aspects of rurality. All parents had worked in and parented in an urban community. At the time of this study, each lived and was parenting a first grader in a small town within a rural county. Thus, each had experiential knowledge of both the rural and the urban context for leadership development.

According to the parents, some of the major benefits of living in a small, rural community are made available by government bodies. They named concerts, literacy events, festivals, and many family-friendly events that take place at a local town park or at the local college as cultural events that gave children exposure to things that they might not otherwise encounter. Parents acknowledged that urban communities have many more cultural or community events than rural towns and a greater variety of choices, yet they felt a rural town with many events had more opportunities for leadership because there was a greater likelihood that parents and children alike could find a leadership role to play. Mr. Flowers noted that by "getting involved in the behind-the-scenes business" of the event, either as an adult role model or as a child, one not only can enjoy and learn from some of the activities presented but also "can help bring the event to fruition."

Mr. Flowers said that he loved his rural community and the lifestyle it represents because it is "a school environment, whereas cities, bigger or smaller, are not a school environment." He went on to list organizations available for leadership development, such as "Boy Scouts and Girl Scouts" and then elaborated on the things he loved about living "near a college town" such as "the performing arts," "all different kinds of athletics," and "tutors and academic help when children need it." He said that the children in the community are "exposed to a ton of culture." He also liked that so many things were free, such as college lectures and nature preserves. He explained, "You can go to the city and have a lot of fun. If you want to focus just on education there is plenty to do here." He believed that local opportunities "help kids develop a lot of stuff mentally. By being exposed to this wide range of opportunities, they can be challenged." He also appreciated that rural small town life has "limited distractions." He believed there was plenty to keep young minds engaged but that children are "not always on the city bus trying to go downtown to the mall."

Small Rural Town Size and Support

Despite the fact that smaller communities may not be able to offer as many activities or resources, parents felt that small towns had ample opportunities for leadership development and celebrated the aspects of rural community life that support it.

Mrs. Sawyer had this to say about opportunities for leadership development in the rural community where she and her husband chose to move:

> I think [this community] has a lot of things, little things. Oh, it would be great if we had our own zoo, you know, things like that. But in reality, it is not that far away to go to those types of things. There are enough programs between what the churches offer, the athletic type things that are offered here, and the programs and things that the local college sometimes do that I think you can get a lot of growth and leadership opportunities for your kids.

Although she thought that lack of transportation could be a hindrance for young leadership development, making it more difficult to responsibly show up for extracurricular activities, Mrs. Sawyer thought that short distances coupled with a rural community mentality of helping others would allow a determined person to overcome the lack of transportation. She explained:

> If you were really low income and you didn't have a car . . . now that could be an issue, but that . . . it's just not that far . . . it just depends on where you live. But just a little bit because the town is just not that big. You could! You could do it. Or ride a bike to go places . . . to the library and stuff like that. You could get a bike cheaply if you really wanted to do that. Heck, if you even told your church that your kids didn't have bikes and you couldn't afford it and they needed them to accomplish this or that, somebody would come through with a bike, new or used.

Community Involvement

Mr. Flowers talked about opportunities for community involvement, such as working behind the scenes at a local event. Likewise, Mr. Sawyer believed that being civic minded and active in the community as an adult is important in building social networks and is a way to model leadership for the children. He is more active currently than he was in Baltimore or Houston and said that it is "just kind of expected when you live in a rural community." He added:

> I think you need to lead by example. . . . You have to set an example. "Guys, this is part of what you do. When you live in a community, you've got to participate in the community." They see us. They always see [their mother] doing her Junior League stuff and me doing soccer stuff and Knights of Columbus. . . . So they see how much time both of us take. So, you know, you are participating in the community. You have to.

Benefits of Rural Small Town Schools

Mrs. Pillsbury felt that rural small town life offered ample opportunities for her youngest child to develop leadership skills and compared the experiences her youngest daughter had in a rural small town to the experiences her older daughter had in Dallas. She said, "Well, I think it is better in [this rural community] than in other places that we have lived. You are probably going to think that I am crazy for saying this," and and she went on to describe why she likes the local schools better than the urban schools she had experienced. She appreciated that there is a "broader range of socioeconomic levels in the schools here." She continued the comparison of her local experience to her experience in a high-income Dallas suburb:

> Anything that went on in the schools [in Dallas], the parents were just all over it and they did it. They did a good job, but the kids were just shuffled around and told what to do. The kids weren't doing any of the creating or planning. . . . The kids are just like "tell me what to do and I'll do it." Then they are just like these fine porcelain dolls that we stand around and look at.

In her youngest daughter's rural school there was a very different experience where the children produced their own play, and the mother said that the latter was definitely a greater "opportunity of leadership building." She described the school play as being supported and facilitated by the teachers, but said that the children were given a lot of opportunities to create. As a result, the play might have been considered "really cute," "well planned," and possibly "not polished," but at the same time, the parents appreciated it, and the children took complete "ownership," which amplified the pride factor exponentially.

In a different discussion about his daughter's opportunities for leadership development, Dr. Pillsbury also talked about the local schools. He readily admitted that as he and his wife contemplated moving from Dallas to Riverdale, he saw the schools and their relative lack of facilities in comparison to what they were accustomed to in the Dallas area and was hesitant to make the move. After speaking with the school principal and touring the school, however, his confidence grew because he saw the small class sizes, the passion that the teachers exhibited, and "the potential."

Benefits of Rural Small Town Sports

Dr. Pillsbury went on to discuss other attributes of the rural small town life he and his wife considered prior to moving to Riverdale. He thought sports were good for a variety of reasons, including developing good health habits, building self-discipline, and making friends. He saw a wider variety of sports available in Dallas. However, he felt that there was a limitation to what sports can to do to develop leadership skills. He commented,

> You know all of that stuff, people talk about how it taught them to work with a team and be a team member. I do think it is important. I think a lot of people put way more emphasis on that than they should though.

In addition, Mrs. Pillsbury believed that there were greater opportunities to get involved in several high school sports in a rural community, whereas in cities "they start in the middle school kind of narrowing you down so that you are only on track to play one sport per semester."

Individually, each set of parents talked about participation in sports as being an opportunity for leadership development, but each also commented that academics took precedence over sports in their family's life.

Church Influences

Families frequently mentioned church as an influence on their young leader. Church-based influences that have a positive impact on leadership development included building interpersonal relationships within the church, learning church teachings, being organized and showing respect for others by being punctual to church, extending a helping hand to the less fortunate, and expressing care and empathy for others. Parents who took leadership roles in their respective churches thought that their children seeing them enact leadership roles as public speakers, educators, persuaders, or event organizers were influential experiences. Although parent leadership roles were discussed at home, rarely did the children see their parents in leadership roles at work.

Neighborhood Influences

Every parent mentioned neighborhood influences on leadership development. They talked about neighborhoods being zoned for different schools, mention that this was a deciding factor on where to purchase their home. In addition, most of them talked about ensuring their children had opportunities to play outside in the neighborhood, with siblings, friends, neighbors, and cousins, and their belief that these opportunities helped children develop skills in compromising, negotiating, and decision making.

Mrs. Bigsby talked about changes that have occurred over time in neighborhood play for children. Having grown up in New Orleans and having parented her older daughter in Dallas, she had a basis for comparing urban and rural opportunities for leadership development. She noted how living in an urban environment influenced her opinion of best parenting practices, which in turn affected her son's opportunities for leadership development. She noted that when she was young her mother allowed her to go visit at homes in her New Orleans neighborhood. She recognized that other people in the community were trusting of their neighbors and allowed their children to visit other people's homes independently. However, she had safety concerns about allowing that kind of behavior for her son. She recognized this concern stemmed from her experience of high crime rates in urban environments where she had lived as an adult, coupled with her experiences as an adult educator in a men's correctional facility. She affirmed the importance of her son interacting with neighborhood children in order to build his leadership skills, but she placed parameters on that interaction. She admitted,

> I am one of those kind of moms who . . . I am not old school, but when they are outside I am going to be there or I am going to be watching out of a window. . . . You know, you may think that you are safe, but you never really know. . . . Groups get together at my house and play by our rules. So it is still . . . he is still in his own world. I don't give him the chance to explore too much . . . well, I am just really protective on that aspect.

She went on to say that most the boys her son played with in the neighborhood were older than him, and even though she supervised those neighborhood interactions, her son showed leadership skills when interacting with the neighborhood kids. Examples of his leadership in that context included having "strong character" and letting others know when they had broken the rules. She explained:

> If something goes wrong, [my son] is going to speak up. . . . He makes mistakes, like the best of us, but he knows to do the right thing even if no one is looking. That is what strong character is, doing the right thing even if no one is watching.

Other parents also pointed out that time and place made a difference regarding outside play in the neighborhood. Mrs. Pillsbury, in particular, expounded on that in her journal. In her time in Dallas she saw this:

> A young child's time was too regimented; parents were too involved and controlled every aspect of everything from play dates to activities

> in the school during school hours. This affected the children's confidence and their ability to make decisions and adequately handle social situations. As a result, leadership development was lagging.

She then made a comparison to outdoor neighborhood play during her childhood:

> This was different from my childhood where parents did not get involved in our play activities (unless someone got hurt). . . . We roamed the neighborhood and woods and had lots of unregimented playtime. We planned our own activities and games and most of the time handled our own disputes and problems. It wasn't always done with thoughtfulness or kindness, but we learned along the way how to deal with each other. We developed self-confidence and other leadership skills by being allowed to experience the good and bad of interacting with others and by being allowed to make a lot of our own decisions and to suffer the consequences of them.

Benefits of Technology

Parents were interviewed individually, but often similar topics arose. Interestingly, having internet access was mentioned by many parents as a resource for leadership development. Mrs. Sawyer said, "I definitely think that technology has opened whole new worlds for kids."

Mrs. Bigsby looks for opportunities to get her boys involved in structured activities. She stated:

> My mother always has her ear to the ground about things, especially things for the kids. A lot of things the school will send home. . . . I am always looking for stuff to put them in to keep them structured and to keep their time used well. . . . I love researching, so I'll turn to the internet in a heartbeat.

Mr. Flowers was excited about the community's recent upgrade that allowed for faster and more reliable internet service, thus making his rural community better connected with the world. He made this comment while talking about the need for leaders to be informed and able to make good decisions:

> Education is a resource to help you to be able to be informed. When all that stuff splashes on the news and stuff . . . there a lot of people that just be watching the news and have no idea what those people are talking about. But if you have enough education, you can research it for yourself. With a click [of a mouse] you can find out exactly, yeah, you can research that for yourself.

Extracurricular Activities

All of the parents felt that extracurricular activities were an important mechanism for building leadership skills. All of the first graders involved in the study have older siblings, and the parents said the younger children were often "dragged" to the events of the older children and therefore saw extracurricular activity participation as "normal." Although the first graders are young, they too are involved in extracurricular activities at a limited level. People and activities associated with church, sports, Cub Scouts, after-school programs, and special events or camps were named as leadership resources by parents.

The mothers, in particular, mentioned the importance of the "mommy network" that existed. E-mails and texts were exchanged that helped the mothers make sure their children had the materials and schedules needed to help them in being prepared and successful for school and extracurricular events.

Summary of Parent Voices

One or more parents from each family noted that rural community opportunities for young leadership development were ample if parents were willing to look for them. Though they recognized that larger metropolitan areas offered a wider variety of choices for extracurricular activities and cultural experiences, they did not feel that they had given up anything of importance or deprived their children of any opportunities by choosing to raise their families in a rural context. In contrast, Mrs. Pillsbury sang the praises of rural small town life as having better opportunities for her daughter to develop her leadership skills, and this quote summarizes her view nicely:

> Everybody seems to think, "Oh, big city, you are more sophisticated, you are more whatever," but I don't necessarily find that. I think people tend to get lost in cities. So, when you are in a smaller community, you have an identity and all that, some of the chances of getting lost in the shuffle and mix is less. I think in a small town you have more opportunity to get involved, to shine, and therefore more opportunities to develop those leadership skills and become a leader.

Discussion

This study was a qualitative examination of beliefs, contextual factors, and practices within the families of four children identified by their classroom teachers as strong leaders. The teachers perceived the children to have skill sets that allowed them to maintain social relationships within groups and make changes that either improved problem solving or advanced the level of thinking in the group. Conducting in-depth interviews with seven parents, although a relatively small number, made possible an examination of individual parent and family components in contexts in and out of school. Like following a single thread through a woven rug, the theme of "place" was followed and investigated because even though it was not a topic originally planned, several parents mentioned a comparison between their current rural community and urban places they had resided in the past. Though the theme of place is the focus of this article, it cannot stand alone because of the interconnectedness of people, contexts, and experiences. This interconnected system was viewed through a theoretical lens based on the bioecological model of human development that grew from Bronfenbrenner's (1979) research.

Parents in this study believed that early childhood leadership was strongly influenced by interactions with other humans and influences from the family, community, and world. The contextual factors parents believed were influential on their child's leadership development demonstrate each of the five interrelated spheres of development outlined in Bronfenbrenner's bioecological model of human development. Figure 1 organizes the influential factors on early childhood leadership discussed by the parents in this study into each layer of Bronfenbrenner's model.

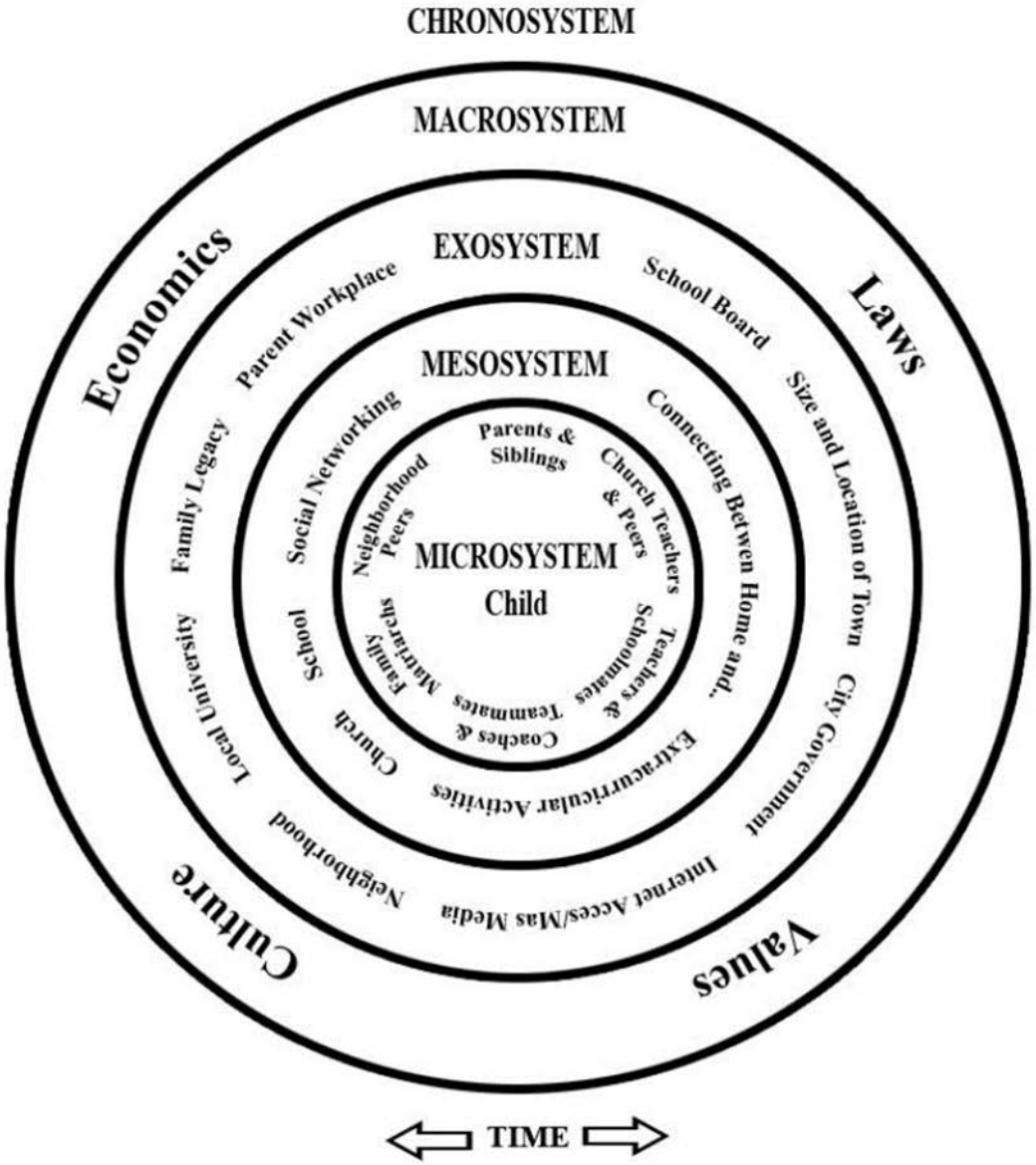
The developing leader exists in the microsystem where individual development occurs. The microsystem also includes all of the people with whom the child has face-to-face interactions and with whom the child develops a personal relationship, including people in the home, such as parents and siblings. People the child interacts with in the school environment, teachers and schoolmates, also have an impact on the child's leadership skills. Those who were influential in extracurricular activities included teammates or peer club members, coaches, and other adult leaders. Church members who influenced young children's emerging leadership included peers, teachers, and church leaders who acted as role models, especially parent role models for public speaking and helping others. Neighborhood children also influenced the young leaders in this study.

The mesosystem is the part of the bioecological model of human development that connects different factions of the microsystem. Connections between home and organized community activities such as church, sports organizations, and the child's school were well represented in the mesosystem by the families interviewed. Parents thought that building their children's social network of people who know and care about them was important and thus gave their children many opportunities to interact with and develop relationships with people outside of the family. Important communication tools that parents mentioned as connectors of home to other contexts included notes sent home, internet, mobile phone, e-mails, and texts.

The exosystem is defined as the layer of the bioecological model of human development that is a part of society that developing leaders have no direct contact with; however, the events that occur within it are influential to their development. Family legacy, church history, parent workplace, small town/rural context, local college, school board, government bodies, internet access, and neighborhoods were all cited by parents in this study as having some kind of influence on

Figure 1

Parental perceptions of influences on young leadership development as viewed through Bronfenbrenner's bioecological model of human development (Hailey, 2013).



leadership development, yet the regulations, expectations, or influences of each of the aforementioned aspects of the exosystem had an indirect impact on their young children.

The macrosystem is the broad, overarching societal influences that surround and influence each of the smaller systems of Bronfenbrenner's (1979) bioecological model of human development discussed thus far. This is an overarching level of the society the child exists within, including social, cultural, political, and historical influences. Values, economics, laws, and culture were influential elements on the young children's leadership skills according to the parents. The social milieu and values of a rural small town where people hear about others in need and reach out to help were part of this discourse. Values included a quality

education, a strong work ethic, a sense of treating others with consideration, the importance of making good decisions, and a sense of history about family and church. Economic influences on leadership were also discussed. Parents in this study believed that economics played a role in leadership development, as middle income gave children more opportunities for leadership development and lower income could be a hindrance due to lack of funds for participating in extracurricular activities or having transportation to fully participate in extracurricular activities. Laws that influenced political decisions played a role, as the local school board determined boundary lines of schools' districts, thus determining which neighborhoods were zoned for specific schools. This in turn was a deciding factor in location of each family's home purchase and, consequently, their child's neighborhood, neighbors, schools, teachers, and classmates. The culture of rural small town life was distinctly apparent, with such characteristics as small schools with limited resources, small class sizes, helpful acts from community members, opportunities to get involved, opportunities to get to know people, ability to get from one place to another easily, and occasions to play with siblings, neighbors, and cousins. Culture/history played a role as children were taught about morality and approved behaviors through church stories and family stories. In addition, culture and values played a role in family lifestyle changes that, in turn, affected the expectations associated with outside play time.

Lastly, the chronoystem affects every level of the system, but its influence is particularly evident as time affects culture and values. More specifically, time allowed advances in technology that brought about the extensive ownership and use of home computers and mobile phones, making internet/mass media and electronic communication and social networking more accessible. In addition, the chronosystem is reflected in differences in typical play opportunities for children, from outdoor free play and roaming the neighborhood to more supervised play opportunities.

Because every individual exists within a family unit within a community within society at large, it is important to realize that none of the contextual levels discussed can be considered as separate bodies; all are connected and influence one another. An individual develops within the child-parent relationship, which in turn is embedded within the family context. The family shapes and is shaped by the quality of the relationships it has outside of the family and within the community at large. The larger society and history in which the family is embedded indirectly influence the world that an individual lives and develops within (Bronfenbrenner, 1999).

Conclusion

Identifying leadership characteristics as exhibited by young children is elucidated through this research. More to the point, though, we present some parenting practices and contextual situations that aid in young leadership development. Specific to context, parents in this rural community do not focus on a deficit mind-set of rural living, as is often the case of rural dwellers (Griffin & Galassi, 2010), but instead applaud the many opportunities that rural small town life offers for young leadership development. Through this research, rural parents and educators are acquainted with the many opportunities their communities offer to young children through the schools, extracurricular clubs and events, churches, athletic events, community involvement opportunities, and relationships with neighbors and community members that have the potential to help them develop leadership skills and dispositions.

The interconnected contexts a child lives and interacts in are certainly influential in overall development and, specific to this study, early leadership development. In this limited study, interviews with parents of young leaders indicate that rural communities allow fewer opportunities for leadership development than urban communities but that there were ample opportunities in rural communities if parents take advantage of available resources. The parents in this study have lived in larger areas with a larger number of resources but made a conscious choice to raise their family in a small rural town where people know and support one another. The quality of those relationships and their associated leadership development opportunities took precedence over the quantity of the opportunities in a larger community. Though

leadership development was not specifically on their mind at the time they made their residence choice, they recognize that many of the citizenship characteristics they wanted their children to develop in a rural context are also a part of their own personal construct of what leadership looks like in action. For teachers, coaches, extracurricular activity leaders, church leaders, and caring neighbors, the view from the opposite side indicates the importance of taking an extra step to develop meaningful relationships with parents and children in group dynamics in order to help young children in rural contexts meet their potential. In summary, this collection of parent voices offers thoughts from both the maternal and paternal perspective regarding rural opportunities for early leadership development and shares insights into parenting practices that support early leadership development.

Limitations

This study had a small number of participants, all of whom resided in a small geographical area at a particular point in time. To enhance the possibility that this study may be informative to other contexts of similar makeup, an attempt was made to provide a rich description of families' beliefs and practices. To avoid any threat to the trustworthiness of this research, triangulation of data was used to support the results. However, by limiting the sample to only children who exhibited leadership in the academic setting, leadership and academic achievement may have been confounded. Another point to consider is that in small rural towns teachers often have double duty as teachers and as coaches or club advisers. As such, there is a likelihood that closer relationships are developed between teachers and young leaders who frequently participate in extracurricular activities, so the young leaders are more likely to perform better academically in order not to disappoint the coach, advisor, mentor, and/or teacher (Barley & Beesley, 2007).

Future Research and Implications

Future research should consider initially determining young leaders from contexts other than the school setting. By seeking out adults from other contexts such as church or extracurricular activities to act as informants of young leadership demonstration, there is less likelihood of confusing leadership with other constructs such as academic achievement. Griffin and Wood (2015) posit that teachers and school administrators who recognize children with potential leadership skills should offer learning opportunities for the parents of identified children on topics such as relationship building, open communication, and community asset mapping. Future research could consider training rural parents in community asset mapping to help them determine the potential for their children's leadership growth in the rural setting. In addition, children could benefit from reading stories about other children who acted as leaders in a rural environment in literature selections, thus providing a springboard for discussion about sense of place and an empowering tool for enactment of leadership (Waller & Barrentine, 2015).

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Trauma-Informed Practices in Rural Education

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The overall wellness and well-being of today's youth are of concern owing to high levels of stress, as well as other mental and physical health issues. Academic success can be negatively impacted because of the interconnectivity of these issues, along with traumatic childhood experiences and high numbers of adverse childhood experiences. In rural areas, these issues can be even more pronounced owing to issues related to socioeconomic status and high rates of poverty. Therefore, it is important to explore interventions in the educational setting that could mitigate the negative impact of these challenges. This pilot study examined the relationship between a trauma-informed approach incorporating yoga/mindfulness and academic, social, and emotional behaviors among fourth graders in a rural academic setting. Student and teacher pre- and postintervention survey data indicate the intervention had academic, social, and emotional benefits.

***Keywords*: trauma, rural education, adverse childhood experiences, yoga, stress**

The overall wellness and well-being of today's youth are of concern due to high stress levels, as well as other mental and physical health issues (Cook-Cottone, 2017). Many children find it difficult to succeed academically when their experiences outside the classroom involve mental and physical health challenges interconnected with issues related to socioeconomic status, traumatic childhood experiences such as abuse or neglect, and high rates of poverty. For example, in the county where this research took place, 46.5% of students were eligible for free and reduced lunch during the 2016–2017 academic year (Annie E. Casey Foundation, 2019); similarly, 47.3% of children in the same county in 2011–2015 were living in deep poverty, that is, in households whose income is 50% or more below poverty income level ($12,125 for a family of four in 2015; Annie E. Casey Foundation, 2019). In terms of traumatic childhood experiences, there were 146 verified cases of abuse in the same county between July 1, 2016, and June 30, 2017, most of which were for physical neglect (Virginia Department of Social Services, 2017).

While poverty does not imply neglect or abuse by any means, when the two co-occur the student is doubly disadvantaged, as was the case in this research setting with many of the participants. Even youths not experiencing these types of challenges are attempting to cope with external stressors; therefore, it is imperative to provide all students, and especially those facing adversity, with tools for stress reduction and self-regulation (Burke-Harris, 2018). According to research, yoga and mindfulness can greatly benefit all students in these areas (Butzer, van Ovfer, Noggle Taylor, & Khalsa, 2015; Cook-Cottone, 2017; Khalsa, Hickey-Schultz, Cohen, Steiner, & Cope, 2012).

Kaiser Permanente and the ACE Study

The impetus for this research project stems from the landmark Centers for Disease Control and Prevention (CDC)–Kaiser Permanente Adverse Childhood Experiences (ACE) Study conducted in 1995–1997. In this study, over 17,000 mostly white, college-educated, employed adults were screened for prominent childhood traumatic experiences as

part of their routine health care at Kaiser. A staggering number of respondents reported some form of abuse, neglect, and/or household dysfunction (Felitti et al., 1998). Because of these shocking study results, the CDC continues ongoing surveillance of adverse childhood experiences (ACEs) by assessing the medical status of the study participants (CDC, 2016). Additional research is investigating how children exhibit symptoms of ACEs in their youth; current symptomatology includes excessive disciplinary referrals and chronic absenteeism, which was the motivation for this pilot study.

Children experiencing traumatic events often display their symptoms outwardly, in various forms. Students can have difficulty with managing "big" emotions and experience chronic irritability and anxiety that interferes with problem solving. They also have difficulty expressing empathy for others, being able to express their concerns and needs in words rather than the wider context of a situation, lack the ability to appreciate how their behavior impacts other people, and struggle with working productively and positively in groups or connecting with their peers (Bloom, 2007). Further, compared to students with lower ACE scores, students with three or more ACEs are 2.5 times more likely to fail a grade, score lower on standardized tests, and experience more suspension/expulsion; are more likely to be referred to special education; and have poorer physical health, leading to poor attendance. They also have difficulty storing and processing new information, struggle with social communication and perspective taking, and have trouble with problem solving, critical thinking skills, cause-effect relationships, and sequential organization while concurrently wrestling with emotion regulation, which often appears as reactivity and impulsivity or displaying signs of aggression, defiance, withdrawal, and/or perfectionism (Litgen, 2013; Massachusetts Advocates for Children, 2005). These difficulties in higher-order thinking and cognition fall under the theoretical framework of Abraham Maslow's (1943) hierarchy of needs, which posits that children cannot engage in complex learning tasks when threats to physiological/survival needs and/or physical/emotional safety are present. Because children who have experienced ACEs struggle in executive functioning and regulation skills (because of real or perceived threats to safety and survival), this study sought to mitigate these factors to allow students to engage more fully in the cognitive and psychological demands of a typical school day.

In addition to impaired academic and social behaviors, children exposed to trauma also become highly susceptible to many dangerous medical behaviors and health outcomes. Not only can chronic exposure to stress hormones suppress the immune system and lead to autoimmune diseases in children and adults, but also, on average, people with a high ACE score (6 or higher) have life spans shortened by 20 years (Burke-Harris, 2018). Adults who have moderate to high ACE scores (3 or higher) are 242% more likely to smoke, 222% more likely to become obese, 357% more likely to experience depression, 443% more likely to use illicit drugs, 298% more likely to contract a sexually transmitted disease, 555% more likely to develop alcoholism, 400% more likely to develop emphysema or chronic bronchitis, and 1,200% more likely to attempt suicide (Burke-Harris, 2018). These health outcomes potentially lie ahead for all students exposed to traumatic events, but students located in geographically isolated areas are even more likely to experience adverse events than those in urban settings (Talbot, Szlosek, & Ziller, 2016; U.S. Department of Health and Human Services, 2015). Therefore, it is paramount to explore practices that offer the potential to alleviate the impacts of ACEs in school settings.

Community-Based Participatory Methodology

Community-based participatory research (CBPR) was used as the conceptual framework for this study. Kurt Lewin and Paulo Freire laid the foundation for CBPR in the 1930s, when they emphasized an iterative cycle of "action, reflection, and experiential learning" in conducting research in communities (Faridi, Grunbaum, Gray, Franks, & Simoes, 2007, p. 1). Israel, Schulz, Parker, and Becker (2008) defined CBPR as focusing on "social, structural, and physical environmental inequities through active involvement of community members, organizational representatives, and researchers in all aspects of the research process" (p. 173). For the

purposes of our pilot program, we focused on partnering with a local school system and a nearby college within a rural, Appalachian community to address issues surrounding ACEs with local elementary school students. The school district leaders created their own purpose, questions, and aim for the study rather than being guided by our own research agenda. Further, the collaborative process allowed for sharing of resources, making the program more sustainable. Moreover, it was our intent to empower stakeholders to continue action research on children with traumatic exposure after the conclusion of the pilot study while continuing the partnership with our institution (Holkup et al., 2004).

The genesis of the study was through college outreach to the local school system. In this outreach, members of the school district expressed a need to address students with ACEs, particularly those impacted by the opioid crisis in the rural area. Collaboratively, the district and the researchers' institution formed a partnership to launch a pilot program for trauma-informed yoga at the local elementary school. Fourth grade was identified by the district for the study, and since yoga aligned with the state's physical education standards, the program took place during students' physical education classes to encourage participation and retention in the study. School and district leadership, as well as the physical education and homeroom teachers of the fourth-grade students, were actively involved in the implementation and data review processes of the study. Based on the positive outcomes we describe here, the district leadership expressed a desire to continue the study at the middle-level school in the district the following academic year, continuing the collaborative process.

Chronic Absenteeism and the Importance of Physical Activity in Schools

According to a report issued by the Robert Wood Johnson Foundation (2016), students who have experienced trauma are more likely to have higher rates of absenteeism, which are linked to lower academic achievement, and those students are also less likely to graduate (Miller & Johnson, 2016). Additionally, students with chronic absenteeism are more likely to engage in risky behaviors (Miller & Johnson, 2016). As a result, some states are currently working to reduce rates of chronic absenteeism by using trauma-informed practices (Blad, 2016). Particularly in the state of Virginia, in which this study was implemented, efforts to provide promising practices using a trauma-informed lens may also positively impact rates of chronic absenteeism. Chronic absenteeism in Virginia is defined as "being absent for at least ten percent of the days enrolled" (Miller & Johnson, 2016, p. 1). Since most school districts in Virginia follow a 180-day cycle, the number equates to 18 days, or approximately 2 days of absence per month (United Way of Southwest Virginia, 2017). During 2015–2016, the chronic absenteeism rate for public school students in Virginia was 13.8% (Hamilton Project, 2019). This data set defined chronic absenteeism as 15 days or more. In rural areas in Virginia, the rate was 15.3%. In the county in which the research was conducted, the rate was 16.1%.

Multiple factors impact students' chronic absenteeism, including negative experiences at school. According to Liu and Loeb (2016), schools and teachers can sometimes create unpleasant spaces and experiences for youths. For example, in physical education classes, many students report negative experiences related to an overemphasis on team games in which a "pecking order" for choosing teams results in a humiliating experience for students who are less physically inclined (Cardinal, Yan, & Cardinal, 2013). Providing opportunities for physical activity like the yoga activity implemented in this study can have a 2-fold benefit. First, the breathing, stretching, core strength, and flexibility exercises create a positive and supportive environment in which all students were able to succeed. More important, students begin to learn that movement and breathing can be one of many "tools for their toolbox" to help them cope with trauma, poverty, and other challenges to learning that are outside their control. This orientation is very different from many physical education classes within the United States, which place an overemphasis on competition. According to the Society of Health and Physical Educators (SHAPE), appropriate instructional practices for the learning environment include helping children "understand that some students prefer competitive

situations, while others don't; and either preference is acceptable" (SHAPE America, 2009, p. 9). By viewing the issue of chronic absenteeism through a trauma-focused lens in the physical education environment, we can help students ultimately come away with a more positive and rewarding experience that could impact their future participation in physical activity and provide them with coping skills for a lifetime (Cardinal et al., 2013). From a global perspective, other countries are also beginning to explore the potential for promoting mental health within physical education. In Switzerland, a new curriculum for physical education specifically addresses stress management (Lang et al., 2016).

Along with the benefits already discussed, in rural educational environments additional positive outcomes result from providing physical activity informed by a trauma-sensitive approach. According to Talbot et al. (2016), the most common ACE was "childhood exposure to a household member's abuse of alcohol or drugs" (p. 4). Youths residing in rural areas are much more likely to experience the adverse effects of opioid abuse. The National Child Traumatic Stress Network (2018) indicated that rural adolescents were 35% more likely to abuse prescription opioids compared to those residing in large urban areas. For those residing in Virginia, the opioid crisis has resulted in passage of legislation to help combat the epidemic, which includes requirements specifically to use a "trauma-informed approach" to support substance-exposed infants and their caregivers (Tabackman, 2018). Once children become old enough to attend school, experiences employing a trauma-informed lens can continue to support this legislation. Among other neurological and physiological benefits, exercise releases endorphins and helps reduce stress (Cook-Cottone, 2017). Research also suggests that physical activity can serve as one of many tools for a child's toolbox to combat substance abuse in youth (Simonton, Young, & Johnson, 2018). Memory and learning processes, as well as overall psychological well-being, are enhanced with regular exercise.

Rurality and ACEs. In addition to issues of chronic absenteeism, poverty and low educational attainment have long been concentrated in rural areas, as is the case for this study site. The impetus for this study was grounded in the understanding that "trauma can impact the development of social, emotional, and cognitive skills in ways that result in difficulties adjusting to the demands of school" (Jennings, 2019, p. 1). Specific to rural communities, research suggests that challenges are often greater for students in rural settings than for those in more urban or suburban areas (Sanchez, Usinger, Thornton, & Sparkman, 2017; Witherspoon & Ennett, 2011). Educational challenges range from recruiting and retaining qualified, competent, and ethnically diverse teachers to rural poverty, which were described by Stelmach (2011) as a "persistent macrosystemic issues related to rural education" (p. 35).

A 2015 Health Resources and Services Administration report found that rural children were more likely than urban children to experience certain kinds of adversity (U.S. Department of Health and Human Services, 2015), and a 2011–2012 national survey of children's health found that rural children were more likely to experience ACEs than were urban children, in part because rural children are more likely to live in poverty than their urban counterparts (Lukens, 2017). In a recent study, Talbot et al. (2016) found that, while the prevalence of ACEs was comparable in rural and urban adults, over half of rural adults surveyed reported having ACEs. Among those with any ACEs, about one-quarter experienced four or more ACEs (Talbot et al., 2016). In another study, Lukens (2017) reported that over half (56.5%, CI = 55.6–57.3) of rural respondents indicated they had experienced at least one ACE: about one-fifth (21.8%, CI = 21.1–22.6) reported one ACE, 12.0% (CI = 7.7–8.7) reported two ACEs, 8.1% (CI = 7.7–8.7) reported three ACEs, and 14.6% (CI = 13.9–15.2) reported four or more ACEs. Possible explanations for the high prevalence of ACEs in rural center on rural health care environments, which receive inadequate funding, encounter barriers to electronic health records due to unavailability of high-speed internet access, endure limited access to high-quality medical and behavioral health professionals, and suffer from geographic isolationism and lack of proximity to services (U.S. Department of Health and Human

Services, 2015). Older citizens with elevated ACE scores may be less likely to participate in ACE surveys due to higher rates of disability and morbidity relative to their age peers with lower ACE scores, and there also tends to be a prevalence of denial and fear of retribution in these areas on the part of social services providers; these environmental factors and socioeconomic disadvantages, in turn, place rural parents at heightened risk for experiencing behavioral health problems and may increase the possibility of engaging in child maltreatment (U.S. Department of Health and Human Services, 2015).

Another challenge specific to rural educational experiences is the remoteness (Liu, 2004). Distance and cost prohibit individuals from accessing opportunities available in more urban areas. One of those opportunities is the ability to participate in yoga. Yoga studios are usually located in more urban areas and require a monthly membership. Yet research indicates that tension, anxiety, memory, and other measures of well-being are improved in schools that incorporate yoga and mindfulness practices in the curriculum (Cook-Cottone, 2017). The goal of this study was to explore the relationship between academic, social, and emotional behaviors and a trauma-informed approach incorporating tenets of yoga and mindfulness in a rural academic setting.

Yoga as a Trauma-Informed Intervention. Nadine Burke-Harris (2018) proposed that one of the keys to reversing the physiological and psychological impacts of childhood adversity was exercise, along with relaxation techniques like meditation. According to recent studies, yoga and mindfulness can greatly benefit all students, and especially those that have suffered traumatizing experiences (Butzer et al., 2015; Cook-Cottone, 2017; Khalsa et al., 2012). These studies have found positive relationships between physical yoga practices and academic gains, along with a decrease in cortisol levels in children. Middle school students have also reported lower stress levels, higher-quality sleep, and improved academic performance (Butzer et al., 2015; Butzer et al., 2017). Further, exercise causes the release of brain-derived neurotrophic factor, which is paramount for learning and memory in the hippocampus and prefrontal cortex (Burke-Harris, 2018; Ratey, 2008). According to Khalsa et al. (2012), nearly 50 research studies on yoga as a therapeutic intervention have been published in the last 15 years, all reporting positive outcomes. Yoga has also been linked to lowering test anxiety, improving work habits, improving academic performance, promoting emotional intelligence, and facilitating cooperation, while also showing a corresponding reduction in stress levels, heart rates, and blood pressure (Khalsa et al., 2012).

Despite these positive outcomes, there remains limited research on yoga and mindfulness as a therapeutic intervention for students, especially older students and in studies with larger sample sizes and/or longer durations (i.e., longitudinal studies). This study adds to the growing body of research on yoga as a possible intervention for students by determining preliminary findings for academic and behavioral outcomes in a rural setting.

Research Question

For this study, the school district and authors sought to answer this question: Is there a relationship between a trauma-informed approach incorporating yoga/mindfulness and academic, social, and emotional behaviors in a rural academic setting? This question was approached using pre- and postintervention surveys of both students and their teachers to assess student academic, social, and emotional behaviors before and after the intervention protocol.

Methodology

Participant Selection

After approval by Emory & Henry College's Institutional Review Board, the study was conducted for 9 weeks in the spring of 2018, on Mondays and Wednesdays from 8:35 to 9:00 a.m., during specific fourth-grade physical education classes in a rural elementary school in Virginia; more than 95% of these students were Caucasian, and, per school administration, "many" came from low-socioeconomic-status home environments. However, because of the confidential nature of the data, researchers were not privy to individual

student free/reduced lunch information, which is linked to student socioeconomic status.

During this pilot study, instructional guidance for students regarding physically active ways to self-regulate and reduce stress was provided using adaptations of the Yoga Ed (yogaed.com) evidence-based, trauma-informed curriculum (Cook-Cottone, 2017). Due to parental and district-level concerns with possible religious connotations affiliated with the word *yoga*, the researchers deliberately did not use this term. Instead, students were instructed in ways to improve core strength, flexibility, and balance, as well as breathing techniques. Along with teaching these concepts, students were also taught about the neurological effects of trauma and stress in terms of their "upstairs" (limbic and brain stem) and "downstairs" (cerebral cortex) brain (Souers & Hall, 2016).

Experimental Groups

Two experimental groups were included in the study; one homeroom received the intervention twice per week for 9 weeks, and two other homerooms received the intervention once per week for 9 weeks, as a 9-week intervention period is considered typical for school-based interventions. Sessions were limited to 25 minutes each owing to time constraints within each physical education class and were led by the two researchers of this study, who are themselves veteran educators and researchers (one of whom has specific expertise in yoga, physical education, and physical literacy). Additionally, diaphragmatic breathing exercises were incorporated during each session to help strengthen and calm the central nervous system and to improve concentration (Cook-Cottone, 2017). Data were collected via pre/post surveys (adapted from Yoga 4 Classrooms (L. Flynn, personal communication, December 7, 2017); see Appendices A and B for survey instruments) administered to both students and teachers; teachers completed a survey for each student participant. While these instruments have not yet been validated, the researchers felt that, because this was a pilot study, these questions got to the core of what they sought to discover through this initial implementation. As mentioned earlier, the sample population was considered high poverty, and anecdotally, many of these students came from homes characterized as "difficult" by their teachers.

Findings

Three specific fourth-grade classes were involved in the study. One class received the intervention twice per week for 9 weeks. Data were collected from 18 students and the teacher via pre/post surveys. The two other classes received the intervention once per week for 9 weeks. Data were also collected from these classes via pre/post surveys from a total of 38 students (19 per class) and all four homeroom teachers. The survey included questions regarding social, emotional, and academic behaviors, as well as a section for additional comments (see Appendixes A and B). Overall, results from this study were positive in both intervention groups.

Student Pre/Post Survey Data

A descriptive analysis of the data from the pre- and postintervention surveys completed by the students (Figure 1) indicated that, in the social domain, the student perception of behavior improvement was 26.3% overall. The percentage was slightly higher (26.4%) in the class with the twice-weekly intervention than in the classes that received it only once per week (25.9%). In the emotional domain, the amount of student-perceived behavior improvement was 30.4% overall. Interestingly, the percentage was higher in the classes that received the once-weekly intervention (32%) than in the class that received it twice per week (26.7%). In the academic domain, student perceptions of improvement were 29.4% overall. The class that received the twice-weekly intervention had the highest perceived growth in this domain, at 32.1%, compared to 28% for the classes that received it once per week.

Along with the quantitative data, survey data collected qualitatively via written comments also indicated improvement in social, academic, and emotional behaviors of the students. A sample of comments is included in Table 1.

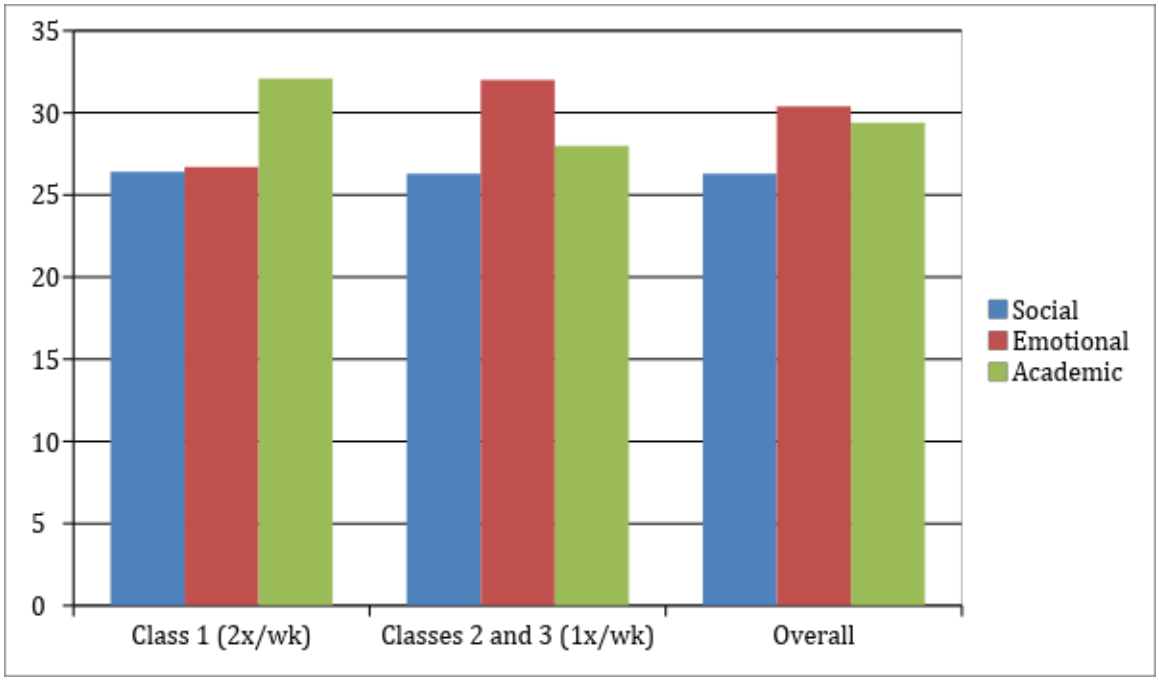

Figure 1. Student perceptions of behavior improvement, percent change

Table 1

Student Postintervention Survey Comments

"I found that the breathing exercises helped me calm down."
"I have stress at home. But I came over stress."
"Your exercises helped me a lot with all the topics. . . . The exercizes [*sic*] helped me to be calm after and to calm down when angry."
"The exercises helped control me a lot at school. :) But sometimes at home I have trouble controlling my anger."
"Sometimes I have anger anxiety and it helped me calm down and also when I'm upset."
"The exercise made me feel happy."
"I have a lot of joy as of the exercises make me happy. I have bad anxiety and stress so this helps me calm down a little. Thank you."
"I liked this, I think it will help when I get mad."

Open-ended comments from students indicate that the intervention was most beneficial in the emotional domain of managing stress, anxiety, and anger. Some students also indicated that the combination of breathing, stretching, flexibility, and balance exercises helped them feel happy.

Teacher Pre/Post Survey Data

An analysis of the pre- and postintervention survey data collected from all homeroom teachers (Figure 2) also indicated positive improvement in the domains of social, emotional, and academic behaviors. In the social domain, the teacher perception of behavioral improvement was 14% overall. The class that received the twice-weekly intervention showed 35.7% improvement. In both classes receiving the intervention only once per week, the teachers' perception of positive social behaviors was only 6.8%. The amount of improvement regarding the emotional domain was 28% overall. In the class that received the twice-weekly intervention, teacher perception of improvement in emotional behavior was 42.9%, compared to 21.3% in the two classes receiving the once-weekly intervention. In the academic domain, the teacher perception was 21% behavioral improvement among the students in all three classes, 31% in the class receiving the twice-weekly intervention, and 17.5% for the classes receiving the once-weekly intervention. Table 2 lists a sample of postintervention survey comments provided by the teachers. Open-ended comments from the teachers indicate that many students appeared happier overall, with positive improvements in attention as well as social and emotional behaviors.

Discussion

Overall, the results of the student and teacher quantitative and qualitative survey were overwhelmingly positive. The quantitative survey data showed improvement across all domains connected to traumatic exposure (social, academic, and emotional behaviors) in both experimental groups among both students and teachers. The homeroom teacher whose students received twice-weekly interventions reported more positive outcomes in every area of the survey than did teachers whose classes received the once-weekly intervention. In this homeroom, 50% of students self-reported improvements in loneliness (social domain), increased creativity in academic problem solving (academic domain), and improved attendance at school for reasons of "not feeling well" (academic domain); 42% of students in this class also reported a decrease in worry (emotional domain). When analyzing pre- and postintervention survey data, both teachers and students reported that the biggest improvements were in student emotional behaviors, followed by academic and social behaviors. In addition to the postintervention qualitative responses included in Table 2, one teacher noted in the preintervention survey comments a student whose father had died at an early age. Upon completion of the study, the teacher commented that the student's social behaviors had improved. With regard to preintervention survey comments provided by students, one noted on that "I am upset sometimes, so I may look upset/angry when I come in." His postintervention survey comments indicated that the intervention had helped him learn strategies for calming down when angry.

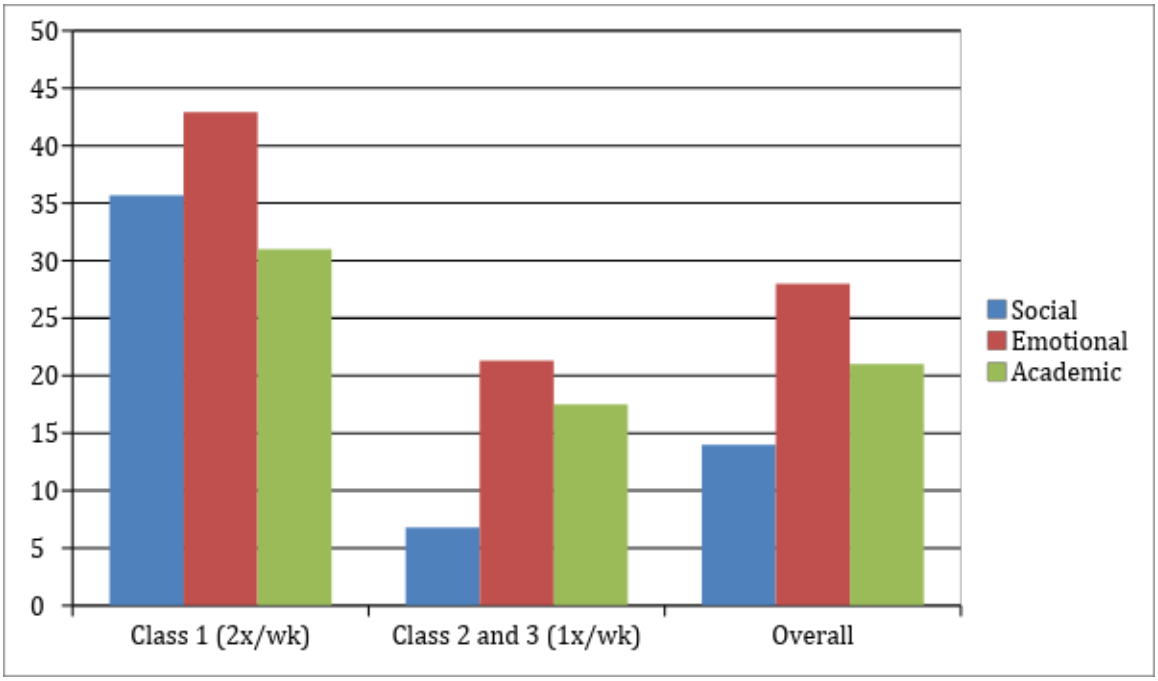

Figure 2. Teacher perceptions of student behavior improvement, percent change

Table 2

Teacher Postintervention Survey Comments

"This student appears happier and less stressed."
"More focused and more social towards the end of the year."
"Saw improvement with attention."
"Emotional and social behavior improved."
"All areas improved."

As noted by Burke-Harris (2018), the first step in creating a trauma-sensitive environment is to understand the impact of trauma and repeated adversity on the stress response, which ultimately leads to toxic stress. The resulting biological and neurological reactions often have a negative impact on the brain, thus setting the stage for various types of challenges, including but not limited to the academic, social, and emotional domains. The intervention in this study provided trauma-sensitive practices incorporating exercise and breath awareness (Burke-Harris, 2018; Jennings, 2019). The incorporation of exercise is beneficial on a variety of levels. According to Tate (2014), positive neurotransmitters in the brain are produced through movement. This is beneficial to the learning process, as indicated by studies showing a correlation between academic improvement and exercise (Ratey, 2008; Tate, 2014). Along with the physical intervention involving core strength, flexibility, and breathing exercises, students were also empowered with information to help them understand what happens in their brains when they begin to feel stressed. Utilizing Souers and Hall's (2016) model of the brain, students were taught how the "downstairs" (limbic and brain stem) and

"upstairs" (cerebral cortex) portions of their brains function. This information is helpful to students who may experience shame, guilt, or low self-esteem resulting from their actions stemming from the adverse effects of trauma (Jennings, 2019).

Study Limitations

This pilot study had multiple limitations due to its exploratory nature. Varying schedules provided difficulties with intervention implementation, such as cancellations due to snow, testing requirements that pulled students from their physical education block, and other changes in the overall school schedule due to special events. This program was only held as a 9-week intervention rather than a semester- or year-long intervention due to various scheduling constraints, so our intervention period was limited. Further, the sample was limited to fourth-grade students only, because of scheduling limitations, so only descriptive and qualitative statistics could be analyzed, as our experimental groups lacked an adequate sample size for further statistical analyses.

Our study also met with resistance from some students and parents among the study demographic, which was primarily Caucasian. According to information provided by the physical education teachers, some students and parents did not provide consent to participate in the pre/post survey data collection because the students did not want to deviate from their normal routine of games. They thought that refusing to participate in the study meant they would not have to participate in the core strength, flexibility, balance, and breathing exercises. However, all students participated in the physical activity, just as they would do for a unit on team sports. Further, because of our fairly homogeneous sample in terms of ethnicity, this study is limited in feedback from minority groups, which indicates a need for this study to be replicated in a more diverse environment.

This school also has a high mobility rate of students (which relates to the population's socioeconomic status and rural setting). Many students provided preintervention data, but then moved to another school/district so postintervention data could not be collected; other students moved to the school during the intervention period. Further, there were multiple student absences during each session of this program; chronic absenteeism, as discussed earlier in this article, impacted the reliability of the results of this pilot study. All absentee individuals provided postintervention data but were unable to provide preintervention data, as all were present for the post-survey but none for the pre-survey. Additionally, no absence data on students were collected, so exact data on specific students and the number of actual treatments received cannot be ascertained.

Lastly, the primary investigators who carried out this research were former K-12 educators (and current college researchers/professors) who followed a trauma-informed yoga curriculum but were not certified trauma-informed yoga instructors. Intended outcomes and perspectives may differ with a certified yoga instructor (or other noneducational professional).

Plans for Future Research and Implications for Practice

After reviewing the qualitative and quantitative data, we suggest that future implementation of this program should increase intervention frequency to a minimum of twice weekly for all students (and possibly increase duration to a minimum of 18 weeks/1 semester). Because results for the twice-weekly intervention group were more positive than for the once-weekly group, further research is needed with increased frequency and/or duration to determine whether a dose-response relationship exists with this protocol. Further, we acknowledge the survey instrument must be streamlined, clarified, and simplified to allow for better understanding, comprehension, and access of information, especially for students with lower reading levels and/or learning disabilities. The identification and implementation of valid survey instrumentation that addresses students' social, emotional, and academic impacts from this intervention is key for reliability and validity of future studies—both for students' and teachers' perceptions of impacts. Teachers also need additional classroom teacher support in the intervention strategy to create carryover and generalization between the physical education classroom and the academic classroom, because

we believe this intervention would be useful in both settings.

More data are needed to determine whether a relationship exists between this approach and academic/standardized assessment outcomes, as well as student attendance. However, the results of this study indicate an alignment with recommendations from the Association for Supervision and Curriculum Development (ASCD) and the CDC calling for a "greater alignment, integration, and collaboration between education and health, 'to improve each child's cognitive, physical, social, and emotional development'" (ASCD, as cited in Cook-Cottone, 2017, p. 26). This study further supports previous research by Cook-Cottone (2017), which suggests that interventions such as mindfulness and yoga can help students self-regulate and engage in ways that promote their overall well-being and ability to learn. For students who have experienced trauma, this type of intervention provides a way to calm their body in order to calm their mind. Many schools place great emphasis on social-emotional learning programs. The results of this research are similar to the findings conducted in those programs, which indicate improvements in social, emotional, and academic endeavors (DiPerna & Elliot, 2002; Durlak, Weissburg, Dumnicki, Taylor, & Schellinger, 2011; Schonfeld et al., 2015).

Along with the positive benefits derived by students, there is also promise for innovative practices in rural pedagogy that could positively impact teachers as well. According to Herman, Hickmon-Rosa, and Reinke (2017), 93% of elementary school teachers feel extremely stressed. Given the current teacher shortage throughout the United States, along with the high rates of reported teacher stress, it could be beneficial for teachers to participate along with their students in the breathing, stretching, and core strengthening activities. Although the study was conducted in a physical education setting, several tenets of the intervention could also be incorporated into a classroom setting.

Additional plans for future research and implementation involve an expansion of this project to other grade levels, especially at the middle level owing to the complex developmental needs of this age group. Implementation in rural and/or high-poverty settings where ACEs are more prevalent is also key, as it is important to determine whether these results are replicable; it would also be worthwhile to implement this intervention with cultural groups that have historical trauma, such as indigenous populations, to determine whether the program produce improved academic and/or behavioral outcomes. We would also like to determine whether student stress levels are reduced physiologically through this intervention, so our future research will include a measure of student salivary cortisol levels before, during, and after intervention. Finally, and perhaps most important, more professional development in trauma-informed care approaches and interventions for teachers and school administrators is vital in creating the necessary support structures for traumatized students to be successful in the school setting.

Conclusion

As indicated by data collected in this study, using a trauma-informed approach resulted in improvements in academic, social, and emotional behaviors through the implementation of physical activity specific to self-regulation and stress reduction. The yoga and mindfulness intervention helped regulate and manage stress and anxiety, as well as manage anger, for the fourth-grade students attending a rural school in Virginia. Along with the physical activity instruction, students were also educated in how their brains and bodies react to stress. By teaching students about their "upstairs" and "downstairs" brain and the subsequent actions and reactions (Siegel & Bryson, 2011), this can also help minimize children's negative self-labeling.

The trauma-informed lens is very beneficial in creating "an effective professional development system that will result in schools incorporating trauma-sensitive practices" (Montana Healthcare Foundation, 2017, p. 10). The importance of this research cannot be understated. According to a recent study published in the *Journal of the American Medical Association*, the prevalence of childhood trauma should now be considered a public health crisis (Copeland et al., 2018). As recognition of the importance of trauma-informed

approaches continues to gain momentum, it is important to research and explore options that provide benefits in the educational setting. Specifically, in rural communities it is vitally important to continue exploring innovative practices to foster student success.

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Appendix A

Student Pre/Post Survey Instrument (adapted from Yoga 4 Classrooms (L. Flynn, personal communication, December 7, 2017)

*Note: Students self-scored (and teachers scored each individual) based on a Likert scale of 1-5, with 1 rated as “not at all” and 5 rated as “a great deal.”

Social Domain
1. I get along with classmates easily.
2. I respect others’ property, opinions, and personal space.
3. It’s easy for me to control my reactions.
4. I get angry with others easily.
5. I feel lonely.
6. I get in trouble at school.
Academic Domain
7. It’s easy for me to pay attention in class.
8. I can easily concentrate on an assignment.
9. I get easily distracted in class.
10. It’s easy for me to come up with creative solutions to problems.
11. Learning comes easily for me, and I make good grades.
12. I have a hard time remembering things.
13. I miss school a lot because I don’t feel well.

Emotional Domain
14. I handle stress/anxiety well, like during big tests or presentations in school.
15. I consider myself a confident person.
16. I worry a lot.
17. I have a hard time calming down when I get upset.
18. In general, I feel happy.

Appendix B

Teacher Pre/Post Survey Instrument (adapted from Yoga 4 Classrooms)

Social Domain
1. Displays positive social interaction with classmates.
2. Shows respect for others.
3. In control of their behavior (e.g., be less reactive).
4. Ability to manage their anger.
Academic Domain
5. Has adequate attention span for instructional tasks.
6. Can concentrate on work.
7. Can stay on task.
8. Exhibits creativity in academic work.
9. Exhibits strong academic performance.
Emotional Domain
10. Can deal appropriately with stress and anxiety (e.g., during test taking or similar events).
11. Exhibits confidence/self-esteem.
12. Is usually in a positive mood.

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Thinking Outside the Box: Providing Effective Professional Development for Rural Teachers

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Despite the fact that they are all unique, rural school districts/divisions (in Canada and elsewhere) face similar challenges when it comes to providing effective professional development (PD) for teachers. Issues related to funding, geography, staffing, and contextual differences impact the availability of PD opportunities for educators in rural contexts; however, rural school divisions possess many strengths from which solutions to these challenges might be fashioned. The question of how rural divisions might construct local teacher PD models that draw on local strengths, mitigate local challenges, and support teacher professional growth is critical to the provision of quality education for rural students. Through a single-case study design, this study examined the effectiveness of a rural initiative, the Numeracy Cohort, that was locally constructed to mitigate challenges and improve mathematics instruction and student numeracy outcomes in a school division in Manitoba, Canada. Findings from the study suggest that (a) the Numeracy Cohort model was effective in accommodating contextual differences and mitigating challenges related to funding, geography and staffing through several promising practices; (b) the PD provided to teachers was effective in supporting teacher professional growth in several ways; (c) attention to the multiple nested and dynamic contexts in which teachers worked was an important and effective element of the model; (d) fostering social interaction (among teachers and with more competent others) was important for teacher learning; and (e) finding ways to foster human engagement through mediating tools for learning (e.g., dialogue, reflection, and action research) was critical to the model's success.

***Keywords*: professional development, teacher professional development, numeracy, rural education**

Statistically, the term *rural* in Canada refers to those areas with populations less than 1,000 people, and a density of less than 400 people per square kilometer (Statistics Canada, 2016); however, beyond that it is difficult to describe what is typically rural in Canada (Wallin, 2003, 2005). Rural communities in Canada are more different than similar. Influenced by complex geographic, political, cultural, and economic forces, rural Canadian contexts are as diverse as the DNA that makes up the people within them. Perhaps this is why the saying goes, "If you know one rural community . . . then you know one rural community" (Lauzon, Bollman, & Ashton, 2015, p. 2). Owing to the diversity that exists in rural contexts, problem solving, ingenuity, and creativity are prized characteristics for those wishing to effect change. In rural education, thinking outside the box is a necessity, and not something that can be entrusted to outsiders who do not have intimate understandings of local people and contexts. Rural educators know this and frequently rise to the challenge of creating local solutions to the problems they face.

The study described in this article sought to look at a narrow, but important, issue in rural education: access to effective and meaningful teacher professional development (PD) within rural

contexts. This issue, while influenced and shaped by the unique and varied rural educational spaces in Canada, is one that nevertheless cuts across many different contexts. Geographically distanced and isolated schools and divisions (which are equivalent to districts in some parts of Canada), despite their unique differences, face similar challenges when it comes to providing effective and meaningful teacher PD. They also possess tremendous strengths from which local solutions to this issue can be fashioned. The question of how rural divisions in Canada might go about constructing local teacher PD models that draw on local strengths, mitigate local challenges, and support teacher professional growth is critical to the provision of quality education for rural students, and to what Reid et al. (2010) refer to as rural-regional sustainability. Through a single-case study design, this research study examined the effectiveness of one rural Canadian school division's attempt to improve mathematics instruction and student numeracy outcomes through the creation of a teacher PD model that drew on local strengths and mitigated local challenges. Recognizing the complexity of rural social space (Reid et al., 2010), the study sought to look deeply at the effectiveness of the locally constructed model, known as the Numeracy Cohort, by answering the following three questions:

1. To what extent (if at all) is the specific locally constructed professional development model used in the rural school division able to mitigate the challenges faced by the rural division and its rural teachers in accessing meaningful professional development?
2. To what extent (if at all) is the model effective in terms of supporting teachers' professional growth in the area of mathematics instruction and student numeracy?
3. How do social constructivist principles contribute to teacher professional growth through the locally constructed rural professional development model?

Relevant Literature

It is important in rural educational research not to treat rural education as problematic or to use a deficit model when referring to rural schooling (Reid et al., 2010). Rural education is not a problem to be overcome so that urban models can be applied; rather, rural education takes place in complex social spaces that include tremendous strengths, unique challenges, and complex and interconnected cultural, economic, geographic, and political factors. Understanding how elements within these complex spaces interact is critical to understanding how learning can be enhanced for rural students. The literature reviewed for this study included articles from a variety of global contexts related to rural teacher PD and effective PD more generally. The literature illuminated several strengths of rural schools and organizations, some of the challenges rural educators and organizations face in accessing and providing effective teacher PD, and several established characteristics of effective teacher PD.

Strengths Related to Relationship and Place

Rural schools are able to provide quality educational programming for their students in many ways. In rural communities, teachers know most (if not all) of the students in their buildings (Canadian Council on Learning [CCL], 2006), and the personal relationships that exist among students, parents, and teachers in rural schools often inspire teachers to be personally invested in the success of their students (Budge, 2006). Strong relationships among teachers can make it easier for them to work together naturally (Howley & Howley, 2005), and similar values and interests often make for a more cohesive school community in rural settings (Chance & Segura, 2009). Within rural social spaces, there is also an implicit understanding of the importance of place and community. Schools are often the heart of rural communities, drawing together students, parents, educators, and other community members to work toward a better life for all who live and work there.

In addition to local relationships, rural educators (often out of necessity) tend to foster the development of diverse professional networks (Wallin, 2008). Because many rural educators do not have colleagues with similar professional

interests, goals, subjects, and/or grade levels available within their own buildings with whom they can collaborate, they often work to find others outside of their immediate contexts with whom to engage in professional learning and dialogue. While such diverse networks can be a tremendous strength for all educators, they are of particular importance to rural educators owing to the professional isolation that they can face. As such, the ability to foster such networks is a critical strength within rural contexts.

Strengths Related to Organizational Structures

The unique structures that exist in rural schools and rural divisions are important to understand and consider. Fewer formal leadership positions in rural contexts allow teachers to have greater voice and input into change initiatives, opportunities to exercise creativity, and the conditions in which true bottom-up change can occur (Anderson, 2008; Forner, Bierlein-Palmer, & Reeves, 2012). Because small rural divisions may have only a superintendent (with few or no assistants), few or no consultants, and few administrators in each building (sometimes only one, who is potentially even part time), there can be more space for teachers to create (or step into) leadership positions in the organization. While a lack of formal leadership positions can cause issues with capacity to carry out initiatives, it can also promote productive dialogue among different levels of an organization and greater involvement across various levels of rural organizations as individuals work toward common and locally relevant goals.

Challenges Related to Funding

Rural school divisions face unique challenges related to funding, due to their contexts, including limited tax bases from which to draw funding (Howley & Howley, 2005); declining enrolments that result in decreased government funding (Chalker, 2002; Suvorova, 2004; Wallin, 2008); higher costs per pupil (Harmon, Gordanier, Henry, & George, 2007); high fixed costs in such areas as transportation/busing and teachers' salaries, which take up large portions of divisional budgets (Wallin, 2008); and inadequate funding for the sustainability of small schools (Manitoba Association of School Superintendents [MASS] & Manitoba Association of School Trustees [MAST], 2006; Northern Alberta Development Council [NADC], 2010; Wallin, 2008). As a result, they have fewer available resources, forcing them to make difficult decisions about where discretionary money will be spent. Consequently, rural divisions often have to be increasingly creative and resourceful in their operations, finding ways to do more with less. This is particularly true in the area of teacher PD.

Challenges Related to Geography

Geographic isolation and physical distance are significant challenges for rural school divisions in terms of their ability to provide effective PD for teachers (Glover et al., 2016). Many rural divisions are significant distances from the urban centers in which most teacher PD takes place. These distances increase the cost of sending teachers out to PD, as transportation, hotel, and meal costs add up for divisions; moreover, in school divisions where limited PD funds are available, these expenses can sometimes be incurred by teachers, forcing them to consider whether or not they can personally afford the cost of the PD (Tytler, Symington, Darby, Malcolm, & Kirkwood, 2011). In addition to cost, physical distances compel teachers to consider the time required for travel to PD opportunities, including increased time for planning for substitute teachers, increased travel time, and the time that they are away from their family or community (Tytler et al., 2011). The costs of bringing presenters or facilitators into rural divisions are also often impacted by distance from urban centers, as presenters (some of which are already high cost for small divisions) often charge additional fees for transportation (mileage or flights), accommodations, or meals when traveling to rural or remote areas.

In addition to physical distance, sparsity is an issue in rural educational contexts when it comes to teacher PD. Many rural school divisions span large geographic areas, despite having relatively low populations, something that has been exacerbated through amalgamation of school boards in some provinces (NADC, 2010). As a result, school divisions are forced to find ways to bring divisional personnel together, as well as ways of fostering connections between teachers and administrators

across the spaces that exist even within the local context. Similarly, teachers are forced to look for PD opportunities, whether inside or outside the division, across significant distances between themselves and potential collaborators. While information and communication technologies offer the potential of bringing educators together virtually across distances, it also brings additional challenges. Rural school divisions often also lack such technologies in their schools (CCL, 2006; Mitchem, Wells, & Wells, 2003), making it difficult to rely on technology to bridge the distances that exist in rural contexts.

Challenges Related to Staffing

Rural school divisions face significant staffing challenges that affect both the capacity of rural divisions and their ability to provide effective and meaningful teacher PD. These challenges include recruitment and retention of teachers, availability of substitute teachers, heavy teaching workloads, professional isolation, and internal leadership capacity. While people are perhaps the greatest resource in rural divisions, their numbers in any rural context can be a limiting factor in terms of what is and is not possible.

One of the staffing challenges faced by rural divisions is teacher recruitment and retention (CCL, 2006; Chance & Segura, 2009; Hardré, 2009; Lowe, 2006; MASS & MAST, 2006; NADC, 2010; Seltzer & Himley, 1995; Tytler et al., 2011). Despite the fact that attracting, retaining, preparing, and renewing teachers may be a matter of professional and rural-regional sustainability in rural contexts (Reid et al., 2010), rural and remote school divisions have difficulty attracting and retaining teachers to work in their schools, something that is exacerbated by teacher shortages in specialty areas such as mathematics and science (Wallin, 2008). While high-quality staff development programs may have the potential to improve both recruitment and retention of rural teachers (Lowe, 2006), high staff turnover rates impact the viability of long-term, sustained PD initiatives.

Substitute teacher availability in rural contexts similarly poses a challenge for rural school divisions, particularly in terms of providing teacher PD (Harmon et al., 2007; Manitoba Education, 2009; Seltzer & Himley, 1995; Tytler et al., 2011). Without access to an adequate pool of substitute teachers, rural educators cannot be away from their classrooms to engage in effective and ongoing teacher PD. The impact of heavy workloads is another thing that potentially makes it difficult for teachers to be away from their classrooms to engage in PD. In spite of a lack of curriculum supports (Harmon et al., 2007; Mitchem et al., 2003), rural educators are often required to work or teach outside of their areas of expertise (Harmon et al., 2007; MASS & MAST, 2006; Tytler et al., 2011). Teachers can find themselves struggling to balance the need for PD in areas for which they had no formal training and the workload involved in teaching new (or less familiar) courses. Planning for a substitute teacher and being away from class to engage in PD in such cases can be an overwhelming task for teachers already burdened by novel and heavy workloads.

One of the greatest barriers to the provision of effective teacher PD in rural contexts is professional isolation (Howley & Howley, 2005; MASS & MAST, 2006; Seltzer & Himley, 1995; Tytler et al., 2011). According to Howley and Howley (2005), “Educators tend to experience professional isolation in rural schools because teaching specialties do not enjoy critical mass in any but the largest of these schools” (p. 3). Without colleagues that teach the same subjects and/or grade levels within their own buildings, rural educators often experience limited capacity in terms of their ability to engage in collaborative projects or collaborative PD models. Moreover, geographic distances between sites within divisions (and between rural divisions and external PD opportunities) potentially compound the isolation faced by educators in rural contexts, as time and cost become significant factors in collaborative initiatives.

A final area of challenge in regard to staffing in rural contexts relates to internal leadership capacity. Rural school divisions often have small numbers of administrative candidates due to heavy and diverse workloads (having “many hats to wear”), isolation, and unrealistic expectations of principals and superintendents (Forner et al., 2012; Newton & Wallin, 2013; Starr & White, 2008; Wallin, 2008; Wieczorek & Manard, 2018). With few mid-level leadership positions, such as consultants and

assistant superintendents, and with overall small faculty and administrative numbers, rural divisions face limited capacity to develop and carry out systemic improvement plans, a part of which includes the provision of effective and meaningful teacher PD (Glover et al., 2016).

Contextual Differences

Rural educational contexts are not homogeneous (Hardré, 2009, p. 2); they all have unique contextual differences that have the potential to be both strengths and challenges with regards to system improvement and the provision of teacher PD. According to Hardré (2009), "Rural teachers need tools and strategies from professional development that are flexibly adaptive to the rural context, feasible with available resources, and locally meaningful" (p. 4). Skyhar (2018) notes that "many PD opportunities provide points of view that originate in urban settings, or that are predicated on conditions that involve much larger schools, or more uniform classes" (p. 38); thus, PD opportunities and initiatives for rural educators need to take into account the contextual differences inherent in the teaching assignments and contexts of rural teachers. By considering such factors as size, makeup, scale, cultural and religious differences, local history, and personalities and norms within classrooms, schools, and communities, the needs of rural educators can be better met through relevant and applicable PD.

Characteristics of Effective PD

While the field of education may not completely agree on what constitutes effective teacher PD, many characteristics do appear to be generally agreed upon. For example, effective PD should focus on student learning and include both content knowledge and pedagogical content knowledge (Campbell, Osmond-Johnson, Faubert, Zeichner, & Hobbs-Johnson, 2017; Hunzicker, 2011; Mundry, 2005; Murray, 2014; Porter, Garet, Desimone, & Birman, 2003; Quick, Holtzman & Chaney, 2009; Timperley, 2008). Moreover, the content of teacher PD should be aligned with school goals, district goals, curricular goals, and the individual goals of teachers (Hunzicker, 2011; Learning Forward, 2011; Murray, 2014; Porter et al., 2003; Quick et al., 2009) and reflect "a balance of teacher voice and system coherence" (Campbell et al., 2017, p. 8). Effective PD should provide opportunities for active learning, allowing participants to analyze teaching and learning and try out and reflect on new practices (Campbell et al., 2017; Porter et al., 2003). All of this should be done within collegial and collaborative learning environments that are job embedded, relevant, and practical to the work of teachers (Campbell et al., 2017; Murray, 2014; Whitcomb, Borko, & Liston, 2009). Effective teacher PD should be ongoing in duration, sustainable, and scalable (Campbell et al., 2017; Murray, 2014; Porter et al., 2003; Quick et al., 2009; Timperley, 2008). It also requires adequate support in terms of time, resources, and leadership (Bredeson, 2002; Campbell et al., 2017; Goos, Dole, & Geiger, 2011; Learning Forward, 2011; Timperley, 2008; Villegas-Reimers, 2003). Finally, effective PD includes a mechanism for evaluation (Guskey, 2000; Loucks-Horsley, Stiles, Mundry, Love, & Hewson, 2010).

Context of the Research

The research study was conducted in a small, rural school division in Manitoba, Canada. The division, which was the fifth smallest in the province at the time of the study, had only about 1,000 students and 90 teachers. Despite this, the division contained 14 schools, ranging from just over 200 students to single-digit student populations. Of the 14 schools in the division, 2 were public high schools, 5 were public elementary schools, and 7 were Hutterian schools. (The Hutterian schools in the division were located in faith-based communal living settlements, and while the schools were owned by the community, teachers for the schools were provided by the local public school board.) As a result of its size and location, the division faced many of the challenges described in the literature review, including small divisional budgets, significant geographic distances separating the division and urban centers, geographically isolated schools within the division, small numbers of faculty and administrators, very small schools and staffs, small numbers of available substitute teachers, professional isolation, and unique contextual differences such as several Hutterian schools within the division.

The rural division was chosen for the study because it had implemented a PD initiative called the Numeracy Cohort. The initiative was designed specifically to create collaborative PD opportunities for teachers in the division in the area of mathematics instruction and student numeracy, and it used several strategies to mitigate challenges faced by the division in relation to its rural context. As a result, the Numeracy Cohort provided a rich context from which much could be learned about rural strengths and challenges, including strategies for overcoming local challenges.

Elements of the Numeracy Cohort Model

The Numeracy Cohort PD model incorporated several key elements:

- *A 0.25 full-time-equivalent (FTE) numeracy coach:* The primary responsibility of the numeracy coach, a new position created by the school division, was leadership and facilitation of the Numeracy Cohort.
- *Funding and resources from multiple sources:* Funding was drawn from a variety of sources for the initiative. Although the primary source was a provincial numeracy grant, several other sources of funding and resources were also accessed (e.g., other grants, existing divisional budgets, school budgets, and other nonmonetary resources available).
- *Geographically diverse recruitment as critical friends/partners:* Teachers were recruited as critical friends or partners from across the geographically diverse division both to promote opportunities for collaboration, something that was lacking in the division, and to include the most isolated teachers in the division as much as possible. In the three largest schools in the division, a pair of teachers were nominated as critical friends or partners. In the two very small schools in the division, and the two high schools in the division, one teacher from each was recruited to work together as critical friends, while two teachers from two different Hutterian colonies were recruited to work together as critical friends. In total, a dozen K-12 teachers made up the Numeracy Cohort in the first year of its operation, coming from 9 of the 14 schools in the division (see Table 1). An additional teacher also joined in year 2, for a total of 13 cohort teachers involved

Table 1

Cohort Teacher Makeup

School	Number of cohort teachers	
	2013–2014	2014–2015
Elementary 1	2	3
Elementary 2	2	2
Elementary 3	2	2
Elementary 4 (very small)	1	1
Elementary 5 (very small)	1	1
Hutterian 1	1	1
Hutterian 2	1	1
High School 1	1	1
High School 2	1	1
Total	12	13

- *Face-to-face meetings:* Full-day face-to-face meetings were held with Numeracy Cohort teachers four to five times per year at the division office, located centrally within the division. At these meetings, teachers heard from presenters; discussed divisional, school, and classroom goals; collaboratively designed strategies and materials; and shared their experiences after implementing them.
- *Sessions on divisional or in-school PD days:* In addition to the four to five face-to-face sessions scheduled each year, additional time for cohort meetings was also scheduled on divisional PD days or in-school PD days. These extra meetings meant that cohort teachers saw each other face to face most months of the school year.
- *Mini-action research (MAR) projects:* Numeracy Cohort teachers worked individually and collaboratively on MAR projects, which involved actively designing changes in practice and evaluating the impact of those changes on student learning.
- *Attending external PD as teams:* In addition to having presenters come to face-to-face sessions, small groups of teachers working collaboratively on MAR projects attended external PD (e.g., speakers, workshops, and classroom visits) as teams, sometimes meeting afterward to follow up on their learning. The entire cohort also attended a two-day workshop together during the first year of the initiative.
- *Time and resources available for teacher needs:* Additional money was made available for teachers to buy resources or to get together in small collaborative groups (for planning, or to implement ideas learned at external workshops/PD opportunities).
- *Online component:* An online component was added to the model to foster collaboration, sharing, and reflection. This was done through a group SharePoint site.
- *Interviews and feedback:* Many opportunities for written and oral feedback were included, such as interviews, written reflections, small group discussions, and reports on MAR projects.

Theoretical Framework

Social constructivist theory informed the research study in two fundamental ways: as a lens through which the effectiveness of the model could be examined, and through the design of the study itself. Teacher PD is often viewed from a social constructivist perspective, which recognizes that teachers are learners who construct understanding in social settings as new ideas rub up against their existing beliefs, attitudes, and understandings (Richardson, 1997, 1999). Social constructivists believe that the social context in which learning occurs cannot be separated from the individual learning that takes place (McCullagh, 2012; Pitsoe & Maila, 2012; Richardson, 1997, 1999). As a result, social constructivist theory lends itself to examining the effectiveness of collaborative teacher PD models like the Numeracy Cohort, in part because they seek to foster interactions among teachers that promote the construction of new understandings, and in part because social constructivist theory recognizes how teachers as learners are situated within complex social contexts.

Methods

A single-case study design, a suitable methodological choice for the in-depth qualitative study of a single unit or bounded system (Creswell, 2007; Flyvbjerg, 2011; Merriam, 1998; Stake, 1995), was chosen for this research study. The Numeracy Cohort model provided a unique case (Yin, 2009) worthy of study due to the nature of the model, and the fact that it was designed specifically to overcome challenges to providing and accessing effective and meaningful PD locally. To examine the extent to which the model was effective in mitigating challenges, multiple units of analysis were considered. Four different perspectives (those of the teachers, the principals, the superintendent, and the facilitator) were examined through a variety of data sources that allowed for thick, rich description to emerge about how well the model mitigated challenges and supported teacher professional growth in the area of mathematics instruction and student numeracy.

Participants

In addition to requesting permission from the school division to conduct the study, participants were invited to participate in the study through letters of invitation. Numeracy Cohort teachers were invited to provide secondary data (e.g., audio recordings and notes from previously conducted interviews, and artifacts they had created throughout the initiative) and to participate in a focus group discussion. The principals of the cohort teachers were also invited to participate in a focus group discussion, and the superintendent of the division was invited to participate in an interview. Of the 14 teachers that were part of the Numeracy Cohort over the 2-year period, 13 chose to participate (one teacher that left the cohort at the end of the first year did not participate, but his replacement did), as well as six out of eight of their principals, the superintendent of the school division, and myself as the facilitator of the PD initiative. My own participation involved adding the facilitator notes and other artifacts I had created in my role as facilitator of the initiative as data sources for the study.

Researcher's Positioning

It is important to describe my own dual roles as both researcher and facilitator of the initiative. During the 2 years that were the subject of the research, I was employed in the school division as a 0.75-FTE high school teacher and as the 0.25-FTE numeracy coach previously mentioned. I came to the numeracy coach position after working with the superintendent of the school division to design a PD model that would provide collaborative PD opportunities for math teachers in the division. Recognizing the potential for researcher bias in the study, I elected to collect and analyze data (take on the role of researcher) at the end of my 2-year appointment as facilitator. This was made easier in part because I left the division to take a university position at the end of the 2014–2015 school year. In addition to bracketing off my dual roles as much as possible, I shared preliminary findings with members of the school division during the analysis phase of the study. This allowed for feedback, clarification, and verification of findings by various members of the school division.

Data Collection

Multiple forms of data were collected over a period of 1 month (June 2015) as the Numeracy Cohort initiative ended its second year of operation. Both primary and secondary data were collected. Secondary data, comprised of data that already existed from the ongoing activities of the Numeracy Cohort, were accessed with permission from the school division and participants and included audio recordings and notes from semi structured interviews conducted with teachers three times over the 2-year period, facilitator notes, and artifacts generated through Numeracy Cohort activities. Primary data, which were generated specifically for the research project, included an interview with the superintendent, a focus group discussion with the Numeracy Cohort teachers, and a focus group discussion with their principals (all of these data sources were transcribed for analysis by me as the sole researcher). Table 2 outlines the multiple sources of data collected for the study. Questions used for the focus group discussions and interviews are included as appendices. Collecting multiple forms of data representing a variety of perspectives allowed for triangulation of data. This added to the trustworthiness of the study, in addition to providing more robust, descriptive, and rich data with which to answer the research questions.

Data Analysis

NVivo, a brand of qualitative data analysis software (Bazeley & Jackson, 2014), was used for organizing, transcribing, coding, and analyzing data. Transcribed data were coded through two distinct cycles of coding by me as the sole researcher. During the first cycle of coding, a priori, theory-generated (Marshall & Rossman, 2011) codes created from the research questions and literature review were used, in addition to emergent codes that were identified from the data. Following reorganization (collapsing and categorizing) of codes from the first cycle, a second cycle of coding took place. Analytic memos were also kept during the coding process to document my own thoughts as a researcher in relation to emerging themes (memos were then also coded at the end of the second cycle of coding).

Table 2

Data Sources

Data type	Description
Primary data	
Interview	• Superintendent
Focus groups	• Principals • Cohort teachers
Secondary data	
Cohort teacher interviews	• Fall 2013 • Spring 2014 • Spring 2015
Facilitator notes	• Notes created after each face-to-face session • Notes after meetings with administration • Files used for presentations to administrators and school board
Artifacts created by cohort members	• Mini action research forms • Reflections • Small-group discussions • Mini action research oral reports • Presentation files • Teacher activities from face-to-face sessions
Artifacts from cohort operations	• Charts of teacher goals • Charts of face-to-face content • Attendance charts • Meeting agendas • Meeting schedules • PowerPoint files from face-to-face sessions • Financial reports

Data analysis was conducted through what Miles, Huberman, and Saldaña (2014) refer to as (1) data condensation, (2) data display, and (3) conclusion drawing/verification. Once codes were organized, they were chunked into themes, thereby condensing the data. Themes were displayed using charts, graphs, matrices, and networks in order to organize and examine connections among them. The findings for the study were constructed through the fleshing out of key ideas (by looking back and forth between thematic displays, codes, and raw data).

Findings

The presentation of findings from this study is organized by the research questions. Despite the fact that the three questions look through distinct lenses at the Numeracy Cohort model, together they paint a coherent picture of one division's local solution to the problems faced. In his interview, the superintendent of the school division said the following:

> I think that's a strength of rural divisions. . . . Because rural divisions have challenges, and they have limited funds, they have to really figure out, they have to really problem solve, they have to really [have] that twenty-first century ingenuity that comes into thinking outside the box and changing something to make it better. Because really the bottom line is there's not going to be a lot more money. There could be a little bit more money. We can increase this and do that. We can refocus, but you really have to think differently. Rural school divisions have a great history of doing that.

The hopefulness and place-based appreciation shown by the superintendent in this statement

echoes the statements of many others regarding the need for innovative solutions to the problems faced in rural contexts (O'Malley, Wendt, & Pate, 2018); the ability of rural teachers, schools, and school divisions to value local knowledge in word and in practice (Avery, 2013); and the possibility of engaging in a sense-making process that allows for local strengths to be leveraged to develop school-community partnerships (Zuckerman, 2019). Likewise, the findings from this study illustrate what such a view of rural ingenuity looks like within the context of rural teacher PD, as the division in this study, through the Numeracy Cohort initiative, attempted to "think outside the box" to find a local solution to the challenges faced.

Mitigating Local Challenges

Several challenges were identified across data sources in this study, many of which occurred in multiple data sets (see Table 3). These challenges fell within the four categories: funding, geography, staffing, and contextual differences. So, too, did the strategies that the division employed locally to mitigate these challenges.

In terms of funding, the school division (which was funded through a combination of provincial government funding and locally levied property taxes) faced significant challenges. Declining enrollment in the division resulted in decreases in provincial government funding (allocated primarily on a per-student basis) while costs per pupil continued to rise. In addition, the superintendent of the school division described issues in the provincial funding formula in relation to distance and sparsity. In his interview he noted the following: "There's a huge gap between rural and urban school divisions and southern and northern school divisions in terms of the dollars that are received and how far those dollars will go in a particular environment because of distances." To mitigate the funding challenges faced by the division in relation to developing the Numeracy Cohort initiative, a creative financial model was constructed to draw on resources from a variety of areas, including grants, new funding from the budget/local levy, reallocation of existing financial resources, and reallocation of existing nonmonetary resources. A provincial numeracy grant was accessed each of the 2 years ($10,320/$11,450), as was a reflective practice grant from the local teachers' union ($1,000/$800). This money covered the cost of bringing cohort teachers together four to five times per year for face-to-face sessions, as well as materials, registrations, and other expenses. Teachers also drew on local school budgets to attend external workshops, and the central PD funding in the division paid for all of the cohort teachers to attend a two-day workshop together. Through a new budget line, the 0.25-FTE numeracy coach position was funded at a cost of about $20,000 per year, and a variety of nonmonetary resources were leveraged, including using existing division/school PD days to meet, drawing on local expertise, and finding external expertise that could be accessed at little to no cost (e.g., swapping services with another division's coach/consultant, and bringing in a professor from a relatively nearby university).

Just as Glover et al. (2016) suggested in their work, geographic isolation and physical distance were also significant challenges for the division in the study. Distances between schools in the division, and the distance of the division from the two large urban centers where most of the PD in the province took place, posed challenges in terms of cost, time, and safety. The Numeracy Cohort initiative, however, was able to mitigate several of these challenges by providing PD locally within the division. Having face-to-face meetings centrally within the division drastically reduced travel costs and the time required for travel. Paying teachers mileage and having PD within the division also ensured that teachers did not have to incur personal costs for the PD and that their personal lives were not impacted by excessive travel. Finally, including an online component for teachers to collaborate and communicate virtually within the division provided a platform that bridged the geographic distances that existed in the division. Unfortunately, however, issues related to the late introduction of the platform and poor teacher uptake led to the platform being abandoned as a communication tool during the second year of the initiative (although it was still used for sharing resources).

Table 3
Local Challenges and Promising Mitigation Strategies

Divisional challenges identified	Promising local mitigation strategies
Funding	
• Declining enrollment (–3.51% over 3 years) • Provincial funding provided on a per-student basis (–0.99% over 3 years) that did not keep pace with increasing costs (+5.44% per pupil over 3 years) • Decreases in PD funding (–3.42% over 3 years) from the province, forcing the division to fund an increasing amount of PD from discretionary budget areas	• Using a creative funding model to access sufficient funding (including grants, local levy, reallocation of existing financial resources, and reallocation of existing nonmonetary resources) • Drawing on resources available at little to no cost (e.g., accessing resources available through other organizations, accessing existing divisional PD days to meet, having cohort teachers lead a PD day for other teachers in the division)
Geography	
• Large geographic area (~3,400 km^2/1,300 mi^2) • Distanced from urban centers where PD typically was offered (245- to 404-km or 152- to 251-mile round trip to the largest urban center, at a mileage cost of $100–170) • Significant distances between divisional schools (the farthest schools were 186-km or 116-mi round-trip travel) • Distances increasing PD costs for the division and/or teachers (for meals, hotels, travel, additional childcare, etc.), and the time required for travel • Inclement weather (snowstorms, icy roads, etc.)	• Locating PD within the division (and bringing presenters in) • Holding meetings centrally in the division to minimize travel costs and time required for travel (a maximum mileage cost of $288.12 for each session for 13 teachers, with no teacher traveling more than 1 hour round trip) • Paying mileage to teachers (to eliminate personal costs for teachers attending face-to-face meetings) • Incorporating an online component
Staffing	
• Challenges to teacher recruitment and retention in the smallest schools in the division • Professional isolation, with most teachers in the division having few (if any) colleagues teaching the same subjects/courses/grades with whom they could collaborate • Many teachers with multigrade and/or heavy teaching loads, as well as many hats to wear within the school and/or community • Limited substitute teacher availability and quality (particularly in very small schools and in specialized areas) • Few formal leadership positions (no consultants)	• Recruiting teachers from diverse geographical areas and substitute teacher pools • Holding meetings midweek when demand for substitute teachers is low • Increasing collaborative opportunities (face-to-face meetings, critical friends, small-team PD attendance with follow-up, etc.) • Bringing new ideas in (other teachers, presenters, facilitator) • Creating a 0.25-FTE position for facilitation (the numeracy coach)

Contextual differences	
• Two unique contexts in the division: 1. Seven Hutterian schools—located in faith-based communities known as colonies. These schools were extremely small, having only one to two teachers (responsible for teaching multiple grades and subjects). Teachers in the schools were very isolated and had heavy teaching loads. The schools also observed additional religious holidays (not observed in the public schools). 2. Two very small schools—these geographically distanced schools had only three to four teachers in each (responsible for teaching multiple grades and subjects). Like the Hutterian schools, taking teachers out for PD had the potential of interrupting normal school functioning.	• Recruiting one teacher from each of the very small and two of the Hutterian schools, and pairing them up with another teacher with a similar teaching context • Flexibility to deal with issues or conflicts (religious holidays, hollowing out small staffs, conflicts with other PD or leadership roles) • Built-in feedback and reflection mechanisms (interviews, oral, written, discussion, etc.) to gather information about teacher needs and experiences • Mini-action research projects—autonomy to focus on areas relevant to teaching contexts (specific grade levels, culturally relevant, multigrade, etc.)

In terms of staffing, the school division in the study experienced many of the challenges previously identified in the literature reviewed for this study. As indicated in Table 3, recruitment and retention of teachers was a minor problem in some of the smallest schools in the division, as was substitute teacher availability. In addition, the quality of substitute teachers in the division was also an issue, particularly in specialty areas (e.g., high school math). One high school math teacher noted the following in an interview:

> There is also nobody that actually substitutes at our school that is a math teacher, so I have to be very well prepared to leave the kids with something that they can do with a guest teacher that is not qualified. And so, I'm losing classroom time, and we all know that we don't have a lot of classroom time to get the jobs done.

Teacher isolation was a significant problem, as most teachers did not have access to colleagues in their buildings who taught the same grade levels and subject areas as they did, making collaboration difficult. Cohort teachers noted that, in addition to isolation from collaborative partners, they also felt somewhat isolated from the broader educational community in the province. Teacher workload, including new or changing workloads, multigrade classrooms, and having many hats to wear, was cited as a challenge by several teachers in the Numeracy Cohort, as well as by principals. In the focus group discussion with cohort teachers, the impact of these heavy loads on teachers' capacity to engage in PD was explained the following way:

> The same people that are on the school, the local school PAC [Parent Advisory Council] committee, which are on the local rink board, which are on the town whatever, it seems to be the same people. That happens in small schools too. The same teachers end up being on several committees, which can be—[it can] make PD difficult in that those teachers are extremely busy, [they have a busy] workload, and then [an] extremely busy PD load.

Finally, internal capacity in terms of divisional expertise and leadership capacity was also cited as a challenge within the division, largely due to the small numbers of faculty and administrators on staff. In his interview, the superintendent of the division said the following:

> We have 90 professional staff. We are not going to have all the strengths that a staff of two or three thousand would have, or two or three hundred teachers would have. We have to scale it and find where are our strengths, and we have to play [to] our strengths.

As indicated in Table 3, staffing challenges were mitigated in several ways. Leadership capacity was established through the creation of the 0.25-FTE numeracy coach position, and collaborative opportunities were fostered through a division-wide cohort. Teachers were able to work with others (critical friends and/or small collaborative groups) who taught similar grade levels and subjects/courses, and new ideas were shared at face-to-face sessions, bringing ideas from the broader field to previously isolated teachers in the division. One of the Hutterian teachers in the cohort noted that the initiative had "lifted the gates of that isolation" for him, allowing him access to content and collaborative opportunities that were previously not available. Finally, issues related to substitute teacher availability were mitigated in two ways: through recruiting teachers from geographically diverse areas of the division (and therefore from different substitute teacher pools) and by holding meetings midweek when the demand for substitute teachers was lowest. Attendance data from the study (which cited reasons for absences) indicated that in the 2 years of Numeracy Cohort operation (including dozens of release days), only one teacher cited unavailable substitute teachers as a reason for not attending face-to-face sessions, two times.

While the division in the study had many unique contextual characteristics, the two differences that required significant consideration in relation to PD were the two very small schools and the seven Hutterian schools in the division. As indicated in Table 3, these schools had very few teachers, and taking (too many) teachers out for PD had the potential of disrupting school function by hollowing out the staff; as one teacher noted in the focus group discussion, someone had to remain in the building to "mind the store." In addition, the teachers in these very small and Hutterian schools worked under unique circumstances, including significant isolation from colleagues (especially teaching the same grade levels), and heavy workloads (including part-time administrative duties, multiple responsibilities in relation to committees and volunteer work, and teaching in multigrade classrooms). Finally, the Hutterian schools in the division were located in faith-based communities that had unique religious and economic structures, eliciting a need for culturally/locally relevant curricula for students and cultural sensitivity in relation to religious holidays in particular. As previously described (see Table 1), the cohort structure was in part designed to ensure that teachers in the most isolated schools in the division were able to participate, that they had a critical friend or partner to collaborate with, and that not too many teachers from any one of the smallest schools would be away. Flexibility was also employed to avoid religious holidays and multiple commitments, to avoid having too many teachers away from very small schools, and to allow teachers to design and utilize multigrade and culturally/locally relevant resources in their practice. One of the Hutterian teachers described the benefits of the Numeracy Cohort initiative in the following way:

> I think being part of the cohort has lifted the gates of that isolation that we had. Like we now had a chance to discuss with other teachers, and being able to collaborate with them. And another thing is that the group that I was working with was real[ly] good about doing the multigrade—we set up those projects for grade 7, for grade 6, for grade 5, and even below if we needed to. I think [cohort teacher name removed] did a good job in addressing all of those areas because he is also in a small school.

The MAR projects that teachers engaged in (with critical friends or small groups) allowed all teachers to focus on their own areas of need. This was particularly important for the Hutterian and very small school teachers, whose contexts were significantly different from both other teachers in the division, and potentially the assumptions on which many resources and PD opportunities were based.

In addition to drawing on local knowledge as a pedagogical strategy (Avery, 2013), contextually relevant approaches to teacher PD are important in rural communities to meet the needs of teachers within the constraints of rural school divisions. As outlined in Table 3, the division in this study was able to employ several promising local mitigation strategies for overcoming challenges to the provision of teacher PD. These strategies, while unique to the division in the study, shed light on not

only the types of challenges faced by rural school divisions and teachers but also potential ways of overcoming such challenges. These may be of interest to those teaching, researching, or leading change initiatives in other rural contexts where similar challenges are faced—those attempting to "think outside the box."

Providing Effective PD for Teachers

The second research question in the study focused on the extent to which the model was effective in supporting teachers' professional growth in the area of mathematics instruction and student numeracy. To answer this question, I employed Guskey's (2000) five levels of critical evaluation to look at the effectiveness of the Numeracy Cohort, both as a model and as a supportive mechanism for teacher learning.

Level 1: Participants' Reactions. In terms of teacher reactions, there was surprising coherence in what teachers cited as valuable, despite the diversity of contexts they worked within. Teachers noted they appreciated the community and collaboration built into the model's design, content in terms of exposure to new ideas, time and resources available to individuals and collaborative groups, autonomy to focus on areas of their own choosing (relevant to their own contexts), and the focus and accountability fostered through ongoing contact and the MAR projects they engaged in. Table 4 provides examples of teacher comments/reactions when asked about their experiences and the effective aspects of the model.

In terms of less effective aspects of their experience, there was less coherence, except in relation to the online element. Teachers in general found the online communication delayed, and less useful. This, in part, was the reason the online communication tool was abandoned in the second year (although the online platform was still used for posting resources).

Level 2: Participants' Learning. Teachers noted several things they felt they had learned through their participation, from specific strategies and content (e.g., rotations, workstations, mental math strategies, Guided Math, Math Recovery, and national/international test results) to changes in their beliefs and attitudes (e.g., what counts as PD, depth vs. breadth in teaching, effective assessment strategies, how to help struggling students, and newfound interests in engagement and problem-based learning). They also noted they learned who other people in the division were, how culturally relevant and multigrade projects could be generated, how to increase student engagement, what wasn't working in their classrooms, and the value of collaboration and action research.

Level 3: Organizational Support and Change. One of the strongest pieces of evidence for organizational change, aside from the actual creation of the Numeracy Cohort, was the impact of its creation on PD in the school division, as reported by the superintendent:

> I also think it's had a huge effect because once we did this, the teachers who were involved in trying to improve our French, the teachers who were involved in trying to improve physical literacy, they saw the model and said, "Hey, can we do that?" And then we started using some central and some school PD funds to support those groups in getting together and having a collaborative model. It was already happening to some degree in literacy. . . . It's really helped promote it. . . . I would say it's our flagship of collaborative PD. **. . .** Now we have more teachers asking to be part of groups than we have groups available . . . and that's a good problem to have.

In addition to affecting the way PD was conceptualized and carried out in the division, organizational support was also evident through the funding of the numeracy coach position, the overall funding provided to the cohort, and a variety of new communication pathways opened through the initiative. For example, the numeracy coach and cohort teachers shared their successes with the administration council and with other teachers in the division (they hosted a divisional PD day for other teachers in the second year). Principals, teachers, and the superintendent also reported dialogue about the Numeracy Cohort among cohort teachers and others in the division in a variety of contexts, including formal presentations at staff meetings and informal conversations in hallways, classrooms, and

Table 4

Evidence of Teacher Perceptions of Effectiveness

Category/ theme	Sample teacher comments
Community/ collaboration	"I valued time to collaborate with colleagues. This enabled me to stretch my thinking on several topics." "I felt part of their school, kind of . . . I felt like a professional learning community. I did from the cohort, and I wouldn't probably have experienced that otherwise. . . . I wouldn't have known [Carol] and [Ellen] at all, really. Like you would have seen them, 'Hey, how's it going,' but I felt comfortable to say, 'I need help with this. Can you help me?' Whereas in my school, it's not that no one's willing to help, it's just we're all working at different areas and different grades. It's hard to have that professional learning community which I felt the Numeracy Cohort brought to me."
Content	"It was good to have somebody bring in some ideas and some of the PD topics that are out there, and some of the new things that are happening because I'm not likely to see it any other way."
Time and resources	"Time. Um, getting the time to sit . . . and work, not necessarily have things thrown at you. . . . We've had people come in and speak to us, but it's time to take what you've learned and implement it—find ways to actually implement it with another person in the same area" "I was getting PD paid for by the division that was relevant to my teaching assignment and useful, and not coming out of the school budget."
Autonomy	"I never really thought about any of these things that I wanted to do as professional development. . . . Like I have been teaching a long time and that's quite an eye-opener that working on my math, bringing in new things, isn't just something that I want to do and have to support totally on my own. . . . I've never really seen that as professional development and I really like trying to kind of hone my craft. That's a wonderful thing for a math teacher."
Focus/ accountability	"I think the mini-action research projects kept us focused and on track so that we knew what we had to do and what we were going to do." "There was accountability. We need to post them. We need to present. . . . You have to have accountability. I mean when is your house the cleanest? When you have company coming. . . . There has to be accountability. There is when we teach, so there has to be when we're learning as well."

staffrooms. One area that also emerged in terms of organizational support, however, was a lack of consistency in administrative support among schools. Some teachers felt less supported in their work (emotionally and financially), which was something that they felt negatively affected their learning opportunities during the initiative.

Level 4: Participants' Use of New Knowledge and Skills. Participants' use of new knowledge and skills was evident in the MAR projects and reports provided by Numeracy Cohort teachers and included changes in practice, such as incorporation of project-based learning and culturally relevant projects, implementation of new assessment

techniques, use of rotation and workstation strategies in classrooms, incorporation of mathematics games, organization of Hundred Day celebrations that used many math strategies, and development and implementation of strategies for helping struggling students. While it is not possible to describe all of the cycles of MAR projects for 12–13 teachers over a 2-year period, Figures 1 and 2 provide examples of the type of collaborative work cohort teachers engaged in. These figures are two artifacts collected from a group of four early-years teachers who attended a Bureau of Education and Research workshop together on implementing workstations in the initiative's second year and met within days afterward to create resources and prepare to implement workstations in their classrooms (focused on addition strategies).

In addition to the outlined process evident on the MAR forms, oral presentations at face-to-face meetings and interviews with participants illuminated and clarified how teachers used the workstations with students and several of their thoughts about their experiences. The early-years teachers described how the workstations helped them teach specific addition strategies to students (e.g., doubles, doubles plus one), helped them assess student understanding of such strategies, and were helpful for targeting instruction with students who had not yet demonstrated mastery. Moreover, the teachers noted that they had begun to use common vocabulary so that students moving from grade to grade would hear similar terminology across grades, and that they got their classes together in one school to host a Hundred Day celebration where students used several of the strategies developed in a carnival-like atmosphere celebrating the 100th day of school.

Level 5: Student Learning Outcomes. Student learning outcomes, while not directly studied in the research study, were self-reported by teachers. Some important outcomes identified by Numeracy Cohort teachers included increased engagement, demonstrated ability to answer provincial exam questions correctly, student successes with project-based learning, improvements in student independence, improvements in specific problem-solving strategies, and other student successes based on specific learning outcomes such as identifying patterns. In the case of the early-years examples (Figures 1 and 2), the teachers who worked together collaboratively described increased engagement and confidence in learning, stronger command of addition strategies, less "down time" in the classroom (more efficient use of time), and use of common vocabulary as improvements in student learning outcomes. Although student data was not collected for the study, teachers cited both anecdotal observations and student assessment results when describing these improvements.

Fostering the Social Construction of Knowledge Through PD Design

The third research question in the study looked at how social constructivist principles contributed to teacher professional growth through the design and enactment of the Numeracy Cohort model. This question can be used both to bridge theory and practice in the study and to provide discussion about the lessons learned. Drawing together social constructivist conceptions of learning, findings from the first two research questions, and literature reviewed for the study, several key takeaways and contributions can be identified.

Social Context. From a social constructivist perspective, the construction of knowledge is not something that takes place solely within the individual; rather, it occurs simultaneously within a social context that influences and is influenced by the learner (Palincsar, 1998). Because of this, individual learning is inseparable from the social context in which it takes place (McCullagh, 2012; Pitsoe & Maila, 2012; Richardson, 1997, 1999). In terms of the Numeracy Cohort, the context in which the model was designed and the multiple contexts in which it was enacted were critically important. Challenges faced by the division in relation to teacher PD had to be considered, as did the unique contexts in which teachers worked. Findings from the first two research questions suggest that consideration of multiple levels of nested contexts (including classrooms, schools, community, divisional, and even provincial levels) led to a contextually relevant and locally constructed PD model that was effective for teachers.

(Continued on page after figures)

Figure 1

Early-Years Group Mini Action Research Form

Name: _____ **Mini Action Research Form** Date: _____

Plan

- To implement math groups in our classrooms
- To develop math centers/games which can be used to teach, practice, and assess math outcomes at our grade levels

Act

1. Attend the BER math in-service
2. Meet the following day to plan strategies and create centers for our classrooms
3. Search for new resources to add to our toolboxes
4. Meet to share and continue to plan with our fellow group members

Reflect

- Assessing and differentiating instruction is easier when set up this way.
- The same centers can be used for teaching, practicing, and assessing student knowledge.
- Materials need to be organized and easily accessible

Observe

- Students are enjoying the chance to work together in groups
- Students are learning from each other
- Students ask for group work if it is missed that day

Form adapted from the work of Cathryn A. Smith (2014)

Figure 2

Workstation Resources Created by Early-Years Teachers

What these findings offer the field is an example of both how and why consideration of specific and unique rural contexts (at all levels) is critical to the effectiveness of rural teacher PD. Without consideration of specific (and dynamic) contextual details, such as the very small and Hutterian schools, multigrade classrooms, geographic sparsity, funding structures, and small number of substitute teachers, it is unlikely that the division would have been able to create a viable model or provide teachers with PD that met their needs. While literature on effective PD often cites alignment of teacher, curricular, school, and divisional goals as a critical element of effective PD (Hunzicker, 2011; Learning Forward, 2011; Porter et al., 2003; Quick et al., 2009), what that looks like, particularly in rural contexts, is rarely discussed. This study, through its description of the Numeracy Cohort in relation to local challenges, provides such a description—one that may help other rural divisions/districts to create their own contextually relevant PD models.

Social Interaction. Adopting a social constructivist view of learning requires one to acknowledge (and perhaps even privilege) the role of social interaction in the learning process. According to Richardson (1997), "The development of an individual relies on social interactions. It is within this social interaction that cultural meanings are shared within the group and then internalized by the individual" (p. 8). Within the context of the Numeracy Cohort, the importance of social interaction was clearly evident. Because geographic distances and teacher isolation (from other colleagues and from the field more generally) were significant challenges that had to be mitigated in the division in relation to PD, significant features of the model were developed to allow for social interaction and professional collaboration, including the development of a cohort of 12–13 teachers, the incorporation of critical friends pairings, face-to-face meetings four to five times per year, providing time for teachers to meet in smaller groups after attending workshops together, and the incorporation of collaborative MAR projects. What emerged in the findings was that cohort teachers felt less isolated, appreciated the safe and trusting community, and valued the opportunities for social interaction and collaboration that were provided. Together, teachers engaged in individual and collective meaning making in relation to such topics as what counts as PD for math teachers and how to create effective strategies for use in multigrade contexts. As a result, new ideas and understandings emerged from the collective, illustrating that the whole is greater than the sum of its parts when it comes to social interaction and learning. Without the social interaction provided through the Numeracy Cohort model, the teacher learning that took place would not have been possible. One of the cohort teachers described the impact of her interactions with other cohort teachers (on her learning) in the following way:

> I think that a really big deal is that we are working with other people so you're getting to—that whole way you're learning, you're discovering what somebody else is doing and you're being able to take that, you reflect on it, um, sometimes it is quite different than what you're doing, or [where] you're going, "I don't know if I can make that work," and you're thinking about it, reflecting on it. And then you're basically, you're learning, you're changing, you're evolving, and you're upping the quality of your practice.

The findings from the Numeracy Cohort study align with existing literature on the characteristics of effective PD by highlighting the importance of collaborative learning experiences (Campbell et al., 2017) for teachers. From a social constructivist perspective, these collaborative experiences foster social interaction and both individual and collective meaning making, thereby promoting teacher learning. This is why teacher PD models like the Numeracy Cohort are both effective and desperately needed in rural contexts. Given the geographic and professional isolation faced by rural teachers, finding ways to mitigate such challenges (to provide contexts in which teachers can socially interact and collaborate) is of critical importance.

In addition to the importance of social interaction in the learning process, most social constructivists would likely identify the people with which interaction occurs as equally important in the learning process. Underpinning such a view is the

belief that learners can be assisted by more competent others within their zones of proximal development (Postholm, 2012; Vygotsky, 1978) to attain more than what they would otherwise be able to learn on their own. More competent others in terms of teacher PD could be colleagues, facilitators of workshops, presenters, curriculum coordinators, instructional coaches, or even authors of books, teaching materials, research, websites, blogs, and so forth. Whether face to face, online, or vicariously through writing, interaction with more competent others who have knowledge or expertise relevant to the learner creates opportunities for growth and learning. In the case of the Numeracy Cohort, more competent others included the numeracy coach, a university professor who was an expert in math instruction, numerous workshop facilitators, presenters, a curriculum consultant from another division, teachers inside and outside the division with experience using particular strategies, and authors of webpages, blogs, and books on mathematics pedagogy. Findings from the study suggest that teachers appreciated access to content, information, and strategies provided by these valuable resources, which mirrors existing literature on the characteristics of effective PD (i.e., contains content and pedagogical content knowledge, is aligned with curricular outcomes, focuses on student learning, and is supported with resources and leadership). What can be learned from this alignment is that, like opportunities for social interaction and collaboration, relevant content (in the form of interaction with more competent others) is valuable in rural contexts and an important consideration in the design of rural teacher PD models.

Human Engagement. From a social constructivist perspective, for significant learning to occur an individual must be actively engaged rather than passively compliant (Palincsar, 1998; Postholm, 2012). This means that the learner must have the "will to learn" (Postholm, 2012, p. 424) and to actively work toward new knowledge. Within the context of teacher PD, one of the ways that engagement can be fostered is through what Palincsar (1998) refers to as "tools that facilitate the co-construction of knowledge" (p. 353), such as dialogue and reflection. From a social constructivist point of view, reflection and action are interconnected, as are thoughts, emotions, the will of a person, and action (Postholm, 2012). As a result, finding ways to foster dialogue and reflection are of critical importance in the design of teacher PD.

In terms of the Numeracy Cohort, opportunities for dialogue and reflection were built into the model in many ways. Dialogue was fostered through activities at face-to-face (and small group) sessions focused on goal setting, community building, sharing MAR experiences, and engaging with new ideas for improving teaching practice. Reflection was fostered through the conducting of teacher interviews; the incorporation of written, online, and oral reflections; the use of MAR forms; and the reporting of MAR project results/findings to the cohort and the division's administration council. Together, these opportunities for dialogue and reflection permitted new ideas to rub up against existing ones, allowing cohort teachers to construct individual and collective understandings that previously did not exist.

One of the things that becomes apparent when looking at the engagement of the teachers involved in the Numeracy Cohort is the critical role the MAR projects played in the learning process. In addition to fostering dialogue and reflection, these projects required teachers to remain engaged in cycles of planning, acting, observing, and reflecting over a 2-year period. Just as McCullagh (2012) describes the use of video as a mediating tool for teacher learning through the cyclical processes of "observation, interpretation, and modification of practice" (p. 145), the MAR projects in this study promoted teacher learning by enriching social interactions, supporting dialogue and reflection, and promoting teacher engagement and action. In looking at cohort teachers' perceptions of the effectiveness of the model (see Table 4), many of the valued aspects of the model are linked to the MAR projects, including having the time, focus, and accountability to follow through on planned changes in practice; having the autonomy to choose contextually relevant topics and strategies to engage with; and being able to work collaboratively on the projects with colleagues. These valued aspects of the model also align with the literature on effective PD, which suggests

teacher PD should be active, collaborative, ongoing, job embedded, and focused on student learning. The MAR projects used in the Numeracy Cohort initiative provide an example of what teacher engagement in professional learning can look like. Their use and effectiveness also suggest that those wishing to construct local models of teacher PD need to think about what teacher engagement will look like and how it will be fostered in their own contexts.

Conclusion

The Numeracy Cohort initiative examined in this study provides an example of a locally constructed teacher PD model designed to be responsive to the local context, local challenges, and the specific needs of teachers in the division. It links literature on rural challenges and effective teacher PD with practice in a rural context and, in doing so, offers one image of theory and practice working together in rural education. Those interested in designing rural teacher PD models may find promising practices that help them mitigate rural challenges to the provision of teacher PD in their own contexts. They may also find theoretically grounded elements of effective PD that will meet their own contextual needs and the needs of their teachers. Findings from this study suggest that paying attention to the multiple nested and dynamic contexts in which teachers work is both effective and prudent. Only through deep consideration of local strengths and challenges can effective local models be formed. Findings from the study also suggest that attention should be paid to fostering social interaction (among teachers and with more competent others) and human engagement (through mediating tools for learning such as dialogue, reflection, and action research). By paying attention to how new knowledge and understandings can be socially and collaboratively constructed, those in rural contexts can engage in what the division's superintendent described as "thinking outside the box," in order to draw on local strengths, mitigate local challenges, and support teacher professional growth.

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About the Author

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Appendix A

Semistructured Interview Questions Used for Teachers

The following questions were used for semistructured interviews conducted in Fall 2013, Spring 2014, and Spring 2015. The goals of the interviews were to obtain information in order to plan PD experiences that would meet the needs of teachers and to assess the initiative's effectiveness in meeting its goals. Permission was requested for their use in this research project through letters of informed consent and consent forms (signed by the superintendent and the cohort teachers).

Fall Interview Questions (Fall 2013)

1. What is your teaching background? How long and where have you taught? What subjects and grades have you taught?
2. Describe your professional development experiences over the past 2 years. What was the most effective professional development you have attended? What made it effective for you?
3. Have you experienced any barriers to accessing professional development? [e.g., issues related to funding (available money, cost to you personally), geography (distance and time required for travel, not having staff nearby), staffing (changes in staffing that breaks up collaboration, lack of availability of subs, teacher isolation, lack of curriculum coordinators/resources), or context (attitudes toward attending PD, lack of available PD in your interest area, lack of appropriate PD formats)] Please explain.
4. If you could design you own professional development experience, what would it include as key elements (e.g., working with a colleague to plan teaching strategies together, participating in a Professional Learning Community (PLC), learning about theory and applying it to your own classroom practice, etc.)
5. Describe your school and divisional numeracy goals. What is happening in your school currently regarding working toward those goals?
6. Describe your own goals regarding numeracy, mathematics teaching, and student learning in mathematics.
7. Describe the collegial environment in your school. Do teachers work together on collaborative tasks? Are you part of any of these collaborations?
8. You are what I refer to as "critical friends" or partners. You have volunteered/been nominated to participate in this project or cohort together. Tell me about your background with each other. How long have you worked together? What (if anything) have you collaborated on in the past? Why did you choose to work together on this project? What goals/perspectives do you share?
9. You indicated that you are interested in working toward _____ as an individual goal. How do you think you will know if you have achieved that goal? What will your practice look like? What will you see from students if that goal has been met?
10. What information, resources, and activities do you think you will need to meet your goals? What role do you envision this cohort taking in helping you meet your goals? How might members of the cohort support you in achieving your goals?

11. If you could design you own professional development experience, what would it include as key elements

Spring Interview Questions (Spring 2014)

1. Can you describe some of the things you have learned as a result of participating in this cohort?
2. Do you feel that your attitudes and beliefs about teaching mathematics have changed as a result of your participation? How have they changed?
3. Do you feel that your teaching practice has changed as a result of participation in this cohort? How has it changed?
4. Can you describe to what extent (if at all) you were able to collaborate with your critical friend/partner? Alternatively, did you have the chance to collaborate with other cohort members? What did this collaboration look like? How did it help you?
5. What types of student data (if any) did you utilize during this past year as part of your participation in the cohort? How did you use the data? Do you intend to continue collecting this sort of data? What role do you see student data playing in your teaching in the future?
6. What (if any) improvements in student learning outcomes have you noticed in your classroom? Describe what changes you made that resulted in these improvements?
7. At the beginning of the process, you identified your goals to be _____. To what extent do you feel that your professional needs have been met as a result of participating in the cohort? To what extent do you feel your goals were achieved?
8. Describe which parts of the cohort professional development structure were most beneficial to you (e.g., working with a critical friend/partner, observing classes, receiving feedback, online reflections, face-to-face sessions on particular topics, reading and reflecting on articles, conducting mini-action research projects). In what ways were they beneficial? Which parts do you feel were the least beneficial? What made them less effective for you?
9. At the beginning of this process, you identified the following barriers that you had experienced in accessing meaningful professional development: _____. Which, if any, of these barriers has the cohort addressed for you? In what ways were they addressed?
10. What suggestions do you have for making this process more effective in meeting your needs, improving teaching practice, and improving student learning outcomes in the second year of operation?

Second-Year Interview Questions (Spring 2015)

1. Can you describe some of the things you have learned as a result of participating in this cohort?
2. Do you feel that your attitudes and beliefs about teaching mathematics have changed as a result of your participation? How have they changed?
3. Do you feel that your teaching practice has changed as a result of participation in this cohort? How has it changed?

4. Can you describe to what extent (if at all) you were able to collaborate with your critical friend/partner? Alternatively, did you have the chance to collaborate with other cohort members? What did this collaboration look like? How did it help you?
5. What types of student data (if any) did you utilize during this past year as part of your participation in the cohort? How did you use the data? Do you intend to continue collecting this sort of data? What role do you see student data playing in your teaching in the future?
6. What (if any) improvements in student learning outcomes have you noticed in your classroom? Describe what changes you made that resulted in these improvements.
7. At the beginning of the process, you identified your goals to be _____. To what extent do you feel that your professional needs have been met as a result of participating in the cohort? To what extent do you feel your goals were achieved?
8. Describe which parts of the cohort professional development structure were most beneficial to you (e.g., working with a critical friend/partner, observing classes, receiving feedback, online reflections, face-to-face sessions on particular topics, reading and reflecting on articles, conducting mini-action research projects). In what ways were they beneficial? Which parts do you feel were the least beneficial? What made them less effective for you?
9. At the beginning of this process, you identified the following barriers that you had experienced in accessing meaningful professional development: _____. Which, if any, of these barriers has the cohort addressed for you? In what ways were they addressed?
10. Would you like to see the Numeracy Cohort continue in the future? What suggestions do you have for making it more effective in meeting your needs, improving teaching practice, and improving student learning outcomes?

Appendix B

Semistructured Interview Questions for Superintendent

1. Your background experiences may help shed light on your perspectives as a rural superintendent. Could you give me a brief description of your background (positions held etc.) so that I can better understand what experiences you draw from in answering my questions?
2. What challenges does the division face in providing effective PD for teachers?
3. What challenges do you think divisional teachers face in accessing effective PD?
4. What were the division's goals in creating the Numeracy Cohort (the PD model)? How does it fit within the broader PD context within the division?
5. What funding/financial considerations have been made in developing this model?
    a. How has PD been financed in the past? What changes in financing PD took place to implement this model?
    b. What funding barriers has the division faced in providing effective teacher PD in the past? Was the PD model designed to mitigate any of these funding barriers? If so, how? Were they effective?
    c. What has been the impact on the financial cost of PD for the division as a result of implementing this model? (What were the PD costs before and after implementation?) What is your opinion about the cost versus benefits of the PD model in terms of funding?
6. What geographical/logistical matters did you have to consider in creating the model? Can you describe how the PD model tried to mitigate any geographical barriers? To what extent do you feel the model has been successful?
7. Can you describe the decisions around staffing that you made to implement the PD model? Were any of these changes in staffing designed to mitigate challenges faced by the division with regards to the provision of PD for teachers? If so, to what extent do you think they were successful?
8. What do you feel is unique about this school division? How is the context of the division both different than other rural divisions and similar? How do you feel contextual differences in this division contributed to the creation of the PD model? Can you comment on any challenges posed by the local context and whether or not any of the challenges were addressed through the Numeracy Cohort initiative?
9. From what you know about Numeracy Cohort activities over the past two school years, how do you feel the PD model has supported teachers' professional growth in the area of mathematics instruction and student numeracy?
10. What social constructivist elements do you see within the Numeracy Cohort/PD model, and how do you feel they contribute to teacher professional growth within the local context?

Appendix C

Focus Group Discussion Questions for Principals

Opening script to be read:

I would like to thank each of you for contributing to this very important discussion. Your feedback is extremely valuable and important. Before we begin, I would like to set some ground rules for the discussion. It is important that you do not talk about specific teachers in your responses. Feel free to discuss your own experiences as much as you would like, but please refrain from making statements about particular teachers in your responses. Do you have any questions? Thank you again. We will spend approximately 6–7 minutes on each question. Let's begin.

1. Your background experiences may help shed light on your perspectives as a rural administrator. Could we just go around the table and, in about a minute, could you give me a brief description of your background (positions held, places worked, years in current position, etc.) so that I can better understand what experiences you bring to this conversation?
2. What challenges do you feel a small rural division like this one faces in providing effective PD for teachers (financially, geographically, in terms of staffing, or even in terms of the local context)?
3. As principals, you are at times responsible for the provision of PD for your staff? What challenges do you face in providing PD opportunities for your teachers?
4. What challenges do you think rural teachers face in accessing effective or meaningful PD?
5. Over the past two years, the school division has implemented a Numeracy Cohort, which is a PD initiative in the specific area of numeracy. How does the initiative fit within the broader PD structure of the division? What do you see as the strengths and challenges of this initiative from an administrator's perspective?
6. How do you think the Numeracy Cohort initiative has addressed some (if any) of the challenges facing rural divisions, administrators, schools, or teachers, through its design?
7. From what you know about Numeracy Cohort activities over the past two school years, how do you feel the PD model has supported teachers' professional growth in the area of mathematics instruction and student numeracy?
8. A social constructivist view of teacher PD recognizes
    - teaching as a complex activity
    - teacher PD as a fluid, emerging construct
    - the interrelatedness between the individual and his/her environment
    - the interrelatedness between existing beliefs and future actions
    - learning as constructed as opposed to transmitted
    - the importance of context on the learning process
    - the importance of discovery and inquiry-based active participation
    - the art and importance of leadership/facilitation
    - the importance of teacher-directed learning

- teacher PD as a lifelong, inquiry-based, collegial activity
- the importance of language and dialogue on the learning process
- the importance of reflection and dissonance/disequilibrium on the learning process
- the establishment of a collaborative, safe learning environment

9. What social constructivist elements do you see within the Numeracy Cohort/PD model, and how do you feel they contribute to teacher professional growth within the local context?
10. What do you think should be changed about the PD structure or Numeracy Cohort generally moving forward? What do you hope to see in the future? What constructive thoughts do you have about ways the cohort could be improved? What would you like to see continue? Do you have any thoughts about how this model could look long term?

Appendix D

Focus Group Discussion Questions for Cohort Teachers

1. What challenges do you feel a small rural division like this one faces in providing effective PD for teachers (financially, geographically, in terms of staffing, or even in terms of the local context)?
2. What challenges do you think rural teachers face in accessing effective or meaningful PD? What challenges have you faced personally?
3. How do you think the Numeracy Cohort initiative has addressed some (if any) of the challenges facing rural divisions, administrators, schools, or teachers, through its design?
4. To what extent do you feel the Numeracy Cohort has been effective in meeting teachers' needs in the area of mathematics instruction and student numeracy? What has it done well and where has it fallen short?
5. A social constructivist view of teacher PD recognizes
    - teaching as a complex activity
    - teacher PD as a fluid, emerging construct
    - the interrelatedness between the individual and his/her environment
    - the interrelatedness between existing beliefs and future actions
    - learning as constructed as opposed to transmitted
    - the importance of context on the learning process
    - the importance of discovery and inquiry-based active participation
    - the art and importance of leadership/facilitation
    - the importance of teacher-directed learning
    - teacher PD as a lifelong, inquiry-based, collegial activity
    - the importance of language and dialogue on the learning process
    - the importance of reflection and dissonance/disequilibrium on the learning process
    - the establishment of a collaborative, safe learning environment

What social constructivist elements do you see within the Numeracy Cohort/PD model, and how do you feel they contribute to teacher professional growth within the local context?

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The Role of Rural School Leaders in a School-Community Partnership

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Rural schools play central roles in their communities, and rural education scholars advocate for rural school-community partnerships to support school and community renewal. Across the United States, including in rural areas, formal models for school-community partnerships have been scaled up. The literature on rural principals highlights their roles in developing school-community partnerships, yet questions remain as to how school leaders engage in such partnerships. Using boundary-spanning leadership as a theoretical lens, this descriptive study examines the role of district and school leaders in a regional school-community partnership, including as founding members, champions of collaboration, cheerleaders for the partnership, and amplifiers of often excluded voices.

***Keywords*: boundary-spanning, rural schools, school-community partnerships, school leaders**

Rural schools play a central role in their communities (Lyson, 2002; Tieken, 2014). Rural education scholars have advocated for school-community partnerships as a means to reverse population loss and economic decline, as well as to generate educational and community renewal, resilience, and vitality (Bauch, 2001; Casto, McGrath, Sipple, & Todd, 2016; Cheshire, Esparcia, & Shucksmith, 2015; Schafft, 2016). School-community partnerships bring community resources into schools and in turn influence agencies and organizations that serve children and families, helping create alignment between spheres of influence over child development. Active leadership at the district and the school supports the development of school-community partnerships (Epstein, Galindo, & Sheldon, 2011).

School-community partnerships also serve as spaces for school leaders to engage with voices outside of traditional academic discourse (Miller, 2008). These partnerships create social frontiers or the places where people of various backgrounds come together to interact in purposeful ways (Miller, Scanlan, & Phillippo, 2017). To be effective, school-community partnerships require "social interactions, mutual trust, and relationships that promote agency within a community" (Bauch, 2001, p. 205) and "the development of a set of social relationships within and between the school and its local community that promote action" for the "common good" (p. 208). Social relationships support the collective processes of sense making that work to identify and define the common good and agreed-on actions to create it (Zuckerman, 2019). Miller's (2007, 2008) work on boundary spanning provides a theoretical lens for understanding how school leaders connect group members, serve as information brokers, and bring legitimacy and credibility to partnership efforts. Previous research suggests rural school leaders can play key roles in such partnerships by recognizing the interdependence of school and community (Budge, 2006). When they engage in relational, collaborative, and place-conscious leadership, rural school leaders can support community development by contributing to "the collective capacity of people to work together, determining and acting in a community's best

interest" (Schafft, 2016, p. 144) that supports community development. In this way, school leaders serve as conduits and bridge builders between school and community, creating social networks that support rural schools (Miller, 2007; Preston & Barnes, 2017). Likewise, Harmon and Schafft (2009) advocated for rural school leadership that engages in collaborative actions for community development. Miller (2007) suggests that school leaders can do so with diverse stakeholders through clear and regular communication, as well as the creation of coalitions around common goals. In rural communities, school leaders' central position and close-knit relationships (Preston & Barnes, 2017) can facilitate coalition building.

However, Miller's (2007, 2008) boundary-spanning leadership theory derives from urban contexts, and the suggestions of Harmon and Schafft (2009) have not yet been fully investigated. Given the renewed focus on school-community partnerships (Bauch, 2001; Henig, Riehl, Houston, Rebell, & Wolff, 2016; Henig, Riehl, Rebell, & Wolff, 2015) and collaboration as a means for rural school renewal (e.g., Harmon, 2017; Hartman, 2017; Preston & Barnes, 2017), this study provides a timely examination of the roles real-world school leaders played in the creation of a school-community partnership. This exploratory and descriptive case study answers this call by examining the roles of six school leaders who were active in a regional school-community partnership across eight school districts in an area of the Upper Midwest: a superintendent, three principals, a school board member, and an after-school program director. This analysis draws primarily on interviews with these school leaders, as well as approximately 35 additional Network members and backbone organization staff that took part in interviews and focus groups, as well as observations, and document collection. This study was guided by the following research questions: What roles do school leaders play in a regional school-community partnership? How do they engage in boundary-spanning leadership as part of a regional school-community partnership?

Literature Review

This review of the literature on rural school leaders and rural school-community partnerships provides context for the current study. It also introduces the StriveTogether Theory of Action, which guided the school-community partnership selected for this study.

Rural School Leadership

Rural school leaders encounter challenges in the many roles they must play in smaller schools and districts. With fewer teachers, administrators, and support staff, rural school leaders play many roles, including classroom teaching and instructional leadership, along with managerial and maintenance tasks (Preston, Jakubiec, & Kooymans, 2013). The small size of rural schools can create tensions in relationships with teachers, particularly around classroom observations and instructional improvement. Additionally, rural school leaders are tasked with serving as change agents, balancing policy demand and the needs of local communities (Preston & Barnes, 2017). Yet meeting the needs of the local community is challenged by fragmentation along class, race, and political lines, creating competing values around the purposes of schooling (Howley & Howley, 2010; McHenry-Sorber, 2014; Surface & Theobald, 2014). In regional partnerships that bring together members of multiple communities, these tensions are joined by differences in identity (Zuckerman, 2019). In balancing needs and serving as change agents, rural principals face significant scrutiny from communities, as well as personal and professional isolation (Preston et al., 2013; Zuckerman, n.d.). Likewise, rural principals face tensions between the needs of local communities and external policy mandates, such as the college and career readiness focus embedded in the Common Core state standards (Freeman, 2014) and other recent accountability measures.

However, rural schools and communities offer strengths for education. Preston and Barnes (2017) identified people-centered leadership as a key theme in the research on rural principals, including collaboration with multiple stakeholders. Owing to the small size of rural schools, principals are better able to build trust among staff, promote teamwork,

and support student achievement (Chance & Segura, 2009; Irvine, Lupart, Loreman, & McGhie-Richmond, 2010; Preston & Barnes, 2017). Effective rural school leadership depends in part on working closely with parent and other groups to engage in improvement efforts within the school (Barley & Beesley, 2007; Irvine et al., 2010).

Additionally, the smaller size of schools and communities facilitates personal relationships between school leaders and students and their families, allowing them to create a more personalized learning environment (Preston & Barnes, 2017). One way school leaders can engage with community members and create two-way relationships with community members is through opening of school space for community activities (Preston & Barnes, 2017). This work is facilitated by what Surface and Theobald (2015) call the blurry boundary between rural schools and communities. For example, rural school leaders are often active citizens in the community through participation in church and other community activities, such as coaching youth sports (Pashiardis, Savvides, Lytra, & Angelidou, 2011; Zuckerman, O'Shea, Pace, & Meyer, n.d.). These relationships both within and beyond the school walls provide social capital that can support schools and student achievement by increasing learning opportunities (Agnitsch, Flora, & Ryan, 2009; Klar & Brewer, 2014; Masumoto & Brown-Welty, 2009; Preston & Barnes, 2017). Such social capital has been identified as a key factor in creating partnerships between rural schools and communities (Budge, 2006). In this way, rural school leaders play boundary-spanning roles by engaging in relationships and communication inside and beyond the school walls (Miller, 2007; Preston & Barnes, 2017).

However, much literature on rural school leadership focuses on individual schools and their local communities. School consolidation has increased the number of individual communities served by rural schools and limited the availability of social networks for parents and children alike (Sherman & Sage, 2011). Further, the regional nature of social service provision suggests rural school leaders may need to engage in boundary-spanning leadership across larger social and geographic distances, such as those involved in the regional school-community partnership that is the focus of the current study.

Rural School-Community Partnerships

The literature on rural school leaders highlights connecting with communities. One way they can do this is through formal and informal school-community partnerships. Melaville (1998) defines school-community partnerships as "intentional efforts to create and sustain relationships among a K-12 school or school district and a variety of both formal and informal organization in the community" (p. 6). In rural areas, school-community partnerships have been viewed as an antidote to the urban-centric school reform that shifted from local control to distant experts during the twentieth century (Bauch, 2001; Jennings, 1999).

In part, school-community partnerships shift control back to the local level for school renewal by focusing on local goals and needs for education (Bauch, 2001). Rural education scholars have argued that partnerships between schools and their communities contribute to school reform and community development (Bauch, 2001; Harmon & Schafft, 2009; Schafft, 2016). By recognizing the interdependence of school and community (Budge, 2006), rural school leaders can contribute to community development, or "the collective capacity of people to work together, determining and acting in a community's best interest" (Schafft, 2016, p. 144). Further, these partnerships can help school leaders meet the educational needs of local communities (Schafft, 2016).

Bauch (2001) identified six types of school and community relationships: social capital, sense of place, parent involvement, church ties, school-business-agency partnerships, and the community as a curricular resource. Newer models may include some or all of these, as well as additional elements, such as early childhood, postsecondary education, and social service agencies (Zuckerman, 2016b; Lawson, 2013). These partnerships include homegrown, grassroots efforts (e.g., Biddle, Mette, & Mercado, 2018; Casto, 2016) and those that rely on models imported from urban areas (e.g., Miller, Wills, & Scanlan, 2013; Zuckerman, 2019). These models have been referred to as next-generation school-community partnerships (Lawson, 2013) and

include branded national networks, such as Promise Neighborhoods and StriveTogether. These models bring together community and regional stakeholders in education, health, mental health, and social welfare to support children and families inside and outside of school (Lawson, 2013).

The spread of these next-generation models for school-community partnerships, particularly those that originated in urban places, raises questions about their adaptation to rural places and to what degree they truly consider a sense of place that supports both schools and communities (Zuckerman, 2019). These considerations are particularly important given that models such as StriveTogether use the same neoliberal rhetoric of college and career readiness as federal policies that potentially threaten rural communities by placing global economic needs over those of the community (Casto et al., 2016; Freeman, 2014; Schafft & Biddle, 2013; Zuckerman, 2016c). Casto and colleagues (2016) criticize such models as taking a thin approach to human development by prioritizing individual achievement at the expense of community development. Partnerships engaging such approaches may exacerbate the outmigration of rural youth identified by Corbett (2007) and Carr and Kefalas (2009), thus diminishing the capacity of rural communities to adapt to changing economic, political, and social conditions (Cheshire et al., 2015), rather than contributing to rural community development.

Instead, Casto and colleagues (2016) argue that place-based school-community partnerships should be based on a "thick" conception of human need that includes place, shared identity, and relationships. However, to engage in a thick conception of human need in a national model, rural community members must engage critically with such models through sense making to tailor them to their needs, including increasing pathways to employment in the local community, increasing opportunities for positive youth development and cross-generational relationships, and including youth voice (Zuckerman, 2019; Zuckerman & McAtee, 2018).

However, complex partnerships require vertical and horizontal relationships (Casto, 2016). For school leaders, time and resources limit the ability to collaborate on the school side. A fewer potential partners on the community side further limit school-community partnerships, necessitating some partnerships beyond the local community (Masumoto & Brown-Welty, 2009). Yet the isolation of the community creates challenges in collaborating with other groups. Casto (2016) noted that these partnerships were not always mutually beneficial and seen as "just one more thing I have to do" (p. 159). This study examined the role of school leaders in the development of a school-community partnership that encompasses eight districts in a rural region, increasing the vertical connections for boundary-spanning leadership. This partnership drew on the StriveTogether Theory of Action, described in the next section, while also focusing on place, local needs, and relationships (Zuckerman, 2019).

StriveTogether Theory of Action for School-Community Partnerships

While much of the literature on rural school-community partnerships focuses on homegrown efforts, there is a movement across the United States to scale up proven models. One such model is the StriveTogether Theory of Action, derived from the StrivePartnership, a place-based school-community partnership in Cincinnati, Ohio (Henig et al., 2015). The StrivePartnership grew from the recognition that isolated efforts would continue to be insufficient for creating a completive workforce and that workforce development begins in early childhood, not just in high school and college (Edmondson & Zimpher, 2014; Henig et al., 2015). Between 2006 and 2014, a sense of urgency mobilized 300 organizational members in three school districts around a shared vision for change (Edmondson & Zimpher, 2014). This vision consists of four pillars: (1) a shared vision of student success; (2) goals, metrics, and indicators aligned to that vision; (3) data systems to collect and analyze student-level data on those metrics across organizations; and (4) strong, sustained, cross-sector civic leadership supported by a backbone organization.

In 2011, key leaders of the original group formed the StriveTogether Cradle to Career

Network to scale up implementation of this vision for change by providing tools and processes that can be adapted to local communities (Edmondson & Zimpher, 2014; Henig et al., 2015). These include the Student Roadmap to Success and the StriveTogether Theory of Action (Edmondson & Zimpher, 2014; StriveTogether, 2019). The Student Roadmap to Success outlines six research-based indicators of educational success: kindergarten readiness; student support inside and outside school; academic support, particularly for fourth-grade literacy and eighth-grade algebra; boosting high school completion; college enrollment; and college completion (Edmondson & Zimpher, 2014; StriveTogether, 2013).

The StriveTogether Theory of Action outlines developmental stages across the four pillars listed above, providing measurable benchmarks from "emerging" to "systems change" (StriveTogether, 2019, p. 2). For example, the emerging phase includes the development of a leadership table with a clear accountability structure; calls to action to mobilize partners; developing locally defined, evidence-based priorities; the collection and public release of baseline data; commitment to continuous improvement; mapping of community assets; and selection of a backbone organization and communication strategies (Edmondson & Zimpher, 2014; StriveTogether, 2019). Further development includes partnership agreements that define roles and responsibilities of members, sharing of data, the development of collaborative action networks to carry out collaborative efforts at multiple levels, and funding commitments to support facilitators, data management, and backbone organization staff (Edmondson & Zimpher, 2014; Hanleybrown, Kania, & Kramer, 2012). This document outlines the steps StriveTogether believes can lead to systems-level changes across multiple sectors.

StriveTogether-affiliated partnerships were identified for the original case study due to efforts to scale up the model in rural places, including the state where the researcher resided during data collection. The analysis presented here focuses on the roles played by several school and district leaders in a rural school-community partnership. To date, the literature on StriveTogether does not provide a clear understanding of the role of school leaders, and there is limited knowledge of how these partnerships translate to rural contexts. This article is the final in a series that has examined a StriveTogther-affiliated partnership in a rural context, including mobilization of stakeholders (Zuckerman, 2016a), the role of youth voices in this partnership (Zuckerman & McAtee, 2018), and how members made sense of local knowledge and knowledge of the StriveTogether model to adapt it to their context (Zuckerman, 2019).

Theoretical Framework

While rural schools often serve as centers of communities, collaboration with cross-sector organizational partners requires principals and superintendents to engage in boundary-spanning leadership (Miller, 2008). Organizations create boundaries by delineating the services they provide and the clients they serve (Goldring, 1996). In addition to these boundaries, individuals working within organizations have been socialized into their professions, with different approaches to problem solving, different language for describing problems, and different means of defining progress (Lawson & Briar-Lawson, 1997). Likewise, social groups create boundaries that need to be crossed to engage in school-community partnerships (Biddle et al., 2018). These boundaries create challenges for even the most skilled school leaders in working within social, organizational, and professional contexts different from their own (Miller, 2008). Previous research suggests that when school leaders act across boundaries they can engage in educational and social transformation (Driscoll & Goldring, 2002; Miller 2008; Sanders & Harvey, 2002).

This study draws on the theoretical framework of boundary-spanning leadership for community partnerships developed by Miller (2008), which describes eight characteristics of boundary-spanning leadership, each described briefly below.

1. *Social contacts:* Includes personal and professional contacts developed through years of engagement in the community. These contacts contribute to social capital. Wide varieties of social contacts are necessary for partnerships seeking to incorporate diverse perspectives.

2. *Trust:* Trust and respect among partners contribute to collaboration by supporting shared understandings and credible leadership.
3. *Interpersonal skills:* These skills include building relationships with a variety of individuals and a capacity to lead without being overly directive.
4. *Mobilize diverse partners:* Boundary-spanning leaders bring diverse partners to the table and work to overcome potential of intragroup misconceptions.
5. *Collect and disseminate information:* Collect and share relevant information and share with those that need it; keep everyone in the loop without burying them in minutia.
6. *Understand and appreciate complexity:* Tacit knowledge of social and organizational environments. Value many kinds of knowledge; understand how to get things done in different contexts.
7. *Mobilize groups around a common cause:* Develop purposeful, productive working relationships between partners and bring together disparate perspectives to address common needs.
8. *Flexibility and autonomy:* Engage with a wide range of constituents across organizations without organizational and political limits.

For rural principals, some of these characteristics may come as part of the job, such as diverse social contacts developed through years in the community, trust with community members, and developing interpersonal skills that support collaboration. However, others such as navigating complex social and organizational environments, mobilizing diverse stakeholders, and bringing together diverse views around common needs may not come with the territory of rural school leadership. Likewise, the flexibility and autonomy to move between settings may be severely limited by the many hats rural school leaders wear within their own buildings (Preston et al., 2013).

Methods

The larger study from which this analysis derives used a qualitative case study design that included interviews and focus groups with members of the Grand Isle Network (explained below), document collection, and observations of two key meetings. Case study was selected because it provides tools to examine phenomena that cannot easily be separated from context (Yin, 2014), such as place-based school-community partnerships that must be fitted for purpose, place, and time to be successful (Lawson, 2013). Case study also offers tools for answering *how* questions (Yin, 2014), such as how partnerships develop and operate.

Positionality Statement

The researcher occupied an outsider perspective in this case study, although a knowledgeable one informed by her experiences living and teaching elementary school in rural communities, including one similar to that identified in this study. The researcher also attended college in the state where this study took place, which helped create rapport with study participants. Additionally, she served as a graduate assistant on a multiple-case study of high-performing schools, focusing data collection and analysis on rural schools and their leaders. At the time of data collection, the researcher was enrolled in a doctoral program in school leadership and had recently completed the internship required for principal candidates. These experiences allowed the research to build rapport with study participants during data collection. Since then, she has taken a position teaching aspiring principals and superintendents in another, predominantly rural state, where she continues to research school-community partnerships and rural school leadership. This secondary analysis was suggested in the initial data analysis, as well as by the researcher's intersecting interests in preparing rural school and district leaders and furthering school-community partnerships in rural places.

Case Selection

Sampling focused on partnerships affiliated with the StriveTogether Network due to its national prominence at the time of the initial study, as well as

explicit efforts to scale up this model in the state where the researcher lived. This included the creating of an office within the state university system to provide technical support to partnerships using the StriveTogether Theory of Action across the state. Purposive sampling began with the publicly available list of StriveTogether-affiliated partnerships. These partnerships had completed a voluntary checklist that aligned with the developmental model of Strive, from emerging through proof point. This list was then cross-checked with county-level and school-level data (National Center for Education Statistics, 2014; U.S. Department of Agriculture, 2013) to identify a partnership in a nonmetropolitan county that served at least two rural schools. Two sites were originally identified, one in the Upper Midwest and one in the Northeast. Both were listed in the initial, "exploring" phase of the StriveTogether process. This includes the mobilization of stakeholders around a compelling need and commitment to a vision that extends from birth through entry into the workforce; the use of local data to identify areas of need; the development of a leadership table; a call to action; the creation of a report card; mapping of community assets and a commitment to continuous improvement processes; the identification of a backbone organization, or anchor entity, to provide logistical support; and the engagement of philanthropy (StriveTogether, 2019).

Because the guiding framework for the original study focused on civic capacity, or the mobilization of stakeholders around a common agenda (Stone, Henig, Jones, & Pierannunzi, 2001), it was important to select a partnership in which stakeholders had mobilized, developed shared goals, and were moving to community-level change. To assess the development of each site, the researcher spoke with the conveners of each partnership, who served as gatekeepers. In these conversations, one partnership appeared to be at the cusp of the next phase: emerging. This was evident in the planning of an event to present the first, baseline report card data to the public, which would also serve as a call to action to the public. As this site was moving toward action, it was selected to maximize what could be learned from a single, successful case (Stake, 1995). The convener agreed to participate and facilitate introductions to members.

This partnership, the Grand Isle Network (the Network),[1] brings together eight school districts across a large rural county[2] and portions of neighboring counties that are understood by residents as the greater Grand Isle area. In the past, extractive industries, including logging and mining, dominated the local economy. Today, growing economic sectors include health care, tourism, and services. The sparsity of population, approximately 20 individuals per square mile, creates challenges to bringing partners together, as do differences in values, beliefs, and identifies in the 30 towns and villages within the Network's boundaries. However, participants reported that a key strength of the area is the ability to work together, demonstrated by a 20-year-old school collaborative, the Grand Isle School Collaborative (GISC), and an early childhood collaborative, an early childhood program, which since the mid-1990s has been a collaborative effort among the school districts, Head Start, and the regional Department of Health agency. Additionally, Grand Isle is home to the Grand Isle Foundation (the Foundation), a private foundation dedicated to improving the lives of local residents and those in rural areas across the state. The Foundation served as a backbone organization during the first 5 years of the Network's development, providing logistical support, leadership, and facilitation of meetings.

Data Collection

Data collection occurred over two weeklong visits to the site and included interviews and focus groups with network members, observations of meetings, and document collection. The first weeklong visit was scheduled so the researcher could observe the report-card release event, and the second, so the researcher could observe a key meeting of the steering committee. Observations attended to events and dialogue among participants. To identify participants for interviews and focus groups, criterion sampling was used based on active membership, stakeholder type, and school district, to recruit a diverse group of participants. Because the Network spans eight school districts, efforts were made to recruit members from each of these districts; however,

because many members lived and worked in the population center, this was challenging. The final interview sample included participants from three districts, Winslow, Green Lake, and Big River, which includes schools in both the largest community and the more remote Little River K-12 campus.

Interviews were guided by a semistructured protocol[3] to assure similar data were collected across participants while allowing for individuals' thinking to be probed (Neuman, 2011). First-round interview protocols were designed to focus on members' understanding of the mobilization of stakeholders, the creation of shared goals, and the Network's theory of action. Additionally, participants were asked to describe their communities, particularly the opportunities and aspirations for young people. Two focus groups were held during the first site visit, which brought together members of working groups, including an after-school group and a workforce development group. These interviews were guided by similar protocols.

The second round of interviews focused on the transition to action, including community action groups that formed at the school level. During this site visit, focus groups were conducted by one of the consultants working with the Network. The consultant and researcher communicated via email about the protocol questions, which were similar to the interview questions in that they addressed the Network's transition to action at the school level. The inclusion of these focus groups in the research prevented them from having to answer the same questions twice. The purpose of these focus groups was explained to all members, and informed consent was gained. The research independently recorded and transcribed the focus groups. Although the presence of the consultant could have influenced how forthcoming members were, this did not appear to be the case, as the consultant had worked with the Network for several years and was familiar to members. The analysis presented here draws on interviews with six school and district leaders, along with 35 additional Network members and backbone organization staff that participated in 28 interviews and six focus groups. Additionally, data from meeting observations and blog posts provided triangulation. Table 1 provides information about each of these six leaders and their district using National Center for Education Statistics data accessed via the school search database (National Center for Education Statistics, 2014).

Table 1
Participant Characteristics

Pseudonym	Role	School/ district	NCES locale	District enrollment	FRPL%
Michael	Superintendent	Winslow	Rural distant	950	70%
Drew	After-school director	Winslow HS, Winslow	Rural distant	950	70%
Greg	Principal	Green Lake Secondary, Green Lake(5–12)	Rural fringe	1,000	50%
Steve	Principal	Little River Secondary (7–12), Big River	Rural remote	250	50%
Hal	Principal	Big River High School, Big River	Town remote	4,000	50%
Mark	School board member	Big River	Town remote	4,000	50%

NCES, National Center for Education Statistics (2014); FRPL, free or reduced-price lunch.

Data Analysis

All interview and focus group transcripts, along with meeting observation notes and documents, were uploaded in an NVivo database. For the initial case study, data analysis proceeded through an a priori coding scheme developed from a literature review on cradle-to-career networks and a conceptual framework of civic capacity, which describes mobilization of key stakeholders and the development of shared issue frames to drive community-level change (Stone et al., 2001). Examples of these codes include the parent code "mobilization" under which the child codes were created for "invitation" and engagement. Coding at this stage also included inductive coding to address concepts not identified in the literature review. These codes included "rural identity," which was an important concept for participants living in a rugged region dominated by lakes, forests, and mountains. Identity was also identified in how participants described the differences among the eight school districts. From this coding, leadership, and the various roles members played, was identified as an important factor in the development of the Network, which suggested further analysis of the roles played by school leaders in particular.

For this study, a narrative approach was taken to the data analysis using both within-case analysis and cross-case analysis (Stake, 2006), shifting the focus from the Network to each school leader as a case. The interview transcripts for each of the school leaders were read through several times. The researcher then wrote narratives to tell a story about each school leader and his role in the Network, moving from "elements to stories" (Polkinghorne, 1995, p. 12). These narratives created stories of each school leader's engagement in the Network. This allowed for their actions in the Network to be described in a more chronological fashion, as well as embedding them within the context of their schools and communities. Additional details were pulled from other interviews, observations, and documents to flesh out the stories and the roles played by each administrator. These narratives were then read for similarities and differences (Stake, 2006) to advance "from stories to common elements" (Polkinghorne, 1995, p. 12).

Findings

The original founding members of the Network included district and school leaders from across the eight component districts. Three principals, a superintendent, a school board member, and an after-school program director agreed to participate in this study. These school leaders served as champions for the Network within their organization, aligning activities in their school or district to the Network's goals, serving as cheerleaders in the wider community to mobilize stakeholders to the Network's vision, and amplifying the voices of youth. The narratives revealed that they each played somewhat different roles based on the institutional constraints of their positions.

Founding Members

The superintendent of the rural Winslow district, the principals of Big River, Little River, and Green Lake high schools, and the Winslow after-school director all served as founding members of the Network. As founding members, they engaged with members of communities across the Network and with members of organizations in the region after initial conversations within school district leadership indicated a need to look more broadly at the issue of student achievement. The GISC superintendents began to meet with Foundation leadership to discuss education and the convergence of their interests, which in turn led to conversations about more "intensive and intentional partnership" efforts. A Foundation member attributed the start of the Network to "that core of superintendents who were willing to step out and take a risk, you know, to try to trust each other. Then they had to go back to their staffs and their boards, a lot of skepticism that they had to overcome." This Foundation member particularly identified Michael, superintendent of Winslow district, as "one of the original voices" for the Network and reported he bears "a really heavy load right now, keeping the flame alive, helping newcomers understand and see their self-interest in this." Likewise, he was among the most frequently suggested individuals to talk to about the Network.

During the initial phase, which involved a series of community conversations, an intentional cross-section of community members in each district were

invited to participate, among them principals and superintendents. These community members engaged in iterative discussions about the state of education in the region and their hopes for the future. At the end of the third meeting, the facilitators issued a call for individuals to step forward as leaders for the initial plan that came out of the iterative series of meetings. Approximately 40 individuals stepped up as members of the core team, among them the principal of Big River High School, the principal of Little River High School, the superintendent of Winslow, and the after-school director at Winslow.

When asked why he joined the Network, Hal, the principal of Big River High School, stated he was invited by a Foundation member through his participation in the earlier GISC conversations. He stated that, for himself, he did not feel a sense of distrust in joining a community network but that he thought there was hesitancy among schools to get involved due to the tendency to blame schools and the tendency for outsiders to propose quick fixes without knowledge of the system. He stated the need to develop trust in the collaborative: "Once the school district sees that these people aren't attacking us and that they really truly want to help, it's overcome." He also reported that the Network's commitment not to add to the burden of schools facilitated their continued participation. Likewise, one of the conveners reported that school leaders began to get involved once the conversations in the nascent Network shifted from what one of the conveners described as the "No Child Left Behind rhetoric of failing schools," to the need to engage the community to support youth. This shift appeared to be an important one that allowed school leaders to engage more deeply in the work.

In their role as founding members, these school leaders took part in the development of the Network. The superintendent of Winslow, Michael, reported traveling to Cincinnati as part of a study group to visit with the original Strive Partnership group. Following this trip, the Network conveners facilitated a conversation among the Network members, who then shared their learning with the rest of the core team. Principals, on the other hand, reported that they could not get away from their schools for this trip but engaged in efforts closer to home, including the development of the Network's pathway outlining their aspirations. The Little River Secondary principal, Steve, reported the pathway development was a "long, long process, strategic planning type sessions, trying to hear everyone's voice at the table." He described these facilitated conversations as a place to get ideas out "in a brainstorming type environment that doesn't create boundary lines or turf protection." For him, this process highlighted that schools do a good job with most students, but for those who don't fit in "that box," schools need outside support.

Several of these founding members played additional roles in the Network. Steve reported serving on the communications committee that shares information with the wider community. Drew, the after-school director of Winslow, was also a member of an after-school network of providers. This group was engaged in increasing their offerings and access to them for low-income and more remote students, as well as using grant funds to assess the quality of their programming. The superintendent of Winslow, Michael, reported that, based on his previous leadership experience in the school collaborative and an early childhood collaborative, he was asked to serve on the governance council. This smaller leadership team took over from the core team to provide more accountable direction as the Network matured. Michael attributed his ability to take on a larger leadership role to the flexibility of his time as a superintendent, compared to principals and teachers.

Network Champions

In addition to contributing to the formation of the Network, school and district leaders engaged in leadership on behalf of the Network. One way they did so was through championing the Network's goals within their own settings. This was most evident at Winslow, where both the superintendent and the after-school director made efforts to align their work in the district with the Network's goals. This included securing grant funding for anti-substance abuse programing that allowed youth to plan activities at the high school after sporting events. Michael, the superintendent, also reported working with the board to support the priorities of

early childhood education, including increasing the number of early childhood classrooms in the district. According to participants, Winslow was the only district in the Network that had enough early childhood spaces for all who wanted to send their children.

The alignment to Network goals also was evident in the partnership between the district and the Boys and Girls Club to provide a 5-day per week after-school program in partnership with 4-H and other organizations. This effort was supported by the school board, which provided a late bus to allow students to participate, regardless of their parents' ability to provide transportation. The alignment to the Network's goals also included a summer program that included remediation and enrichment. A member of the after-school network attributed the success of this program to the support of the superintendent, who was described as "fully behind it," as well as a "mover and shaker" who can accomplish things and is "passionate about moving [after-school] to the next level." In a focus group with the after-school network members, there was consensus that superintendents need to "fully support" efforts to create 5-day per week after-school programs in each school.

Other efforts to bring the Network's goals into schools included the pathway document prominently displayed in the conference room where the interview with the Little River Secondary principal took place. At Green Lake Secondary, alignment to the Network's goals included bringing in retired community members as greeters 1 day each week, which its principal, Greg, reported as a means to facilitate intergenerational understanding, respect, and trust, as well as making school a more welcoming place. Additionally, Greg and two other secondary principals reported efforts to partner with local colleges to offer students a head start on coursework or entering the workforce with a certificate.

However, there appeared to be fewer initiatives aligned with the Network in their districts. One member of the after-school network attributed this to the priorities of the previous and interim superintendents in the Big River district, the largest by enrollment. This interviewee expressed hope that the next superintendent would embrace the goals of the Network. Others noted the importance of having a superintendent on board to champion the Network's goals in their district and "drive the engine." Michael highlighted his ability to do this through the "latitude about where I'm investing my time," while principals have less flexibility. Further, he stated that, while all of the school leaders supported the goals of the Network, each district had a different level of readiness to engage in efforts aligned to those goals, from funding to data analysis capacity. In part, Michael attributed this to the pressures of school accountability: "If [schools] aren't making annual yearly progress in reading, they're going to spend a lot of time focusing on reading data because they're in DEFCON mode."

School board member Mark also served as a champion. In his previous role as county sheriff, he had been involved in the Network, stating that in his 33 years of law enforcement, "kids have always been my focus." He reported becoming more involved after being elected to the Big River school board. He reported there was a need for prevention in areas such as drug abuse and law enforcement. In this role, he described reaching out to community members to help them understand the importance of education in the community and their stake in it. He reported using the message that "we all pay taxes. We all want to do well. We want our kids to do well. But we need your input on that. Because you have a stake in this." In particular, he reported bringing this message to people who do not have children in the schools, relaying this pitch: "You help educate kids through your tax dollars; it might be that individual that might be your doctor or your auto mechanic or the person who is working on your house. So really, you do have a stake in this." Mark reported people "perk up, their interest is there," when the message was framed that way.

Cheerleaders

In addition to serving as champions of the Network's agenda in their own district, several school leaders served as cheerleaders in the greater community by engaging in motivational framing activities (Zuckerman, 2016a). This included speaking at the community data launch event. From the stage, in front of tables of youths

and adults from across the region, after-school director Drew spoke emotionally about bringing people together around the vision of the Network and being passionate about building relationships and supporting students. Looking out at the nearly 200 adults and youths in the room, he said, "It takes a village to raise our youth. I'm glad the village is here."

Similarly, at this event Michael, superintendent of the Winslow district, emphasized the need to support academics with relationships. He spoke about research that identifies the need for "academic press," or high student expectations, to be supported by a productive climate in which schools and communities are connected and engaged "on all cylinders." In part, his ability to mobilize community members to the Network's goals may have depended on his expertise and his legitimacy in Winslow and the wider region. At the time of data collection, Michael had been superintendent for 8 years, and he had previously served as the high school principal in Winslow. His leadership in the region was evident in his position as the chair of the school collaboration that preceded the Network, as well as serving on local and state-level boards related to after-school and early childhood programs. Michael's leadership in the region and state suggests legitimacy, as well as broad professional networks that can facilitate the sharing of information, knowledge, and ideas (Miller et al., 2017).

Amplifiers for Youth and Other Voices

Lastly, school leaders engaged in boundary-spanning leadership by amplifying the voices of those who frequently hold little power in school improvement. This included efforts to amplify youth voices as an important contribution to the Network. In particular, Drew called attention to the importance of youth voice in developing after-school activities. In a blog post, he wrote:

> In my opinion, the best way to get teens to attend out of school time programming is to ask them what they want, when they want it and let them plan it. They build valuable skills by planning and implementing their own programming, no matter the content of the programming.

After-school director Drew reiterated this in a focus group, stating he wanted youths to plan activities while adults find ways to pay for them. His commitment to allowing youths to plan activities was also evident in his description of the "Fifth Quarter" activities that provide students with an alternative to drinking after sporting events. He described, campfires, movie nights, and "zombie tag" with flashlights in the dark school hallways. He gave the impression he was amenable to whatever the youths planned as long they were in a safe space. In this way, he crossed intergenerational boundaries to support those who normally lack power in education.

His support of those who are disadvantaged was also evident in the way Drew brought together students to create an action plan for Winslow High School using their survey data. He reported intentionally reaching out to teachers and club leaders to recruit youth from more challenging backgrounds, those he described as struggling to "maintain connections because I just think in the past they've been let down a lot." He continued, noting how important their participation was:

> But I feel like when they were part of this process, they were both super. They seemed like they were surprised that anybody would even ask for their opinion on something, you know those were my favorite two and they had a lot of the best answers too, so that was really neat to see kids from that—I don't know, they normally wouldn't have been selected for something like that I think. And they've offered a lot of great input.

The Green Lake Secondary principal, Greg, likewise served as a "proponent of student voice," as he described himself, both in his school and in the Network as a whole. At Green Lake, this included supporting an antibullying group started by a student with special needs. Greg connected the need for this to the recent suicides by three graduates of their school, as well as three suicide attempts from current students. He described the work of this student group, including securing a small grant for a movie and food: "Those kids that were in [that] group kind of they ran that whole night. And it was just really empowering and neat to see

them do that." Like Drew, Greg reported working to recruit students who are not the usual suspects for action planning, to develop their leadership abilities.

Other school leaders championed the inclusion of parents who are not typically engaged in schools. For example, the Little River principal, Steve, reported a need to engage these parents: "That is one of the areas that we're looking to improve. Just like student voice. And the, I think strategies do need to be developed because it's not going to happen by invitation or natural interactions." Here he appeared to be identifying the limit of social networks in the rural communities in the Network, which others identified as excluding low-income residents. To meet these parents, he suggested meetings after work hours and helping them see the benefit of the work. Others suggested helping parents with stipends to pay for gas, recognizing the large distances many would have to travel to participate in school events and Network meetings.

Additionally, Michael championed the inclusion of principals in the Network in order to be able to create change in the schools. He stated, "I think the principals are key to creating that change," and continued, "I think if we're going to really crack that [school change] I think it's the principals that have to be engaged in it. And we've seen that in [GISC]." He described that in previous initiatives "we've involved the principals early and often; I guess, those are the ones that we see results in. And that makes sense. I think the principal is probably the most important person in the whole school." Although he reported advocating for the engagement of principals in the Network, according to Michael and others, their participation remained limited. Michael attributed that to the limited flexibility principals have in their workday, stating:

> I think from a principal's perspective, it's kind of like, you let me know when you're ready to get something done, then I'll go to that meeting. And we can work on getting something done and we'll make it happen. But the 18 meetings that it takes to lead up to that point, I can't afford to be there.

Michael also identified the pressures of federal and state accountability measures, including new teacher evaluation measures being rolled out in the state at the time of the study, as limiting the ability of principals and teachers to engage in efforts that are not directly tied to assessments. He conveyed he believed teachers thought, "Not only my kids accountable but me now since my evaluation is tied to this data, to invest that." He continued, "So, if there's any sense that this might not contribute value to that, they can't afford to get involved in it."

Discussion

Previous research suggests that rural school leaders play many roles, including boundary-spanning roles in their relationships and collaboration with community members (Miller, 2007; Preston & Barnes, 2017). The spread of school-community partnerships as a means to address complex problems and community development (Henig et al., 2015) in rural places provides new spaces for school leaders to take on boundary-spanning roles. In the Grand Isle Network identified in this study, several school leaders contributed to the development of the regional partnership that brought together eight districts. Each school leader played important roles in the Network, from input on the goals as a founding member to serving as a champion or cheerleader to bring the message of the Network into their district and to the public at large. They also served to amplify the voices of those not frequently heard in these partnerships, specifically youths and low-income parents.

While Miller (2008) identified eight characteristics of boundary-spanning leaders in school partnerships, the school leaders in this study did not necessarily enact all eight. In particular, the degree to which they were able to carry out boundary-spanning leadership depended in part of the flexibility and autonomy available to them in their position. Miller (2007) stated that boundary-spanning leaders are able to move across boundaries when they have the freedom and flexibility to do so and the ability to negotiate institutional constraints. Superintendent Michael explicitly stated that his position provided him with more autonomy to pursue activities he believed would benefit the district. This allowed him to grow his network of professional contacts, particularly through previous collaborative efforts. His broad

professional contacts were evident in how frequently Network members identified him as someone to talk to about the Network. His longevity in his position and broad professional network appear to contribute to his legitimacy as a leader in Winslow, as well as across the Grand Isle region and the state. This legitimacy was also reflected in his selection as a member of the governance council. Likewise, his selection as a speaker at a large public event reflected his position as someone who could mobilize a wide range of community members to a common cause (Miller, 2008) beyond his district. He also served as a champion of disadvantaged students in his district (Miller, 2008), which served the greatest proportion of students qualifying for free and reduced-priced lunch by prioritizing increasing the number of early childhood spaces in his district through partnership efforts and a bond issue to build additional classrooms.

While his position as superintendent afforded him greater freedom and flexibility to pursue boundary-spanning activities (Miller, 2007), Michael explicitly identified the need for principals to be engaged in the Network. In particular, he identified principals as necessary to engage due to their ability to influence change in each school. However, building principals appeared more limited in their ability to engage in boundary-spanning leadership activities due to greater institutional demands on their time (Miller, 2007). Harmon and Schafft (2009) suggest that the pressure of accountability found in No Child Left Behind may limit the ability of school leaders to engage in the work of building partnerships with communities. This appeared to be the case for principals in this study, which was completed during a period of state policy changes to teacher evaluations, increasing the pressure on teachers and building leaders. Principals also appeared constrained by the necessity of being in their buildings during the school day. Network meetings were frequently held during the day, and most often held in the biggest community in which the Big River district was located. This limited the ability of those working in the outlying districts, many of which are 30 miles from Big River, to participate in these meetings.

Unlike principals, after-school director Drew and school board member Mark enjoyed greater flexibility and autonomy in carrying out their leadership roles. Both of their formal leadership roles required working across organizational and social boundaries, which served them well as members of the Network. For Drew, this included working with a group of out-of-school providers to create a 5-day after-school program in his district, as well as working with a group of providers to engage in quality assessment of programming. In addition to boundary spanning, in his position, he served as a cheerleader for the Network and an amplifier of youth voices both in his school district and in the Network. In this way, Drew engaged in efforts to champion the disadvantaged (Miller, 2008), particularly in the ways he sought out a diverse group of students to engage in action planning. For Mark, he saw his role as a school board member to engage in outreach efforts with community members. His campaign for election as a school board member took him door to door to speak to community members in a way that principals, often tied to their school, could not. In this way, he worked to mobilize community members to a common cause (Miller, 2008) in the form of the Network's pathway.

The findings of the study identify the importance of superintendents engaging in regional, cross-sector school-community partnerships. However, as district superintendent Michael pointed out, principals are key actors in bringing about changes within their schools and need to be connected to these partnerships. Yet the constraints on principals' time, tightened by the increase in teacher evaluation policies that have increased teacher observations since Race to the Top, make engaging in school-community partnerships more challenging for school leaders.

Conclusion

This study contributes to the knowledge about the boundary-spanning leadership roles rural school leaders can take in regional school-community partnerships. Harmon and Schafft (2009) wrote, "Cultivating collaborative and meaningful school community development will be a hallmark of good public schools that can meet the challenges facing rural communities and their students in the 21st Century" (p. 8). In the Grand Isle Network, school

leaders engaged in various boundary-spanning leadership practices that contributed to the development of the Network. These included conversations among school leaders and members of other organizations in the area, engaging in study trips with Network members, building professional networks, developing legitimacy and trust, mobilizing diverse community members to shared goals, and communicating with others to share information.

The ability of school leaders to engage in boundary-spanning efforts in the Network appeared to be facilitated or constrained by their formal leadership roles. For those leading after-school programs, working across organizational boundaries may already be part of the job. Likewise, school board members are well positioned to span the boundary between community members and district leadership and to empower community members (Van Alfen, 1992). Van Alfen (1992) identified school board members as key leaders in building coalitions and developing linkages among education professionals and all those in the community who have a stake in educating children. This study suggests part of this work of school boards is framing public education as a benefit to all community members, as well as speaking from a place of credibility and legitimacy.

Principals have been described as situated at the "boundary of the school and its environment" (Beabout, 2010, p. 26), and Barley and Beesley (2007) identify the importance of principal leadership across the school and community boundary as contributing to successful rural schools. However, principals in this study appeared significantly constrained when it came to engaging in a regional network across multiple districts. Like previous research, this study suggests rural principals have many demands on their time (Preston et al., 2013). Participants also identified the pressure of federal accountability policies as constraining their participation in boundary-spanning leadership activities. The findings suggest the need for superintendents to engage in buffering activities to decrease the pressure from accountability measures to focus on local goals (Zuckerman, Wilcox, Durand, Schiller, & Lawson, 2018) and to free up time to pursue boundary-spanning leadership activities that would benefit their schools. This is particularly important as the superintendent identified the importance of bringing principals on at the right time to carryout change in their schools.

In addition to buffering roles, rural superintendents may be better positioned to engage in partnership efforts due to the relative flexibility that comes with their positions. Likewise, superintendents who regularly engage with multiple constituencies may be better equipped to engage in boundary-spanning leadership in these partnerships, including social skills and broad social and professional networks (DeMatthews, Edwards, & Rincones, 2016; Miller et al., 2017). Further, superintendents may bring credibility and legitimacy (Miller, 2008) across the region necessary to mobilize a broad set of community members to the efforts. Additionally, participants identified the need for superintendents to engage in the Network to provide linkages to schools and leadership to align school efforts to the Network's goals. Participants suggested a need to recruit superintendents to the vision and for superintendents to work closely with board members to pursue activities that align with partnership goals and for superintendents to build capacity of school level leaders to engage in partnership efforts. This capacity could include boundary-spanning leadership skills, particularly in working with low-income parents and students. Developing the capacity of principals to engage in boundary-spanning leadership could contribute to the ability of regional networks to create partnerships that can contribute to concurrent school improvement and community development, as suggested by Schafft (2016).

Notes

[1] All names of individuals and places have been replaced with pseudonyms.

[2] For additional details on the eight school districts, see Zuckerman (2016a).

[3] Interview protocols available on request.

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About the Author

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Rural High School Principals and the Challenge of Standards-Based Grading

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The purpose of this study was to better understand how principals in rural schools are thinking about assessment and grading practices and if they anticipate implementing policy changes in the near future that may require increased support. Principals of schools in rural areas often face challenges that are significantly different from those of their urban and suburban counterparts. The researchers used a mixed-method survey to better understand if progressive grading policies were a part of the vision for principals of rural high schools, if they possessed conceptual underpinnings of such practices, and if they believed they had the capacity within their districts to lead teachers toward more effective grading policies. A high frequency of high school principals in rural schools said standards-based grading (SBG) was a part of their 5-year vision. These principals also showed relatively high mean scores of standards-based assessment literacy, and moderately high percentages believed they have the resources and capacity to support SBG. The researchers thus conclude that there is a high likelihood that many rural high schools will be implementing some form of SBG within the next 5 years.

***Keywords*: standards-based grading, assessment, secondary schools, school leadership**

Principals of schools in rural areas face challenges that are significantly different from those of their urban and suburban counterparts (Parson, Hunter, & Kallio, 2016). As more schools move away from traditional grading practices in favor of a standards-based grading (SBG) approach, the voice of rural school leaders, particularly with regard to the barriers they face in their attempts to update grading and assessment practices, ought to be heard. Thus, the purpose of this study was to better understand how principals in rural schools are thinking about assessment and grading practices and if they anticipate implementing policy changes in the near future that may require increased support.

Despite findings from the literature suggesting traditional grading practices are not equitable for students (Feldman, 2019), distort the accuracy of what students have actually learned (Guskey, 2013), and undermine assessment integrity (Reeves, Jung, & O'Connor, 2017), grading in twenty-first-century schools remains largely the same as it was over 100 years ago. A small but growing number of schools are challenging the status quo by moving to SBG practices (Iamarino, 2014). In a previous study, we found that a second wave of implementation of SBG is most likely coming to one midwestern state (Townsley, Buckmiller, & Cooper, 2019). This state appears to be a regional leader in grading reform. Urban and suburban schools in this state have forged forward with updating grading practices as documented in the local media outlets.

Not as well documented are the efforts of rural schools, however. Renihan and Noonan (2012) reported that principals in rural areas were generally

reluctant to initiate assessment and grading changes in their schools. We wanted to better understand if progressive grading policies were a part of the vision for principals of rural high schools, if they possessed conceptual underpinnings of such practices, and if they believed they had the capacity within their districts to lead teachers toward more effective grading policies.

The results of this study could assist high school principals in rural areas in anticipating potential barriers and roadblocks if they are considering making changes to their grading and assessment practices and policies. Because rural principals specifically struggle to make effective grading changes in their schools (Renihan & Noonan, 2012), this study fills a problematic gap in the literature. In addition, school administrator preparation programs and school leader professional organizations might benefit from better understanding the instructional leadership challenges faced by high school principals in rural areas when moving toward more effective grading practices.

Literature Review

Rural Principal Instructional Leadership Challenges

Rather than exclusively managing a school's daily operations, today's principals are tasked with helping teachers improve their pedagogical practice to improve educational outcomes for students. The principal's role as an instructional leader includes developing a vision for quality curriculum, aligning the curriculum to state standards, and monitoring the implementation of curriculum across the building (Glatthorn, Jailall, & Jailall, 2017). Parson et al. (2016) reported that rural principals faced instructional leadership barriers that were significantly different from those of their suburban and urban counterparts. In our particular state, rural principals often simultaneously serve in district roles overseeing extracurricular activities, student services, and transportation, all while being responsible for the management and instructional leadership for their assigned building(s). In other words, rural principals have multiple responsibilities within their schools, some of which are typically taken on by assistant principals or district office personnel in more urban settings. Therefore, balancing management with instructional leadership is a habitually cited challenge (Cruzeiro & Boone, 2009; Preston, Jukubiec, & Kooymans, 2013; Wieczorek & Manard, 2018). As such, rural principals report spending more of their time on management rather than instructional leadership (Parson et al., 2016). Because of these increased and varied responsibilities, rural principals often spend less time working directly with classroom teachers compared to principals of larger schools (Stewart & Matthews, 2015).

In addition to time constraints, several other key resources to lead curriculum and instruction change initiatives are often less available to rural principals. For example, rural principals often have insufficient financial resources to improve schools compared to their suburban and urban counterparts (Wieczorek & Manard, 2018). Financial constraints are often further compounded by the need to hire external consultants when making effective instructional leadership changes in rural schools (Barley & Beesley, 2007; Preston & Barnes, 2017), rather than leaning on capacity from within the school.

Despite this seemingly uphill battle, rural principals have expressed a strong desire to make positive changes in their schools. When asked to identify their needs for leadership professional development, rural principals suggest facilitating change as a top priority (Salazar, 2007). In addition to specific professional learning, many rural principals have expressed an interest in receiving formal mentoring in order to improve their leadership potential (Duncan & Stock, 2010). If principals are going to overcome their documented reluctance to initiate grading and assessment changes in schools (Renihan & Noonan, 2012), it is important to discern their knowledge of the change and determine their capacity to make it happen.

Standards-Based Grading

Schools desiring to communicate learning more effectively based on standards such as the Common Core state standards have increasingly relied on SBG, often called standards-referenced grading (SRG) (Spencer, 2012). A common next step for schools aligning their standards with assessments is to begin reporting student learning

based on standards. In particular, aligning curriculum and assessments with standards is a key indicator for student success in rural schools (Barley & Beesley, 2007). Rather than communicating an omnibus grade such as an A or B– for each assessment, SBG involves teachers reporting multiple indicators of student learning, such as "Jaimé is 'proficient' in finding the area of a triangle and 'developing' in his understanding of an area of a circle." Although the specifics of SBG may differ across districts, experts agree this philosophy of grading includes the following tenets (Iamarino, 2014; O'Connor, 2018; Reeves et al., 2017; Townsley, 2018; Vatterott, 2015):

- separate grades for academic and behavior/citizenship,
- grades based on state or national standards,
- the importance of clear expectations of levels of achievement,
- not counting homework/practice toward the final grade, and
- multiple opportunities to demonstrate proficiency.

While SBG/SRG enhances communication of student learning with parents, teachers also report benefits to their instructional practice. One such example noted by secondary teachers is that lesson planning and assessment become more purposeful in an SBG classroom (Knight & Cooper, 2019). Not surprisingly, some parents have reacted favorably to standards-based report cards compared to more traditional reporting (Swan, Guskey, & Jung, 2014).

SBG at the high school level presents several unique challenges. Teachers report that adolescents have been trained to chase points and percentages and therefore may be slow to adapt to a system more focused on learning (Schiffman, 2016). Similarly, high school students in the early years of implementation confirm the perceived lack of motivation fueled by SBG practices (Peters, Kruse, Buckmiller, & Townsley, 2017). Because homework is no longer attached to a point value, some high schoolers may choose to not complete it at all and take their chances on the unit assessment. High school parents have expressed concerns related to this initiative's potential negative effect on college admissions and scholarship opportunities (Peters & Buckmiller, 2014). While high schools can learn from the successes and struggles of elementary SBG implementation, secondary principals will experience these and other anomalous issues specific to the years leading up to postsecondary activities.

Principals Leading SBG Reform

Principals are tasked with leading and improving all aspects of curriculum, instruction, and assessment in the school (Glatthorn et al., 2017). However, grading as an element of instructional leadership is often neglected due to a deficit in school leaders experiencing training in formal grading practices and grades being deeply rooted in tradition (Guskey & Link, 2019). Despite evidence suggesting our traditional grading practices are poorly designed to communicate student learning, teachers are typically left alone to make grading decisions based on their own professional judgment, without any explicit guidance from school leaders (Link, 2019). Rural principals in particular assume their teachers possess effective grading and assessment practices and thus are generally reluctant to provide support for teachers in this area of curriculum and instruction (Renihan & Noonan, 2012).

A few studies to date have described principal leadership actions needed to successfully implement SBG at the high school level. In a small sample of Illinois high school principals, Weaver (2018) found a collaborative leadership style, including teachers throughout the process, to be helpful, coupled with a commitment of multiple years of differentiated professional development for teachers. Similarly, a high level of trust between teachers and administrators is needed to successfully lead the complex change of basing grades on learning rather than points (Urich, 2012). In the early stages of conversing about grades with faculty members, school leaders are advised to start by first agreeing on the purpose of grades (Brookhart, 2011). Following the visionary phase, barriers described by school administrators include working with student information system vendors

and an inevitable implementation dip (Knight & Cooper, 2019; Peters & Buckmiller, 2014). Conversely, principals report benefits from involving teachers' voices throughout the conversion to SBG (Urich, 2012; Weaver, 2018). With these challenges and opportunities in mind, the purpose of this study was to better understand how principals in rural schools are thinking about assessment and grading practices and if they anticipate implementing policy changes in the near future, which may require increased support.

Methods

Design

Approximately 276 high schools are considered rural in this midwestern state. Using SPSS, we disaggregated the data by those who self-identified their school as rural based on their classification in state association athletics and the state's urban educational network membership roster. Among participants who identified their district as rural, 85 completed the survey, for a 31% response rate. In some cases, the responses of the rural participants were compared to responses from individuals in the data set who were from suburban/urban schools (n = 15). Our research questions for this study were as follows:

1. What is the likelihood that principals of rural high schools will implement SBG practices and policies in the near future?
2. To what extent do principals in rural areas assess themselves as having the content knowledge necessary to lead this reform in their high school?
3. To what extent do leaders of rural high schools who are considering adopting SBG policies believe that the school/district has capacity to support such an effort?

Survey

Survey questions were crafted using widely cited literature written by experts in school assessment and change leadership. For example, Fullan and Quinn (2016) assert school leaders ought to lead change with a strong vision, deep knowledge of the change, and a desire to build capacity within the organization. Building on teacher perceptions of SBG noted in Hany, Proctor, Wollenweber, and Al-Bataineh (2016), our survey was created with three sections: vision (1 question), knowledge of SBG (5 questions), and capacity within the school organization to implement (5 questions). Five-point Likert response scales were used to prompt participants' assessment of the statements ranging from, for example, 1 (*not a part of my vision*) to 5 (*strong part of my vision*). For questions related to knowledge of SBG, such as, separate grades for academics and behaviors/citizenship, a 5-point Likert scale assessing importance was used and ranged from 1 (*not important at all*) to 5 (*very important*). Additionally, a 5-point Likert level-of-agreement scale was used to assess the extent to which participants agreed with the survey statements on capacity to implement. Finally, one open-ended question asked about potential challenges the principals anticipated as they thought about the implementation process of grading reform.

Prior to finalizing the survey questions, we sought feedback. We used a pilot study with similar questions and sent it to 10 school administrators we knew. The people who took the pilot test were not included in the participant pool. We modified a couple of the questions based on their feedback. For example, we clarified the issue of transforming the SBG mark into a letter grade as a result of the feedback. Thus, on the final survey, we asked each participant to assume that, with all the questions/scenarios, the high school will transform the marks to letter grades on the report card. This is a typical concession that high schools make in grading reform to appease parents and the university/college application process (Peters & Buckmiller, 2014; Riede, 2018).

Participants

In January 2018, we sent our Qualitrics survey to the email addresses of every high school principal in the state. A list of these emails was made available by the state Department of Education. With the various school sharing agreements, there were 316 (Iowa Department of Education, 2018) high school principals in the state. These principals were also sent the informed consent documentation regarding participation in the study. To be eligible to

participate in the study, participants had to be a high school/secondary principal and in a school that had not as of yet implemented an SBG system. This study was a part of a larger study of all high school principals in the state. However, since the response rate from principals in rural schools was strong, we decided to perform a study specific to those in the rural school context.

Data Analysis

We used SPSS to disaggregate the data and calculate the descriptive statistics. The data analysis included ideas from Onwuegbuzie and Teddlie's (2003) multistep process for the analysis of mixed-method research: data reduction, data consolidation, and data integration. We engaged in data reduction as we compared and contrasted data from the Likert scale and open-ended question to begin prioritizing potential codes for qualitative analysis. For example, we noted comments in the qualitative data related to external factors such as parent support and internal factors such as teachers pushing back on SBG. Similarly, we noted challenges in the open-ended question delineating internal versus external factors. Any data not related to internal or external factors was set aside. In the data consolidation phase, the results from the quantitative question prompted areas of further analysis particularly with the open-ended question. We initially sorted the responses to the open-ended question, using open coding (Strauss & Corbin, 1990), into broad categories to reduce the data and identify general patterns. Anchor codes included internal and external implementation challenges. Internal implementation challenges included teachers impeding the process, which was further described by such comments as "mind-set of teachers." Finally, we integrated the qualitative and quantitative data into a coherent whole to answer the research questions.

Results

Vision

The vision question asked to what extent SBG is a part of the principal's vision in the next 5 years. We wanted to understand if there would, in fact, be a second generation of schools moving toward an SBG approach. The data show that principals in rural areas of this state are interested in implementing SBG practices within the next 5 years. Specifically, the mean score for rural principals when answering this question was 4.01 (*SD* = 0.94) on a 5-point scale. No participant responded with a 1 (*not a part of my vision at all*) on the 5-point scale.

Knowledge of SBG/SRG

It is imperative that school leaders have an understanding of SBG/SRG prior to implementing new grading practices (Heflebower, Hoegh, & Warrick, 2014). The researchers created this bank of questions from the literature on SBG to better understand the extent to which these principals know, understand, and support the components of an SBG system. The prompts for this bank of questions included separate grades for academic and behaviors/citizenship, grades based on state or national standards, the importance of clear expectations of levels of achievement, not counting homework/practice toward the final grade, and multiple opportunities to demonstrate proficiency. As detailed above, the response scale ranged from 1 (*not important at all*) to 5 (*very important*). Experts in the field consider these topics critical components of an SBG system and to having strong literacy around these topics and understanding their importance to the grading system (Iamarino, 2014; O'Connor, 2018; Reeves, et al., 2017; Townsley, 2018; Vatterott, 2015).

The rural principals rated the issue of providing clear expectations regarding levels of achievement highest, with a mean score of 4.85 (*SD* = 0.59), indicating that rural school leaders understood that this was an important part of an SBG program. The lowest mean in this block of questions was in response to the question, When you think of effective grading practices, to what extent is the component not counting homework/practice toward the final grade important to SBG practice (*M* = 4.02, *SD* = 1.12). Although the standard deviation reveals a bit more variability in participant responses, not counting homework as a part of the final grade tends to be a difficult idea, because traditionally it has been a component of a student's grade. Teachers often think that if the homework doesn't have teeth, or count toward a final grade, students will not

complete the homework or practice (Vatterott, 2011).

When asked to what extent grades should be based on the statewide Common Core standards, the mean score was 4.52 (*SD* = 0.77). This falls between 5 (*very important*) and 4 (*somewhat important*), which is interesting because state code stipulates that the Common Core be fully implemented in all public and nonpublic accredited schools. Eighty out of the 85 respondents ranked this component as a 4 (*somewhat important*) or 5 (*very important*).

On the topic of separate grades for academic and behavior/citizenship, the principals gave a mean score of 4.41 (*SD* = 0.98). When comparing this mean score from the rural principals with the mean score from suburban/urban principals (*M* = 4.93, *SD* = 0.27) in our data set, an independent-samples *t*-test indicated that there was a statistically significant difference between those two groups, $t(76.3) = 4.04$, $p < .001$. Levene's test for equality of variances was significant; thus, results for equal variances not assumed are reported for the independent-samples *t*-test.

Finally, the rural principals indicated a high level of importance that SBG provided multiple opportunities to demonstrate proficiency, with a mean score of 4.64 (*SD* = 0.75). Furthermore, a total of 91% (*n* = 78) of the respondents ranked this statement as either 5 (*very important*; *n* = 64) or 4 (*somewhat important*; *n* = 14).

Overall, the data seem to indicate, for the most part, that principals in rural areas have a good sense of the big ideas generally related to assessment and grading that are standard based but do not see the ideas as important as do their colleagues in suburban and urban high schools. These ideas, however, form the foundation of an SBG system.

Capacity Within the School Organization to Implement

The final bank of questions was designed to understand the extent to which principals believed they had the capacity to implement these grading practices in their school/district. The implementation phase has proven to be difficult, as several variables are critical to the success of an SBG initiative (Peters & Buckmiller, 2014).

Nearly 73% (*n* = 62) of the rural principal respondents agreed either *strongly* (*n* = 21) or *somewhat* (*n* = 41) that they have the resources in their school to implement a shift in grading practices toward an SBG approach (*M* = 3.74, *SD* = 1.15). This mean is quite a bit lower and includes more variability in responses compared to results for suburban and urban school principals who participated in this survey (*M* = 4.13, *SD* = 0.64). Generally, resources needed to implement SBG practices would include funding to support staff learning and scheduling time for teacher collaboration or professional development.

Implementation of a grading initiative requires a thoughtful plan (Brookhart, 2011). Of those rural principals who responded to our survey, 73% (*n* = 62) also indicated they have an understanding of the steps required to undergo a shift of grading practices (*M* = 3.81, *SD* = 1.15). Once again, results for rural principals was lower and had less variability than those for the suburban/urban principals (*M* = 4.20, *SD* = 0.77).

When asked if their teaching faculty have the disposition to use SBG strategies as opposed to traditional grading practices, 69% (*n* = 59) of the rural principals indicated some level of agreement (*strongly* or *somewhat agree*), with 13% (*n* = 11) disagreeing (*strongly* or *somewhat*) and 18% responding *neither agree nor disagree*. Descriptively, rural principals reported a lower mean score (*M* = 3.88, *SD* = 1.07) to this statement compared to the suburban/urban principals (*M* = 4.33, *SD* = 0.62). This is consistent with the open-ended data in this study, where school leaders indicated that teachers may be a barrier to implementation.

Lastly, we asked principals to share their perceptions regarding to what extent they believe the leadership structure is in place to support a shift in grading practices, namely, at the superintendent, central office, and school board levels. Approximately 67% (*n* = 57) of rural principals indicated they believe that the upper administration and school board would support an SBG approach. Nearly 15% (*n* = 13) of the rural principals did not

agree that the leadership structure would support this type of grading shift. When comparing means, rural principals once again had a lower mean score and more variability in their responses (M = 3.73, SD = 1.07) than their suburban/urban counterparts (M = 4.20, SD = 0.86).

Open-ended Question

In addition to the Likert scale questions, the survey concluded with an open-ended prompt: What are the factors in your district that may impede the implementation of an SBG system? Beyond vision, knowledge, and capacity, the researchers desired to capture barriers rural principals anticipated in their local context. The most common response was coded as parent and community support. Parents and/or community were mentioned 28 separate times. Some of the representative comments were "selling it to parents" "parental push-back," "parents lack of understanding," "community support," and "community understanding" of the reason for the shift. Rural principals appear to be aware of their communities' unique needs yet may not be confident in their ability to communicate changes in grading practices to their constituency. When considering the grading game parents and community members grew up playing in American schools (Kirschenbaum, Simon, & Napier, 1971), rural school leaders may anticipate a need to proactively educate their communities.

The next most frequent comment revealed that principals seem to think some of the teachers may impede the implementation of new grading practices. Sixteen separate comments were coded in this theme. Representative comments include "some teachers do not understand the value of rest retakes or separating behaviors and grades," "resistance in the paradigm shift with veteran teachers, mindset of the teachers," and "finding teachers to willingly pioneer the change in their classrooms." Because rural principals report spending a disproportionate amount of time on management tasks rather than working directly with their teachers (Stewart & Matthews, 2015), it will be important for school leaders to anticipate and address the unique questions their stakeholders may have throughout the change process.

Discussion

Research Question 1

High school principals in rural schools responded with high frequency that SBG was a part of their 5-year vision. They also had relatively high mean scores for standards-based assessment literacy, and moderately high percentages of those school leaders believe they have the resources and capacity to support SBG. Thus, we believe there is a high likelihood that many rural high schools will implement some form of SBG within the next 5 years.

Research Question 2

Participants in this study claim to have a good understanding for the importance of the big ideas related to SBG, even though they generally scored lower than their nonrural high school counterparts on questions regarding the basic components of an SBG system. It is imperative that educational leaders have a strong literacy of assessment and grading methods if they are to advocate for such practices (Heflebower et al., 2014). A deep understanding of these new practices will be especially helpful in supporting high school teachers who report their personal high school student experience using traditional grading as a point of philosophical dissonance (Olsen & Buchanan, 2019). In short, our data suggest that these high school principals have a good understanding of the knowledge regarding the big ideas in an SBG system.

Research Question 3

Owing to the relatively high percentages detailed in the data section, we think principals are likely to take on the challenge of implementing this grading shift because they have enough capacity within their school and district to move forward. Because, generally speaking, assessment and grading have not changed significantly in schools across the country, expertise in this change management is needed. These data show that principals in rural schools may face some greater challenges compared to their counterparts in nonrural settings. For example, in all of the implementation questions (resources, strategic planning, faculty, leadership structures), rural

principals' mean scores were lower than those for principals in suburban and urban settings. This difference seems to indicate that these high school principals may need some support, as they may not be confident in the capacity within their organization to implement these changes, which may alter strategic planning processes.

Conclusions

Changing traditional grading practices and policies in a high school is no easy task, and maybe even more so in a rural setting. Traditional grading has been a part of American school vernacular for the past 100 years. Unfortunately, there is little research to support traditional methods as an effective conduit for communicating student learning (Brookhart et al., 2016), which should pave the way for updated, research-based assessment and grading methods. Still, the fact remains that implementing an SBG system is a difficult task, as the struggles of early adopters of SBG have documented (Peters & Buckmiller, 2014). A thoughtful strategic implementation design is essential to success, and even then, implementation will face significant roadblocks.

Comments from the open-ended responses reveal that school leaders seem to think parents and community members may impede the process. Anecdotally, this is what we hear from practitioners in the field and have experienced when working with school districts. Parents and community members are products of traditional grading practices—it is what they know and understand. But by such responses as "lack of understanding," "getting information to the community," "misinformation," and "more opportunities for learning about SBG is needed," we think leaders are moving beyond simply blaming the parents with a roadblock label. Instead, leaders seem to understand that there may be work to do in educating parents/community members and helping parents better understand the rationale, advantages, rules, and research behind these grading practices. Since this parent/community education is an important step in the implementation process—and one that takes a lot of time—rural school leaders are advised to take the time to build rapport with their staff and community (Ashton & Duncan, 2012). As a part of this process, high school principals should consider proactively engaging area college and university officials to assist in generating narratives for parents to hear and read, in order to quell commonly cited concerns related to SBG and postsecondary preparation (Peters & Buckmiller, 2014). Moreover, school leaders are also advised to keep their boards of education informed throughout all phases of SBG development (Townsley, 2017).

Given that principals in rural areas are generally reluctant to initiate assessment and grading changes in their schools (Renihan & Noonan, 2012), we believe that entities such as state departments of education, educational service agencies, and university/college partners should be prepared to offer further support in these implementation endeavors. Battistone, Buckmiller, and Peters (2019) found that teacher education training on progressive assessment practices was inconsistent at best. Further, as Anderson (2018) asserts, typical classroom assessment courses in teacher preparation programs typically devote only a single chapter at most to grading practices. Therefore, high school leaders will need to provide ongoing support for new teachers through in-service workshops and professional development to further refine their knowledge and skill level regarding methods and rationales for SBG. Organizations such as the Great School Partnership (n.d.) have curated a number of resources for schools eager to produce grades that more accurately reflect what students know and are able to do.

Yet another way rural principals may cope with a feeling of isolation or lack of resources is to find a mentor (Ashton & Duncan, 2012) who has successfully led a significant instructional leadership change. Other school leaders may take it a step further by choosing to engage more directly with other school district leaders in their geographic proximity. In areas where more than one school is working toward more effective grading practices, establishing regional partnerships is another potential solution for rural principals to create long-term implementation plans and sustainability in their instructional leadership efforts (Harmon, Gordainier, Henry, & George, 2007).

SBG seems to be a part of the 5-year vision in the rural schools in this state. During the past decade, many prominent SBG experts—including Ken O'Connor, Thomas Guskey, Rick Wormeli, and Tom Schimmer—has visited the state at least twice. This is in addition to nearly a dozen SBG-specific conferences facilitated by institutions of higher education, educational service agencies, and state professional organizations. As a result, school leaders are intimately aware of the need to change grading practices, as evidenced by their self-reported level of vision and knowledge of SBG. In the next 5 years, rural school leaders should be prepared to lead this implementation by closing the knowing-doing gap.

Further research is needed to explore rural high school teachers' willingness to adopt SBG, as well as the effectiveness of professional learning specifically designed for this context. In the same way, scholars should consider assessing the effectiveness of regional partnerships and other supports generated in rural settings aiding high schools in their grading reform efforts. Parents in rural settings may have different concerns compared to their more cosmopolitan-minded suburban and urban counterparts; therefore, surveys and focus groups may be helpful to better understand their level of support or concern for SBG in their children's high schools.

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Envisioning the Rural Practicum: A Means to Positively Affect Recruitment and Retention in Rural Schools

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Recruitment and retention of teachers in rural areas continue to dominate educational narratives across the country. School districts, state agencies, and university schools of education have instituted strategies including financial incentives, alternative standards and licensure criteria, and grow-your-own programs that target underemployed locals and paraprofessionals for accelerated licensure. While each strategy may enjoy situational success, none is a panacea for all circumstances. However, there is growing interest in the development of university and school district partnerships in creating innovative solutions to rural recruitment and retention issues. This study investigates the efficacy of a partnership between several small rural districts and a state university partnering to create and test a contextualized clinical practice model. The Montana State University rural practicum placed 13 preservice teachers in a week-long, immersive clinical practice in rural, remote schools in Montana, for them to authentically experience the rural context and for researchers to determine if such an experience might positively affect recruitment and retention efforts. The study used a community-based participatory research method to ensure equal participation of both university and rural school partners in co-creating the experience and in collecting and analyzing data. Results suggest that the rural practicum experience positively affected preservice teacher perceptions of rural teaching and rural communities. Rural school leaders and university personnel also agreed that the model held promise for recruiting and retaining teachers in rural areas.

***Keywords*: recruitment and retention of teachers, clinical practice, rural practicum, rural education**

Recruitment and retention of teachers across the United States have the potential to hit a crisis point (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). The factors creating educator shortages are many, including decreased numbers of students in educator preparation programs and high levels of attrition not caused by expected retirements. The issue is even worse in high-poverty, high-needs schools, many in rural areas (Showalter, Klein, Johnson, & Hartman, 2017). In the state of Montana, with a population density of 6.8 people per square mile, 96% of districts are considered rural, and most experience recruitment issues (Montana University System [MUS] Rural Educator Task Force [RERRTF], 2017). In 2017, 83% of all teaching positions were located in small rural schools, yet 90% of preservice teachers had no clinical teaching experiences in rural school

settings during their preparation programs (MUS RERRTF, 2017). If we want to recruit teachers for high-needs schools, especially in rural remote locations, it seems reasonable that exposing them to those rural teaching experiences would be a good first step.

To help mitigate teacher recruitment and retention in Montana, a university education team, together with rural school partners, created an immersive practicum experience to help university students gain a better understanding of the unique opportunities and challenges inherent in teaching in small, rural communities. This partnership challenged structures within a traditional undergraduate education program to promote collegial and action-oriented processes whereby education leadership faculty, teacher education faculty, and field placement officials worked together to develop and supervise an immersive field experience in remote, rural schools. University students gained opportunities to practice pedagogy, build relationships with local educators and students, and develop a student-led professional learning community. University faculty used the experience to strengthen relationships with rural school leaders, teachers, and community members in an effort to better understand and address the teacher recruitment issues experienced in rural areas, and to examine the potential that relational leadership structures could have in furthering rural school/community and university partnerships.

Theoretical Framework

The theoretical framework for this research is based on situated communities of practice and relational leadership. Lave and Wenger (1991), seminal theorists of situated learning, postulate that the participation in a community of practice has profound impacts on the outcomes of learning. Situated learning within teacher preparation is grounded in social participation in the school community (Korthagen, 2010). The intersectionality of thinking, doing, and reflecting provides for development of authentic reimagining of the understandings of teaching and learning. Based in the work of John Dewey (1938) and Lev Vygotsky's (1978) theories of social constructivism, situated communities of practice provide opportunity for the "reconstruction of experience which adds to the meaning of the experience, and which increases ability to direct the course of subsequent experience" (Dewey, 1966, p. 76).

Immersion into the classroom, school, and community contexts is a foundational experience for future teachers within their teacher preparation program. The experiential contextualized connections they make between learning theories and pedagogical practices taught at the university provide the basis for their future work as educational professionals (Darling-Hammond, 2006).

Developing situated communities of practice is not simply about the preservice teachers but instead encompasses the other agents involved, including mentor teachers, administrators, and field supervisors from the university—all are critical members, both for teaching and for learning (Will-Dubyak, 2016). Immersion experience by all members has the potential to change understandings of the development of teaching practices, teacher growth, and collaboration. Korthagen (2010) specifically argues that

> this points towards the need for many opportunities of peer supported learning in teacher education, which also prepares teachers for the kind of professional development that is much more grounded in collaboration and exchange with colleagues than is common in many schools. It implies an emphasis on the co-creation of educational and pedagogical meanings within professional communities of teachers-as-learners, as also proposed by Simons et al. (2003). When teacher educators start to see cohort groups in teacher education as such communities, and treat them as such, this in itself may have an important positive influence on their practices in schools. (p. 101)

Since no formal structure existed to envision and develop our rural practicum as a situated community of practice, a series of relational processes were employed to accomplish the outcomes of this research. The evolution of leadership that made our collaborative work possible is best explained by Uhl-Bien's (2006) relational leadership theory. In relational leadership,

there is no single position of leadership or power; rather, leadership emerges and is exercised through the "network of relationships between and among individuals" (Balkindi & Kilduff, 2005, p. 942) for a common purpose. Relational leadership emphasizes a collaborative orientation and an inclusive culture that welcomes diverse perspectives and viewpoints. Group members are empowered to apply their individual skill sets and expertise to the completion of the goal and the efficacy of the group itself (Komives, Lucas, & McMahon, 1998).

In this research, relational leadership provided a foundational structure to encourage situated communities of practice (made up of mentor teachers, school administrators, field supervisors, and university faculty), providing preservice teachers opportunities to experience the intersectionality of thinking, doing, and, reflecting (theory to practice). Our end goal was to better understand how to utilize the rural context in the development of teaching practices, teacher growth, and collaboration (Figure 1).

Given the importance of situated communities of practice and relational leadership to this study, we argue that an effective way to explore fruitful solutions to the problem of recruitment/retention is based on the emergence and development of partnerships between and among university personnel and rural educators. Adopting a community structure to co-create authentic clinical practice opportunities in rural, remote schools and communities reimagines the rural context as a fertile professional learning environment rather than a clinical placement conundrum.

Review of Related Literature

Recruitment and Retention in Remote Rural Locales

Research indicates an ongoing and persistent problem in recruiting and retaining educators for

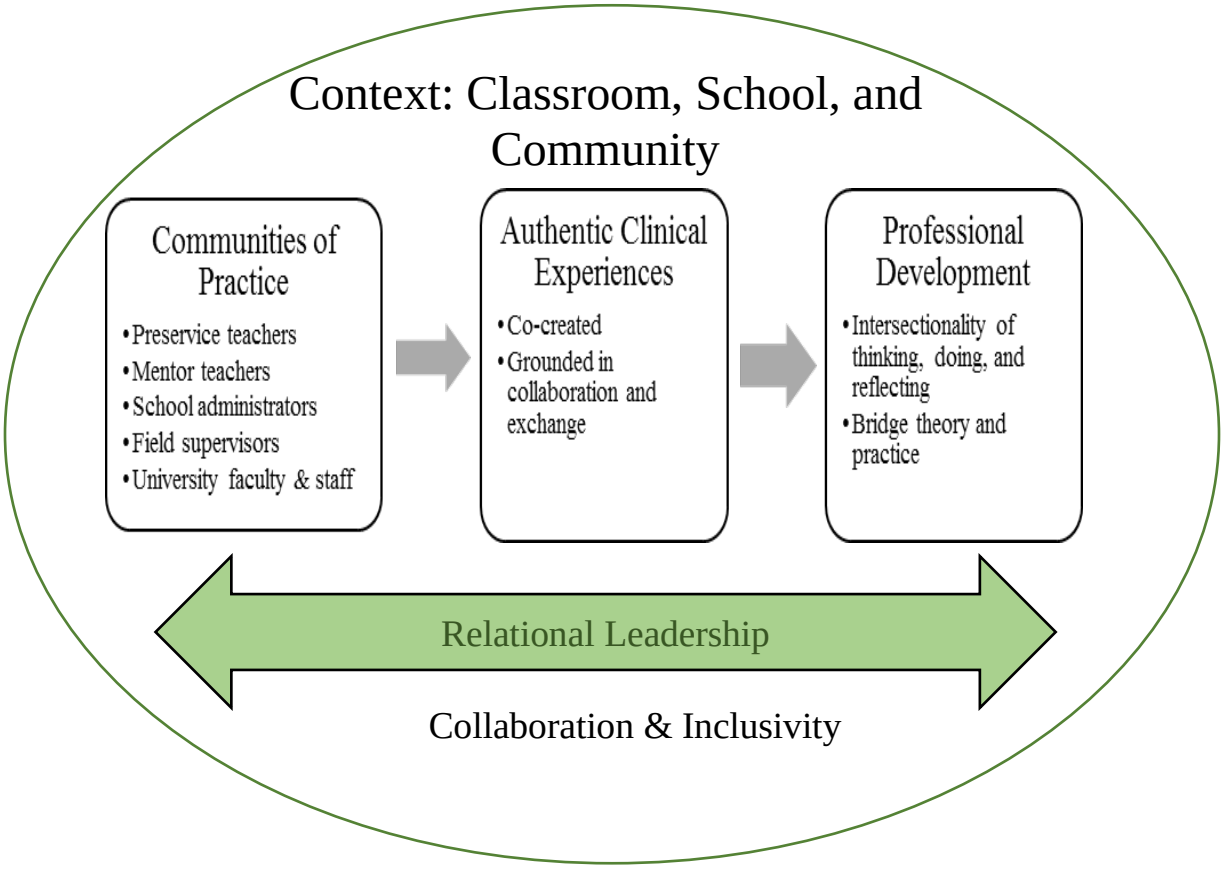

Figure 1. Theoretical framework: relational leadership/communities of practice

America's small, rural schools (Jimerson, 2004; Latterman & Steffes, 2017). There are numerous reasons for this educator shortage, among them inadequate funding for competitive salaries; geographical and social isolation issues, especially in remote rural areas; and fewer students enrolled in educator preparation programs (American Association for Employment in Education, 2010; Jimerson, 2004; U.S. Department of Education, 2007). Some states have sought to address the teacher shortage by instituting grow-your-own programs for both teachers and school leaders, wherein rural districts target underemployed locals with bachelor's degrees in related areas, paraprofessionals working in their schools, and even high school students themselves for contextualized training to gain a teaching license (Brown, 2018).

Montana, where this study was conducted, has more than 200 frontier schools, categorized as having 200 or fewer students within an attendant community and located in a county with five or fewer people per square mile (Morton & Harmon, 2011). It is not uncommon for these schools to get few if any applicants for teaching positions, prompting administrators to apply for emergency licensure waivers for teachers lacking qualifications for licensure (Hoffman, 2019). Other rural districts have recruited teachers from the Philippines to provide staffing for both elementary and secondary classrooms (Hoffman, 2019). As important as both emergency licensure and foreign recruitment may be to Montana's current educator shortage, neither alternative promises long-term solutions. The Education Commission of the States (2016) found teacher recruitment and retention especially problematic in predominantly rural states, even though many had begun to address the issue in three primary ways: through financial incentives from state legislatures, individual school and district recruitment policies, and university-district partnerships. One of the larger efforts to build university/district partnerships comes from the U.S. Department of Education's Teacher Quality Partnership grant program, which incentivizes partnerships between teacher preparation programs and high needs rural districts (Aragon & Wixom, 2016). Some recent program grantees promote recruitment through targeted interventions that promote preservice clinical field experiences and student teaching in rural contexts.

Importance of Clinical Practice and Partnerships

Paralleling the need for practices that increase recruitment and retention, researchers also suggest educator preparation programs provide intensive and effective clinical field experiences that enable teachers to gain guided practice and experiences in the authentic contexts of teaching (Darling-Hammond, 2006). Roberts (2005) noted that teacher education programs need to provide opportunities for preservice teachers to experience teaching within rural contexts to build awareness to the possibilities, in the same way a program might do so for urban schools. The Council for the Accreditation of Educator Preparation (2015) also designated one of its five standards to the importance of clinical practice. It states: "Because the actual process of learning to teach requires sustained and ongoing opportunities to engage in authentic performance in diverse learning environments, clinical practice is a valuable, necessary, and fundamentally non-negotiable component of high-quality teacher preparation" (p. 14).

Clinical Practice in Rural Schools

A report of the Clinical Practice Commission of the American Association of Colleges for Teacher Education (AACTE, 2018) asserted that effective clinical practice designs address both the learning needs of students PK-12 and the unique needs of the instructional context. White and Kline (2012) also advocate for preservice teachers to gain understanding and experience in the unique attributes of rural schools and the communities they serve, although few university teacher preparation programs accomplish these goals. Despite the lack of rurally focused teacher education programming, Kline, White, and Lock (2013) acknowledge that rural practicum experiences are wholly beneficial to engaging preservice teachers in authentic clinical practice that is both instructional and contextual and that rural practica provide a lens through which to understand living and working in rural communities.

Finally, Hudson and Hudson (2008) found that during an immersive experience in a rural context, preservice teachers experienced "very significant attitudinal changes" in their "willingness to teach in rural areas, which also dispelled misconceptions about rural living and teaching" (p. 74).

Purpose and Context for the Study

In 2016, the Montana University System (MUS) Rural Educator Recruitment and Retention Task Force (RERRTF) was formed to address the needs of rural schools in securing highly qualified teachers for rural areas. Data from the group suggested that units within the MUS were producing enough teacher education candidates to fill most of the teaching vacancies in the state—with some universal exceptions, such as special education—but students were not considering employment in rural schools, especially those in remote regions located more than an hour away from larger communities and towns (MUS RERRTF, 2017). Additionally, the three largest teacher education programs all are housed in university towns with populations of over 40,000 people: Bozeman, Missoula, and Billings. Each of the K-12 school districts in those university communities has been the primary partner for clinical practice opportunities for sophomore-level early field experience, junior practicum, and senior student teaching. In fact, even though Montana has the highest percentage of rural, remote school districts in the nation, over 75% of all clinical practice opportunities in MUS teacher preparation programs occurred less than 30 minutes away from campus (MUS RERRTF, 2017 Showalter et al., 2017). The lack of authentic, rural clinical practice and the absence of knowledge about living and working in rural communities made it difficult for many new teacher graduates to even try to imagine seeking a teaching position in rural areas (MUS RERRTF, 2017).

Providing students with authentic clinical practice and lived experiences in rural settings, while enjoying an opportunity to grow professionally with a peer cohort, was the primary purpose for establishing the Montana State University rural practicum pilot program and conducting this research. Through the application of relational leadership theory, we also sought to develop and deepen existing relationships among university faculty, staff, and rural school educators. Moreover, as we leveraged professional and contextual expertise to design a collaborative, sustainable process to create rural clinical practice opportunities, we sought to assess the model's viability in positively influencing rural recruitment and retention.

Methods

We used a community-based participatory research (CBPR) design to fully integrate the perspectives and experiences of all research investigators and participants as equal partners in the research process (Wallerstein & Duran, 2003). Paralleling the CBPR design was our interest in the theory of relational leadership (Uhl-Bien, 2006) and the potential both the CBPR research design and the process orientation of relational leadership theory had for increasing participant engagement and leveraging participants' contextual expertise for co-constructing an authentic rural, clinical field experience. One strength of a relational leadership orientation is the reduction of perceived power differentials between researcher and participant, thereby encouraging the development of coequal relationships between and within groups of people. These flatter leadership structures increase the likelihood that partnerships can survive as an influential partner moves on. Additionally, CBPR's intentional engagement of the community elicits multiple perspectives and divergent analytical lenses through which data can be understood more deeply. For clinical field experiences to be sustainable and mutually beneficial for all, it is essential that the variables reflect the needs of partners. Gutiérrez (2008) and Zeichner (2010) termed this *third space*, where the PK-12 school leaders and teacher preparation faculty intersect, bringing practitioner and academic knowledge to the place of creation of experiences within the partnership.

Perceptions from university faculty, rural leaders, and practicum students were gathered before, during, and after the clinical practicum experience to examine the rural practicum's potential to authentically prepare students for

working in rural schools and as an effective recruitment and retention strategy.

Research Questions

We sought answers to three research questions in this study:

1. What are the perceptions of preservice teachers engaged in an immersive practicum in small rural schools before, during, and after the experience?
2. What are the perceptions of university faculty and rural educators about the potential of the rural practicum model to help preservice teachers better understand the rural context?
3. What are the perceptions of university faculty and rural educators about the potential of the rural practicum model as a viable strategy to help address recruitment and retention in rural schools?

Rural Site and Partner Selection

Over 90% of clinical placements in Montana occurred within 30 minutes' driving distance of university teacher education programs and were not likely representative of the rural nature of the state (MUS RERRTF, 2017). Therefore, we intentionally chose to develop clinical practice settings that were more authentic to remote rural locales in Montana. We chose northeastern Montana's Bakken oil shale area because it was far from our campus (435 miles) and presented a very stark contrast to the more urban/suburban kind of lifestyle many of the participating practicum students had previously experienced. We also had long established personal and professional relationships with several of the area's school leaders who had earned their administrative licensure at our university. Those former graduates were the first points of contact between the university and other area schools and communities. Their knowledge of rurality and rural education and their relationships with other school leaders in the region were hinge points for many of the logistical details (school placements, housing, and travel) necessary to the success of the experience. With the advice and facilitation of these rural school leaders, we were able to envision and create immersive week-long placements for 13 practicum students in six, rural school districts in the region. Five of the six school districts had less than 170 students K-12; the remaining district had a population of 1,300 students K-12.

Pilot Study Description

Activities Before Practicum Experience. In the early spring of 2017, Montana State University advising center staff and education faculty made presentations to three instructional methods classes about the rural practicum opportunity. Thirteen junior secondary practicum students volunteered for the experience. Prior to the week-long immersive experience, students gathered with university faculty to discuss travel logistics of the experience and the academic expectations. Faculty adapted the existing practicum course format to align with the condensed, rural focus while ensuring all requirements for instructional hours and licensure were still fulfilled. Participants attended special topic and practicum instructional sessions in the weeks leading up to their rural experience to prepare for lesson planning, observing teaching and reflection activities. Student participants also reached out to their rural cooperating teachers (CTs) to introduce themselves and gain insights about the schools and communities where they would be working.

Activities During Practicum Experience. During the week-long experience, pairs of students commuted to their respective schools daily and spent approximately nine hours/day immersed in teaching lessons, observing other classrooms, and experiencing the culture of a small rural school. University practicum supervisors also traveled to the schools daily to observe practicum students teaching and to interact with rural teachers and administrators. Students and supervisors returned to our home-base hotel each evening for a group dinner and nightly debriefing sessions. The debriefing sessions also served as data collection structures for focus groups and reflection questionnaire completion. Following debriefing sessions, students worked together to plan and organize lessons and materials for the following day of teaching.

To make this experience affordable for students, we secured an internal grant from our

college that paid for transportation, evening meals, and hotel stays for students and supervisor. We also paid students a small stipend to participate in the rural practicum. During the initial phase of this project we learned that eight of the students worked 20–30 hours/week, paying their way through college. Missing a week of work to participate in the rural practicum experience had financial implications for students that we wanted to mitigate with the stipend for participation.

Activities Following Practicum Experience. Following their rural placements, participants attended several additional instructional sessions to complete the program's curricular requirements and signature assignments common to all participating in any practicum experience. We also wanted to provide time for participants to process their experiences and document feedback for us to use for future program implementation. Students were encouraged to share their understanding and views about rural schools and communities, reflecting on their beliefs prior to the experience and at its conclusion.

Participants

Participant Group I. Seven of the participants were female and six were male, ranging in age from 21–29 years. Only 3 of the 13 participants had backgrounds from rural areas in neighboring states or larger communities in Montana; the remaining 10 participants hailed from urban and suburban areas, such as Denver, Seattle, San Francisco, and Toledo, Ohio.

Participant Group II. Group II had 12 participants. Six were rural school leaders, five of whom were graduates of our university's educational leadership program. They ranged in age from 29–62 years, with school leader experience ranging from 1–25 years. The six additional Group II participants were four university faculty members who observed the practicum students in their rural school placement and met with administrators and CTs from every school site, and the university's two directors of education advising and field placement.

Data Collection and Analysis

Research Question 1. Research question 1, which asked Group I participants (practicum students) about their perceptions of teaching in a rural school context, was answered through document review of student reflections and three focus groups attended by all 13 student participants. Document review consisted of a four-question, open-ended questionnaire that was given during the immersive practicum experience. The questionnaire asked about their general impressions of rural schools before, during, and after the experience, the advantages and disadvantages to teaching and living in rural communities, and how the experience had affected their views as future teachers. The focus groups convened over three separate evenings: one on campus before the experience, one during the week of the experience, and the last on campus after the experience.

Data analysis first consisted of open coding students' responses to the open-ended questionnaires. Those initial responses were used as the basis for focus group questions that allowed us deeper investigation during the focus group sessions. After the focus group data were analyzed through open coding, we then employed axial coding to identify the relationships between all open-coded material. The axial codes revealed the emerging core themes from practicum participant responses.

Research questions 2 and 3. Research question 2 asked Group II participants (rural school leaders and university faculty and staff) about the potential of the rural practicum experience to more fully prepare students for working in rural schools. Research question 3 asked about the feasibility of the rural practicum model as a strategy to address rural teacher recruitment and retention. Both questions were answered through semi structured individual interviews of all school leaders at the conclusion of the rural practicum experience. All interviews were electronically recorded and lasted approximately 45 minutes each. Transcriptions were sent to each school leader as a member check. Upon verification of interview transcripts, data were then open-coded into concepts and categories, which created themes.

We also conducted a focus group with the six participating university faculty and staff on campus 2 weeks after the rural practicum concluded. The focus group was recorded electronically, and transcriptions were provided to the participants the following day to check for accuracy. The purpose of that focus group was to debrief the successes and challenges of the rural practicum experience and to identify the elements of relational leadership that were evident during the planning and execution of the program. Focus group questions asked about (a) program success; (b) planning and processes related to the logistics of partner selection, funding, student recruitment, travel, and housing necessities, and (c) adherence to curricular requirements and course outcomes. In addition, we asked about emergence of group leadership for faculty and rural leaders, how each person's knowledge and expertise contributed to the planning and execution of the experience, how the relationships between and among university faculty had developed/changed, and individual group members' intentionality and commitment to the group. Those data will be forthcoming in a separate publication.

Utilizing CBPR methodology, school leaders and university faculty participated equally in data analysis. We first analyzed research question 1 data individually to look for emerging themes, later sharing our notes and memos with one another. Those researcher notes and memos were then reanalyzed collaboratively via virtual conferencing to discuss interpretations, suggest themes, and test individual theories. This continual triangulation within the research team and team members' unique perspectives and expertise produced a more in depth and more nuanced understanding of the study's findings and their implications for recruitment/retention. This strategy is known as crystallization (Tracy, 2010). Similarly, our collective attention to analyzing data also demonstrated commitment to the CBPR process and partnerships with rural leaders. This process orientation is also a tenet of relational leadership theory, which advances the importance of a relational group adhering to its purpose and reason for being but also continuing the development of individual relationships necessary to the efficacy of the group itself (Komives, Lucas, & McMahon, 1998).

Findings

Research Question 1: Practicum Students' Perceptions

The immersive rural clinical model positively changed preservice teachers' perceptions of teaching in rural schools. Document review of questionnaires and student reflections indicate that nearly all of the 13 practicum students had some predetermined view that teaching in rural schools was akin to a consolation prize for not being selected for positions in more suburban settings. Students reported that they did not believe there were many advantages to working in a rural school and that the education of rural students was not likely equitable to those in urban/suburban areas. However, initial beliefs and perceptions were challenged shortly after the students' week-long experience began and continued to reflect a growing appreciation for the rural context during the experience and upon its conclusion. Three primary themes emerged, discussed below within the framework of before/during/after, reflecting the change in students' perceptions about teaching in rural schools.

Before the Practicum Experience: Lack of Resources. During the first focus group, practicum students reported that they did not believe there were many advantages to working in a rural school and that the education of rural students was not equitable to those in urban/suburban areas. A widely held perception was that rural schools lacked resources that larger schools enjoyed. In their questionnaire responses, 9 of the 13 students cited a belief that financial resources were not adequate to purchase current materials, including computers and technology-based resources to allow teachers to provide engaging instruction. Three other students (all English education majors) wondered whether students were exposed to curricular materials that promoted the classics of literature and if students had access to novels, magazines, and primary source documents—or if workbooks and basal readers constituted most curricular resources. Samantha (pseudonyms are used for all participants) remarked that she wondered whether

her rural school placement would have adequate or comparable instructional technology to use for lessons.

> I know that not all rural schools have access to the internet. I'm not planning on using computers for any of my lessons . . . unless it is for revising their writing or finishing a paper . . . but if internet isn't available, that will limit their creativity and some of the activities we can incorporate.

Samantha's quote also speaks indirectly to a second commonly held perception that, if financial resources were likely limited, so were the instructional strategies of teachers and, perhaps, likewise the professional expertise of teachers. Questionnaire responses indicated that most students did not anticipate they would emerge from their practicum experience with many new instructional strategies or curricular models. Furthermore, fewer than half of the students articulated that the experience was an opportunity to gain pedagogical knowledge. Seth, an English major, offered this presumption: "I saw some outstanding teaching in my high school, so I'm not really looking to gain teaching knowledge, as much as I'm curious about rural places."

Lastly, practicum students were curious about the people in rural spaces, believing them to be somewhat different from themselves. Questionnaire responses often articulated interest in such things as "how rural people live" and "what they do for entertainment." One student, JJ, commented that he was concerned "they won't like me, I'm not like them." William's statement, "I really want to know what the kids are like," might possibly suggest that recent political divides between urban and rural may also be reinforcing perceived differences among groups of people. Initial data from student questionnaires and the first focus group indicate that most of the 13 students had in some way approached the rural practicum experience with a deficit mindset about rural education in general, believing that a perceived lack of resources, both material and human, negatively influenced student learning opportunities. Data also suggest that students wanted to know about people from rural areas in general.

During the Practicum Experience: Supportive Environment. The second focus group occurred on the fourth day of the practicum experience and began with the open-ended question, "Has anything changed in your perceptions about rural schools?" The question was formed after researchers reviewed students' ongoing reflections and found several statements that indicated students encountered situations that reshaped their beliefs. For instance, the perception of limited resources was quickly abandoned by most of the students as they were exposed to modern classrooms with instructional technology including SMART Boards, document cameras, SMART Podiums, and individual real-time response systems (iClicker). Two of the six school districts also had 1:1 technology initiatives with Chromebooks, iPads, or other personal computing devices for every student K-12. Practicum students also were able to see that English curricula boasted novels, primary-source documents, and ample reading materials that promoted literacy and a commitment to learning many different genres of literature. Stephanie, an English education major from a large suburban area, exclaimed that the "school has the same novels I read in high school—that surprised me."

In terms of human resources, almost all students were immediately impressed with the instructional repertoire of their CTs, especially in terms of using a variety of strategies as they taught at least five different grade levels. In all practicum site schools but one, a single English teacher was responsible for teaching all students grades 5–12. Samantha remarked,

> Today, I got to co-teach reader's theater, a group writing project, seniors writing their senior thesis, and fifth graders narrating a video for their social studies wax museum. My CT wanted me to experience the variety in teaching multiple classes. . . . She treated me like an equal. . . . I really felt like a teacher today.

Similarly, while none of the initial questionnaire responses addressed curricular integration and articulation, it was evident that the practicum students were now able to see the advantage that

teaching all grades could provide for curricular development and articulation. Mark stated:

> I hadn't really thought about the broad English curriculum from middle to high school much, but I can really see how advantageous it is to know . . . really know . . . what each grade has done and what they are capable of. If one group needs more time in a certain area—like writing—you can adjust the entire year to meet those needs.

Nathan also added that he was beginning to see the potential for an individual teacher's creativity to blossom in a rural school because of the trust and support of administration:

> My CT said his superintendent trusts him with respect to decisions about curriculum and instruction. But he does expect the CT to bring expertise to the classroom and create readers and writers. There's enormous flexibility about how to teach and even what to teach here. . . . When you are the entire English Department . . . you own the decisions about the genres and novels you teach, when you teach them, and about how you will reinforce important topics.

Following the Practicum Experience: Sense of Community and Appreciation for Rural Students. Our last focus group was conducted after students' return to campus. As researchers reviewed field notes from the evening debriefing sessions (which were held nightly but not recorded as focus group data), we decided to steer the final focus group with two open-ended questions, "What have you learned about rural schools?" and "What will you take away most from this experience?" Two major themes were revealed in this focus group. The first theme to emerge was sense of community, mentioned directly or indirectly by all students. Practicum students were quick to point out how well everyone (i.e., teachers, school leaders, support staff) knew the students in the school and how that contributed to students not being able to fall through the cracks. "They can't hide here," said Mark. Alexis agreed, "In large schools, students can easily go the whole day without being called upon, speaking with peers, or talking directly with a teacher. That just doesn't happen in a small school." A second element to the sense of community theme was the immediate support from rural school administrators and teachers that practicum students felt upon their arrival. Nathan and Colton told the story of how the superintendent of their school took them with her on a walk to the post office, telling about the history of the community, the school's culture, and even buying them coffee and introducing them as new teachers to some community members gathered at the restaurant. In fact, each of the 13 students met their school's administrator on the first day and were taken on tours of the school and or school/community. Karen said, "I felt looked after, valued, and treated as a professional, not just another student fulfilling pre-service hours."

However, the sense of community also created ambivalence for practicum students, especially in light of how many rural students had seemingly no plans to attend any postsecondary education or out-of-area opportunity beyond high school. Five focus group participants expressed sadness that some rural students were caught in the nexus between staying to find work and leaving to pursue another life chapter. Alexis described how the sense of responsibility to the community may have a detrimental effect on students' life decisions:

> I was blown away by the writing skills of the seniors—many had better skills than some of my college friends and classmates. But only three are going to college; I think the rest of the seniors feel bound to the community. They don't want to desert their families or friends. It's like once they are gone, they're gone forever, and if too many leave, the community withers away. Still, some of those students have so much potential.

The second main theme to emerge was appreciation for rural students. Every practicum student mentioned both in written reflections and in focus groups that they had gained an immense appreciation for rural students. Before the rural practicum experience, several students had doubts about the academic capabilities of rural students. However, they soon came to realize that many had received a very high-quality education and were extremely accomplished students, able to pursue rigorous study at the collegiate level. A few students

offered that rural students seemed to "make the most out of a little," and even though they may not have been exposed to many advanced placement classes, they demonstrated college readiness by their serious pursuit of excellence. Some contrasted students from their own high school experience with students they met in the rural practicum. Mark was pleasantly surprised by the thoughtful engagement the junior English class he taught exhibited. He stated, "Everyone was being polite and respectful, and they were sharing thoughtful ideas, and were thinking deeply about the questions I was asking."

Positive student interaction was also an element of the appreciation for rural students theme. Seven of the focus group participants spoke to the way that rural students interacted with one another more easily than their counterparts in larger schools. Some of the interaction was thought to be a result of family and community familiarity; still, practicum students could not identify any instances of overt or covert bullying or harassment. Samantha agreed, "Kids were truly nice to each other. That made my life teaching a lot easier." Nathan added jokingly,

> Well there were some very heated discussions on the classic and eternal debate of which was better—Case IH Tractors, or John Deere . . . so they did bicker some and tease quite a bit, but really . . . more unites these kids than divides them.

Finally, JJ, who admittedly was nervous to participate in any practicum experience, revealed that the experience had increased his confidence in being a teacher, because he realized that he could establish relationships with students and that he would not be judged by them for being quirky. JJ's words punctuated the sentiment for all the participants. He stated,

> I wish that I could stay longer in that place. . . I will miss those kids, and it pulls at my heartstrings knowing that even with just a few days of knowing me, that they will miss me, too.

In summary, students' perceptions about teaching in rural schools changed to a more positive orientation after experiencing the rural practicum opportunity. Participants noted that rural schools offered them a unique opportunity to learn the art of teaching in a supportive environment with greater curricular and instructional flexibility and outlets for creativity. This gave the practicum participants additional confidence that they would have the support to apply creative instructional strategies to engage students in high levels of learning. Participants also identified the sense of community that rural schools promoted for positively affecting student success.

Research Question 2: Rural Leader/University Faculty Perceptions

Theme I: Breaking Down Stereotypes. The research questions asked of school leaders and university faculty were about the potential of the rural practicum experience to help students better understand teaching in a rural school context and whether the rural practicum model was an effective strategy to address rural teacher recruitment and retention. In the spirit of CBPR, rural leaders were given practicum students' questionnaire responses and reflections data to analyze collaboratively with the university researchers for research question 1. This strategy allowed school leaders and faculty participants to situate their responses within the themes that emerged from the student data noted above. Additionally, participants included general observations each made during the rural practicum experience. From that data analysis emerged the theme of breaking down stereotypes. During their individual interviews, rural school administrators agreed that the rural practicum experience helped break down stereotypes and the predetermined perceptions that most of the rural practicum students initially voiced about educational equity in rural schools. Administrators felt that perceptions of inadequate technology resources were addressed as practicum students were given opportunities to interact with and witness the effective use of instructional technology by teachers in their schools. While there was general agreement that issues with network bandwidth and internet provider consistency were sometimes more problematic in rural remote locations, teachers worked to impress upon students how technology could be leveraged through use of video and audio assignments that engaged students creatively without relying exclusively on internet access. Administrators also

praised their school's CTs for finding ways to immediately engage the practicum students in teaching or co-teaching classes. Co-teaching allowed CTs to coach the practicum students in real time. As practicum students engaged rural kids in lessons or small-group work, the CTs simultaneously modeled content expertise and instructional skill. Encouraging the practicum students to join in a co-teaching model also caused the students to evaluate the teaching process and immediately seek out technical help from CTs. Reflection and consultation between practicum students and CTs occurred continually. Interview participants felt that this intentional action altered practicum students' initial perceptions about instructional efficacy and rural teacher expertise.

Theme II: Invited into Community. The second theme emerging from the interviews was invited into community. As rural practicum students arrived at their respective school placements, all were greeted by the superintendent/principal and taken on a tour of the school and in some cases the community. This intentional action had been collaboratively determined before the experience. School leaders voiced that they wanted not only to personally welcome the students but also to socialize them into the community as esteemed educational professionals rather than college students collecting observational hours. Each school leader arranged time to meet with his or her respective practicum students each day, exposing them to a variety of activities—including attending faculty meetings, helping with the graduation dress rehearsal, accompanying the superintendent on "walk-through" observations of teaching, and meeting with school board members during the lunch hour. In addition to these activities, school leaders tailored some co-curricular activities to individual practicum student interests. Two of the practicum students had extensive experience in golf and track and were invited to attend high school practices to help coach student athletes. Another student with an interest and skill in dance was invited to give dance lessons after school to help him better connect with students. These opportunities offered practicum students a chance to engage with the school community in other professional capacities outside the teaching act and enabled them to better understand the benefit of advising or coaching co-curricular opportunities from a financial and rapport building perspective. All interview participants felt that these activities caused practicum students to gain a more nuanced understanding of the school community and how instrumental teacher leader activities were to the success of the school and the achievement of students.

University faculty members also discussed the invited into community theme, albeit differently. Following the nightly debriefing sessions that were held at the home-base hotel, university faculty observed groups of students gathering in the lobby areas with their lessons and materials for the next day. Spontaneously, the practicum students began to offer suggestions and advice to each other about teaching strategies, lesson preparation, and content clarification. These discussions often involved six to eight practicum students, sometimes lasting two hours or more. As faculty observed this process, they realized that they were witnessing the organic development of the practicum students' professional learning community (PLC). Johan exclaimed:

> One of the most surprising yet satisfying things for me was getting to witness our students developing their own PLC—without any suggestion or encouragement from us! I'm not even sure most of them know what a PLC is . . . or how it should function . . . but every night . . . right there in front of our eyes, we got to see a real PLC in action.

While not part of an invitation into the school community as illustrated by other thematic data, the PLC development had the effect of inviting students into a community where they functioned together for the first time as professional educators.

Theme III: Benefit to School. Lastly, rural leaders also reported that having practicum students in their schools benefited both teachers and students. Three school leaders saw their rural teachers make more of an effort to "bring their 'A' game" during the practicum experience week. Leaders identified more evidence of creative lessons and engaging assignments for K-12 students from their regular rural teachers. Lori, one

of the rural school superintendents, described teachers' mindsets in this quote:

> There was a sense among our teachers that they were called upon to mentor and inspire this younger generation of teachers, and they took that seriously. What I saw last week was collegial cooperation and inquiry practiced by both veteran teachers and the practicum students. The co-teaching model created professional learning for everyone.

School leaders also discussed how important it was for the rural high school and middle school students to have interactions with college students and learn about postsecondary opportunities. Each rural leader identified an instance where they overheard their rural students asking the practicum students to talk about what college is like. One of the leaders stated that in her school fewer than one-third of all graduates attend college, and of those attending, she could only identify one former student who finished within the last 5 years. Additionally, school leaders and faculty members alike believed that the partnership between rural schools and the university to bring the rural practicum experience to rural communities could help rural community members view universities as partners in the ongoing effort to prepare and place highly qualified teachers in the rural community. Chris, a university faculty member, remarked:

> The future of rural schools depends on their ability to attract and keep teachers. If they can't, schools are in jeopardy of losing students, and closing. Today, I'm hopeful that working together . . . we've taken the first step to change the narrative and put forth a meaningful model of clinical practice that also places more teacher candidates in rural schools.

Discussion

The results from this study show that the rural practicum model was able to provide preservice students with an immersive clinical experience that helped them better understand teaching in a rural context. Faculty and administrator participants also felt it offered a promising model to address recruitment and retention in rural remote states through partnerships between university educator preparation programs and rural school districts. The rural practicum experience benefited all groups involved with its design and implementation. Practicum students were able to gain an awareness of rural schools and communities that changed their initial beliefs about the educational quality in rural schools. Rural schools created conditions to advance recruitment and retention strategies by working with university personnel to co-construct an authentic clinical model that highlighted advantages to teaching in rural districts, such as supportive and collaborative environments and an overall sense of community. Finally, university faculty were able to leverage relationships across the academy and with rural school leaders to create mutually beneficial partnerships through a process that emphasized shared leadership and decision making.

Equally important to this study is how tenets of relational leadership brought together disparate groups of people seeking to positively influence preservice teachers' views of rural teaching and working in rural communities. Each relational group played an important role in the overall success of the rural practicum experience. Because no one person possessed relationships that crossed every group (i.e., university program faculty, rural school educators, and teacher education students), a hierarchical leadership structure would not have produced the same level of success as the flatter, but highly effective, relational leadership structure. In discussions about how leadership emerged to enable the success of the project, we agreed that the relational dynamic among people within a specific group, and the interactions between the larger groups themselves, created the conditions for multiple group members to exercise some aspect of leadership in directing and accomplishing group and project goals. The success of the model was the result of working side by side as individuals but also leveraging the relationships within our own spheres of influence.

Future Research

The primary reason for conducting this research was to determine the potential of a contextualized, rural clinical experience to better prepare preservice teachers to understand the unique attributes of teaching and working in rural schools. We also

sought to determine whether rural leaders and university personnel perceived that the experience could positively affect recruitment and retention in rural areas. In determining success, we looked only at the perceptions of preservice teachers (practicum students), rural school leaders, and university personnel before, during, and shortly after the rural practicum experience.

We initially asked a fourth research question about the development of relational leadership with university faculty, staff, and school leaders. We determined however that we would reserve that information for a separate publication. Since our first rural practicum pilot in 2017, we have conducted two additional rural practica. Our relational leadership group has grown to include eight additional communities and nearly 20 school leaders. Our hope is to trace the genesis and success of the relational leadership framework through a more thorough study to follow. Other future research includes data collection from three additional cohorts of rural practicum graduates about whether those students took teaching positions in rural schools and whether the rural practicum positively influenced those decisions. There is also a need to continue to investigate the factors that play a role in new graduates' decisions to teach in rural schools and how teacher preparation programs can leverage coursework and/or experiences to highlight the advantages of working in rural areas.

Conclusion

This research demonstrated that school district–university partnerships could co-construct a rural, clinical practice experience that had positive influences on preservice teachers' views of teaching in remote rural areas. School leaders and university faculty also believed that the immersive rural practicum would have a positive influence on recruiting new teachers into small rural schools. Although no specific research question investigated this outcome, participants felt that the existing structure of the relational leadership framework between university faculty and rural school leaders that made the practicum experience possible could also become a hinge point for inviting wider-ranging conversations between rural communities and higher education. Participants agreed that these wide-ranging conversations create potential for new and diversified postsecondary educational opportunities for rural students while also utilizing the university's research expertise to help rural communities expand business and employment possibilities for citizens. Although sociopolitical divides seem inevitable in today's highly partisan climate (Williams, 2017), school district leaders and university personnel could help bridge those divides by co-creating programs, such as the rural practicum, that bring rural communities and higher education together in long-lasting and mutually beneficial partnerships.

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Video Grand Rounds in Rural Teacher Preparation

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Video grand rounds (VGR) were used at a rural university to prepare special education teacher candidates. Using the VGR structure, teacher candidates were taught to understand, observe, and articulate observations of classroom instruction through the use of authentic classroom videos created locally by K-12 rural special and general educators. The videos include rural special education teachers working with learners with disabilities and implementing instruction aligned with the general and adapted curriculum standards. This article reports the effects of VGR on teacher candidates' development of observation skills in an early experience course in this mixed methods study and shares the design and development of templates for implementing this model.

***Keywords*: clinical experience, co-teaching, practicum, rural education, special education teaching, teacher education, video grand rounds**

Quality teachers are key to positive educational outcomes for children. Unfortunately, many qualified teachers leave school systems, especially in rural areas (Schulte & Justeson, 2019). This teacher attrition, compounded by a growing population of students with disabilities, has created critical special education teacher shortages. Nationally, the shortage in special education teachers is growing (Robinson, Bridges, Rollins, & Schumacker, 2019). In addition, rural school districts have challenges with recruiting and hiring qualified special educators (Berry, Petrin, & Gravelle, 2011). As educator preparation programs in rural regions seek to mitigate the effects of teacher shortages, recruitment difficulties, and general geographic isolation, clinical experiences are closely examined.

It is important that preparation programs for rural special education teachers provide multiple, varied clinical experiences in rural special education classrooms (Reagan et al., 2019). The use of structured video grand rounds (VGR) is one method for teacher candidates to observe and reflect on rural classroom instruction through authentic classroom videos (Cuthrell, Steadman, Stapleton, & Hodge, 2016). This article shares results from a mixed-methods study exploring how an innovative video approach to early field experience observations impacted teacher candidates' observation skills.

It is imperative to include adequate clinical experiences throughout the teacher preparation program and to develop teacher candidates' reflective practice skills to help them use such proficiencies when they are teaching (Coffey, 2014). However, it can be challenging to provide ample experiences that are meaningful, are high quality, and offer opportunities for assessment (Bethune & Kiser, 2017). Literature suggests that reflection is critical to teacher candidates' preparation as

educators (Clarà, Mauri, Colomina, & Onrubia, 2019), supports professional development (Zepeda, 2019), and allows consideration of the cognitive, social, and moral implications of teaching (Pedro, 2006). Reflection should progress from a preoccupation on technical aspects of teaching to consideration of teaching methods and alternative options to diverse dilemmas that occur in teaching (Cavanagh & Prescott, 2010). It is important for preservice teacher candidates to be reflective problem solvers who can challenge the status quo (Larivee, 2000). In this literature review, we present the VGR model and use of video as a tool for enhancing reflection in teacher education in rural areas.

Literature Review

Context for Rural School Districts

In the special education program that is the focus of this study, some challenges with requiring a large number of field experience hours in a rural geographic area have been (a) a limited amount of available special education teachers to serve as clinical teachers in rural areas, (b) the overcrowding of teacher candidates placed in schools located near the university, (c) ensuring teacher candidates experience a variety of K-12 observations, and (d) scheduling times with teachers to view instruction. To supplement and enhance the rural special education practicum experience, a VGR video library was created and implemented. The VGR library, accessed via the internet through a passcode-protected link, contains digital videos of local rural teachers, both general and special educators, instructing students in their K-12 classrooms. With this new model, teacher candidates both participate in face-to-face practicums in rural K-12 classrooms and engage with distance education observations via the VGR video library. This procedure ensures teacher candidates have the opportunity to view high-quality, evidence-based practices in multiple educational environments. Teacher candidates can view the same video clips and see how rural clinical teachers, instructors, and peers respond to the observation protocol. Subsequent class discussions can then be based on the common observation experience.

Teacher education programs have begun using video to enhance the observation experience for several reasons: (a) videos can provide access to multiple settings (Hixon & So, 2009), which is especially problematic for large and/or rural programs where diverse placements may be limited given the size of the program and geography; (b) videos can create shared experiences in which classroom interactions, practices, and specific learning experiences are explored (Borko, Jacobs, Eiteljorg, & Pittman, 2008; Youens, Smethem, & Sullivan, 2014); and (c) research suggests that viewing videos can promote reflective and focused observations as teacher candidates engage in deeper reflection (Goldman, 2007; MacLean & White, 2007; Stockero, 2008).

Video Observations

Field experiences are a critical component of teacher education programs. Creating meaningful field experiences while evaluating student performance can be challenging. Beerer (2017) found that teachers were able to foster authentic learning through culturally responsive teaching while using video technology. Video technology can be an effective mode of instruction, partially due to the emotional response it elicits (Bradley, Carmichael, Karpicke, & Reid, 2018). Additionally, the core intelligences that humans possess—verbal/linguistic, visual/spatial, and musical/rhythmic—can all be used by video (Bannink, 2009).

VGR Framework

Educational VGRs are grounded in the practice of grand rounds used in the medical training model (Crowe, Dotson-Blake, Vazquez, & Malone, 2018; Van Hoof, Monson, Majdalany, Giannotti, & Meehan, 2009). In the medical model, interns participate in observations utilizing grand rounds, whereby they examine authentic medical situations and then debrief with their instructor. The medical grand rounds model has also been recommended to consider for use in teacher education (Roegman & Riehl, 2012; Thompson & Cooner, 2001).

VGR involves teacher candidates viewing a series of lesson videos, completing structured observation protocols, and then debriefing with a

faculty member (Cuthrell et al., 2014). Observation protocols can provide evidence for future instruction and professional development and help predict teacher candidate learning outcomes (Piburn & Sawada, 2000). One VGR model study used a comparative research design to examine effects of employing the VGR process before observing school classrooms in the field (Cuthrell et al., 2016). There were 65 undergraduate sophomore participants in this study: 17 in the control group and 48 in the treatment group. The control group exhibited development, but the treatment group with the VGR experience demonstrated significantly greater growth than their non-VGR classmates. In particular, the VGR group performed better in focusing on salient classroom interaction features, identifying complex classroom interactions, and transferring observation skills from video to in-school experiences. Additional studies involving the use of VGR with undergraduate teacher education candidates are needed to further explore and expand on the results of initial VGR studies, including in the fields of elementary, secondary, and special education.

Similarly, video modeling provides a recorded demonstration of a specific behavior followed by learner performance of the modeled behavior (Catania, Almeida, Liu-Constant, & DiGennaro-Reed, 2009). Video modeling has been examined as an effective means to provide skill-specific instruction and procedural implementation (Gaudin, Chaliès, & Amathieu, 2018; Leblanc, 2018). However, unlike video modeling, VGR is focused on learner performance.

Using Video Observations in Rural Teacher Education Programs

There are challenges associated with requiring a large number of field-experience observation hours for preservice teacher candidates' placements in rural special education classrooms, especially availability and accessibility of quality rural special education teachers to serve as clinical teachers. Teacher quality comprises a teacher's identity combined with knowledge and skills in pedagogy, content, and theory (Churchill et al., 2011). As a way to mitigate these challenges, teacher preparation programs can use technology for pre- and in-service teacher development (Rock et al., 2016).

Research supports the use of video models and video annotations in teacher development (Beerer, 2017; Leko, Brownell, Sindelar, & Kiely, 2015). Using videos as digital observation tools can offer access to diverse settings (Hixon & So, 2009), such as rural educational contexts. In addition, through videos, teacher candidates can experience authentic learning (Beerer, 2017) and explore shared classroom interactions, practices, and specific learning scenarios (Borko et al., 2008; Youens et al., 2014). Reflecting on focused observations in videos can engage teacher candidates in deeper reflection (Goldman, 2007; MacLean & White, 2007; Stockero, 2008).

Through the use of video observations in conjunction with written instructor feedback, teacher candidates can enhance their capacity to reflect on their teaching skills (Coffey, 2014). With the verbal and nonverbal elements of teaching captured on video (Quigley & Nyquist, 1992), and the ability to pause, annotate, and view the video multiple times (Snoeyink, 2010), teacher candidates have the opportunity to observe elements of teaching that may have otherwise gone unnoticed (Zhang, Lundeberg, & Eberhardt, 2010).

Context for VGR

At East Carolina University, a southeastern-US rural state university, special education teacher candidates have been provided with opportunities to view a variety of instructional strategies in the adapted and general curriculum, across grade spans (K-12), and focused on differing student characteristics and disabilities. Teacher candidates have been offered a wealth of different observation and teaching experiences, including through face-to-face interactions and video observations.

VGRs were used to instruct teacher candidates in how to observe and what to look for as they observed in practicum experiences (Williams, Evans, & King, 2016). Video-recorded examples of authentic rural classroom instruction and a structured observation protocol were provided to teacher candidates to facilitate their video observation and reflective practice. The VGR model

was integrated into an early experience-observation course during the freshman year as partial attainment of a 16-hour practicum in schools. The required student observation hours in this course were key in helping teacher candidates determine if this is the right career choice and supporting their exploration of which initial special education licensure track (i.e., general or adapted curriculum) to pursue. The experiences were also designed to provide teacher candidates with a framework for observations and discussions guided by instructors that could provide a conceptual foundation for their future studies. In this article, we detail the development and implementation of the VGR model in the special education program.

The teacher preparation program that is the focus of this study had teacher candidates observe 16 hours of K-12 instruction in an early experience course, which occurred during the second semester of each candidate's freshman year. Before implementing VGR, there were concerns with the structure of observations. First, there was no set procedure to determine what was being observed. Second, due to the size of the teacher preparation program, a large number of classrooms were needed for all teacher candidates to complete their observation hours. This can be problematic due to the limited number of special education teachers available in rural areas (Cross 2016; Rhew, 2017).

We developed a clinical experience model that used preselected classroom video clips and a grand-rounds approach designed to engage teacher candidates in mentored observations. The observation protocol helped teacher candidates identify specific information about the observed classrooms. The videos provided real-life examples of instruction.

Research Questions

Given the documented benefits of using videos to enhance experiences in teacher preparation, we chose to implement and then investigate the use of VGR in a preparation program for rural special education teachers. We designed and implemented a VGR model (Figure 1) that incorporated specific video excerpts and a structured observation protocol (Appendix A) to direct and support special education teacher candidates' observations and reflections. This process was then mentored by the course instructor through feedback. We investigated this innovation by using the following three research questions:

1. Does VGR impact candidates' observation skills as documented on the observation protocol?
2. How does VGR affect candidates' observations of and reflections on classroom interactions?
3. In what ways do observation skills transfer from VGR to nonstructured observation events?

Based on the prior literature, we hypothesized that the teacher candidates' observation and reflection skills would improve in quantity and quality through the use of VGR.

Methodology

We used a mixed-methods research design for this case study. The goal of this research was to better understand the effects of VGR on special education teacher candidates' observation skills in an early experience course. We used inferential statistical analysis to determine if there were statistically significant gains in outcomes from the observation protocol use. To triangulate findings, we collected qualitative data from teacher candidates' reflection essays, final examination responses, and debriefing responses.

Procedures and Data Collection

A convenience sample of 69 teacher candidates participated in the VGR case study. All participants were from two consecutive semesters of the course taught by the same instructor. Documents collected throughout the study included (a) completed observation protocols, (b) reflective essays about the overall practicum experience focusing on teacher candidates' observations, (c) observation and reflection responses to a final examination video, and (d) in-class debriefing responses.

Teacher candidates viewed four videos online through the university's learning management system and completed a structured observation protocol to analyze effective teaching practices. For each of the four observations, teacher candidates

conducted VGR observations and completed the observation protocol outside of class, which was followed by a 1-hour debriefing that occurred during a class session. We video-recorded these classes to collect data for research purposes. After class, the instructor's completed observation protocol was posted online for teacher candidates to compare and contrast their observations to their instructor's observations. To conclude the VGR process, the students completed a "3-2-1" assignment, which included three items that were the same on the student's observation protocol and the instructor's observation protocol, two items that were different, and one question designed to elicit teacher candidates' questions about the observation, debriefing, and comparison process. In addition to completing four video observations following the VGR approach, teacher candidates were required to observe classroom teachers in two settings, adapted-curriculum and general-curriculum rural special education, utilizing the same structured observation protocol and reflecting on their observation experiences.

VGR Development

College of Education faculty developed a VGR model, which was integrated in an introductory clinical experiences special education teacher preparation course. Special education teacher candidates viewed a series of lesson videos, completed structured observation protocols, and then debriefed with a faculty member following each video observation (Figure 1).

Classroom Observation Protocol Development

Observation protocols were used because they have been found to provide future instruction evidence and professional development and because they can be used as a predictor of teacher candidate learning outcomes (Piburn & Sawada, 2000). The classroom observation protocol in our study consisted of three sections. Focus area 1, "Context for Observation," requires teacher candidates to identify the college- and career-ready

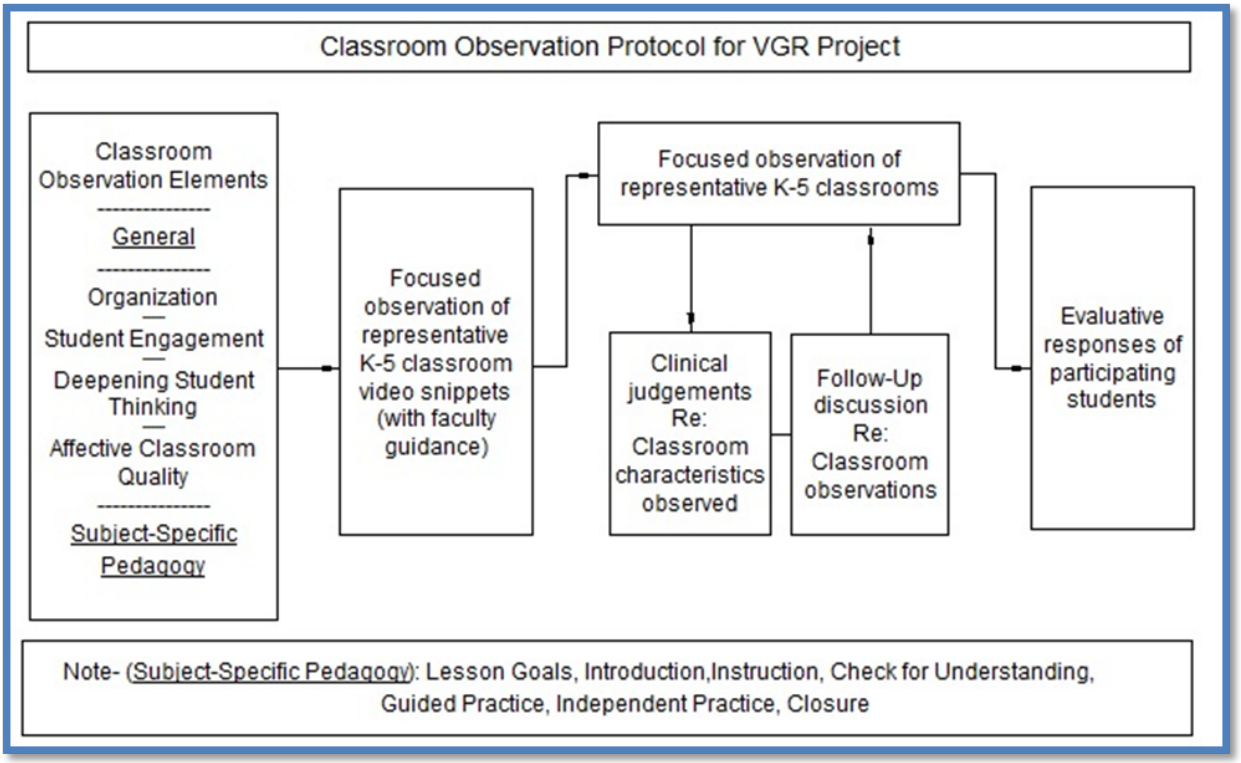

Figure 1. Video grand rounds process.

"Did the students seem to like/enjoy/trust the teacher?" "Were students attentive and 'on task' throughout the lesson?" "Did the teacher monitor the performance of all students?" Teacher candidates would mark "yes" or "no" and then cite specific evidence from the video that influenced their response. Focus area 3, "Subject-Specific Pedagogy," highlights the various lesson components observed, including lesson planning, lesson goals, introduction, instruction, checking for understanding, guided practice, independent practice, closure, and a summary of characteristics. Protocol questions were as follows: "Was background knowledge assessed?" "Did the teacher give examples?" "Was there a guided student activity or exercise?" These three sections reflect core instructional constructs introduced and examined in our special education program. Teacher candidates demonstrated mastery of these core constructs in a capstone performance assessment, edTPA, a validated teacher performance assessment (Stanford Center for Assessment, Learning, and Equity, 2016).

Extending Use of the Model

The VGR teacher preparation model was initially implemented with elementary education majors. The model was extended to business, English, and special education majors. Later, middle grades, birth-kindergarten, health, and counseling education majors incorporated VGR.

Implementation of VGR in Special Education

The special education program area infused the VGR model into the required freshman-year early experience course, which included a 16-hour practicum in schools. In this course, teacher candidates observed classroom teachers in at least two different settings, adapted-curriculum and general-curriculum rural special education, and completed a reflection of their experiences in each setting. Before VGR, students received minimal guidance in how to observe, resulting in lack of specificity in their written observations (Williams, King, Wilhite, & Canter, 2014). The researchers found that teacher candidates generally did not identify effective or ineffective teaching.

As an outcome of this review, faculty revised the course and introduced the VGR model. Before completing 4 hours of observation in their assigned schools, students viewed a series of four videos through the university's website and completed a structured observation protocol. This enabled teacher candidates to begin viewing the process of teaching from a teacher's viewpoint rather than a teacher candidate's perspective. We structured the observation form so teacher candidates could fine-tune their observation skills and begin to analyze effective teaching practices. Before attending class, teacher candidates posted their observation protocols. On class day, there was a 1-hour class debriefing. After class, the instructor's protocol was posted online and the teacher candidates were given an opportunity to reflect and list the similarities and differences between their observation and the instructor's.

VGRs were introduced as a way to instruct teacher candidates in how to observe and what to look for as they begin their practicum experiences. Teacher candidates were provided with video-recorded examples of classrooms along with a specific protocol to guide their observation of the video. Four video observations were completed in class (VGR) before the students observed in a local school using the same observation protocol.

The special education program area produced a series of videos for VGR using classrooms in rural eastern North Carolina. Videos included both adapted curriculum and general curriculum in elementary, middle, and high school general and special education rural classrooms. Each video also included an interview with the classroom teacher modeling the 5-point reflection cycle and highlighting important aspects of the recorded lesson (e.g., instructional or behavioral strategies).

Video Development

The VGR videos used in this study were developed in diverse, rural special education classrooms in eastern North Carolina. The videos were captured in multiple settings and grade levels (i.e., general curriculum, adapted curriculum, and grade levels in elementary, middle, and high school). Classroom teacher interviews were included in each video, which debriefed key points

of the lesson and modeled the 5-point reflection cycle. The video library development process comprised three phases: (1) identifying educators/ classrooms, (2) preparing for video sessions, and (3) developing the videos.

Identifying Educators/Classrooms. Initial special education licensure in North Carolina is a K-12 license in either general curriculum or adapted curriculum; therefore, initial licensure teacher candidates engage in a variety of observations and practicum experiences across elementary, middle, and secondary grade spans, as well as in inclusive, resource, and self-contained classrooms. To provide teacher candidates with a range of opportunities, university faculty identified regional general educators and adapted/general curriculum special educators who offered high quality, evidence-based instruction to diverse learners. They also identified essential strategies, practices, and concepts to be highlighted across the video collection. The project director met with potential educators to discuss the goals of the video collection, potential impact on educator preparation, and practical considerations related to video development (i.e., parental consent and student assent).

Preparing for Video Session. Once an educator agreed to participate, the project director provided consent/assent forms to be completed by teachers, parents/guardians, and students. They also discussed the taping session in terms of class session length, instructional focus, considerations for students not participating, preparing K-12 students (e.g., "act natural"), strategies for navigating the video equipment and videographer, and identifying educator coverage and location for the reflection interview. Educators provided a lesson plan or description of the class session, which aided the project director in preparing for the follow-up interview and filming.

The project director met with the videographer to review the recording plan and strategies for filming a variety of students, from those without disabilities to those with a wide range of disabilities.

Developing Videos. Entire class sessions were filmed to provide teacher candidates a realistic simulation of a comprehensive lesson. These sessions ranged from 40 to 90 minutes. Following each instructional session, the project director interviewed the educator. During this conversation, they modeled the university's 5-step educator reflection process.

Editing resulted in several videos for each collection: (a) one video of the entire class session (which could range from 40 to 90 minutes, depending on grade level and student disability), (b) snippets highlighting specific activities or strategies, and (c) the reflection interview with clips showing activities discussed. The special education VGR library included a collection of elementary, middle, and high school video clips that aligned with North Carolina extended content standards and North Carolina general curriculum standards. Using the recently adopted World Wide Web Consortium (W3C) accessibility requirements, we are in the process of adding transcripts to expand access.

Data Analysis

We analyzed rubric scores from the structured observation protocols using paired-samples *t*-tests to address research question 1. Early experience-course researchers developed and then refined the rubric for simplicity after use in an elementary education program VGR pilot at the same university. Participants received an overall rubric score of 1 (below proficient), 2 (proficient), or 3 (above proficient). Rubric constructs focused on level of detail in teacher candidates' responses to the observation protocol questions, evidence of reflection, and detailed examples that aligned with the reflective responses (see Appendix B).

During qualitative analysis, we used an emergent coding system (Boyatzis, 1998; Stemler, 2001) for the remaining three data sets: (a) reflective essays about the overall practicum experience that focused on what teacher candidates learned from their observations, (b) debriefing formative assessments, and (c) observation and reflection responses to the final examination video. The initial step of data analysis involved preliminary examination of the data sets in which we created a checklist of initial categories based on the observation protocol. This checklist of categories was then coded independently by two researchers. We evaluated interrater reliability by

randomly selecting 20% of the data coded by one researcher to be recoded by the other. Interrater reliability was greater than 85% for the selected data. Once we established interrater reliability, any nonagreement in codes was discussed and renegotiated by both researchers.

To address research questions 2 and 3, we coded individual responses and then organized the codes into categories. Finally, we computed the frequency of each category to provide an overall summary of the qualitative findings. Additionally, we identified frequently asked questions during the debriefing formative assessment.

Results

Observation Protocol Rubric Scores

Due to constraints in our sample size, we used G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) to conduct an a priori power analysis, which revealed that a sample size of 34 was needed to achieve high effect (Cohen's $d = 0.50$; Cohen, 1988) with sufficient power ($1 - \beta = .80$; Cohen, 1988). This suggests that our sample size of 69 teacher candidates was sufficient.

To address research question 1, we computed a series of paired-samples *t*-tests to compare scores for teacher candidates' special education observation-protocol rubric during several observations ($N = 71$). First, we conducted a paired-samples *t*-test to compare the rubric scores of the first (rubric 1; $M = 2.04$, $SD = 0.44$) and last (rubric 4; $M = 2.26$, $SD = 0.53$) VGR observations. Analysis indicated a significant difference, $t_{(68)} = -2.83$, $p = .006$, $d = 0.34$. Additionally, we conducted a paired-samples *t*-test to compare the rubric scores completed at the onset of VGR (rubric 1) and during the field observation later in the semester (rubric 5; $M = 2.54$, $SD = 0.56$). Analysis indicated a significant difference, $t_{(68)} = -5.69$, $p < .001$, $d = 0.60$. These results suggest that candidates significantly improved their observation skills from the first to the fourth VGR observations, and from the first (VGR observation) to the fifth (field observation).

Overall Practicum Reflections

To address research question 2, we analyzed teacher candidates' overall practicum reflection essays in which they discussed the practicum experience and debriefed each video. Four main categories emerged from the identified codes: (a) the teacher, which included personal or affective comments about the teacher and/or appraisal of the teacher's work; (b) classroom management, which involved teacher-implemented strategies used to manage the classroom; (c) the students, which included K-12 students' affective reactions to instruction, behaviors, and diverse academic and cultural needs; and (d) student-teacher interactions, which included observations related to respect among students or between the students and their teacher, cooperation, compliance, and other comments related to the classroom environment.

The overall tone of the comments was positive. Teacher candidates most often mentioned classroom management (25.26%) and student-teacher interactions (25.56%). Comments related to classroom management were typically detailed and centered on instruction. For example, one teacher candidate wrote,

> On the days she was not able to be in the classroom the teacher had an entirely different way of running the classroom. There was less one-on-one work being done and a lot more things being done as a group.

Another teacher candidate commented, "The students would take turns and alternate going up to the board answering questions. They love to try and answer the questions that the teacher asks even if they don't know the answer." Further, one teacher candidate reflected,

> It was obvious that the students knew the routine of this sort of attention grabber. The students had fun learning. Then I saw where vocabulary was taught with just using flashcards and lecture. The students were very uninterested in the teacher and the lesson.

Teacher candidates commented on how the student-teacher interactions varied in the video and in field observations. The opportunity to talk to the students in the live observation appeared to provide greater insight for some. For example, one teacher candidate wrote, “This little boy talked very highly of his teacher and only had good things to say. He said that he loved going to [teacher’s classroom] because she was so nice to him and the other students.” Another teacher candidate commented, “They all said that they liked the room set up, they liked how the teacher was teaching the lessons, they respected the teacher and loved her as well, and that she makes them want to learn.” One other teacher candidate reflected,

> The most important thing that I learned throughout all of my observations was how the teachers interacted with the students. It is so important that the teachers build a relationship based on trust and respect, as well as build a warm and welcoming environment that the students feel comfortable to learn and ask questions.

Teacher candidates discussed students (24.22%) and teachers (24.66%) at a similar rate. When mentioning the students, comments often focused on behaviors or academic needs. For example, one teacher candidate wrote, “The students that were in wheelchairs or had speech inhibitions were given flash cards or the Big Mac or other communications device.” Another teacher candidate commented,

> Letters were written on pieces of popcorn and these pieces popped out of the bucket; the students were to indicate the letter sounds and make words using other popcorn pieces. They counted each day of school then subtracted that number from the total days of school to find how many school days were left.

When discussing the teachers, candidates typically provided rationales or supporting details. For example, one teacher candidate noted that “the teacher would get frustrated with the students if they did not finish their work or were disrupting class.” Another teacher candidate shared,

> In the classroom I observed, the teacher chose a “daily helper” every day to help with tasks such as returning the breakfast cart, helping the teacher with other responsibilities and even running a quick errand such as taking a folder to the teacher across the hall.

Lastly, their reflections included a comparison of video observations and live field observations. For example, one teacher candidate replied, “The videos also showed me really cool ideas to help get my students involved with the lessons.” Another said, “From watching the videos and observing the classroom, I learned that I would be happy working in an elementary school, middle, or high school. In the beginning of the semester I thought that I would enjoy high school better.” Additional responses are listed in Table 1.

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Table 1

Example Candidate Reflections on VGR

Candidate	Comments
1	I liked being able to see a different grade than what I want to teach.
2	The videos also showed me really cool ideas to help get my students involved with the lessons.
3	I really enjoyed how the teachers used Smart Board activities during their lessons to get the students more involved.
4	Being able to watch all of the videos this semester has given me a lot of insight into how teachers differ with skill, experience, etc. I liked the concept of the video observation because I could always rewatch them a second or third time just to be sure I did not miss anything the first go-around.
5	Being able to see how teachers used visual guides as well as instructional technology made me anxious to get a closer look with my in-class practicum teacher.
6	The teachers used different technologies such as voice threads or push talks that more than one student could access. They also used their white boards more throughout the lesson, since in most cases the students benefit more from having a visual tool such as that.
7	From watching the videos and observing the classroom, I learned that I would be happy working in an elementary school, middle, or high school. In the beginning of this semester I thought that I would enjoy high school better.
8	Throughout this semester, my observational skills improved. The videos made me more prepared for when I went to the elementary school.

Final Examinations

To address research question 3, we examined data from final examinations. Teacher candidates all viewed the same video and wrote about what they observed as part of their final examination. They were not required to complete an observation protocol. As was the case with the reflection essay, the same four categories emerged: teacher, classroom management, students, and student-teacher interactions. The overall tone of the comments was again positive.

Analysis revealed that these teacher candidates more frequently made comments associated with the teacher (33.57%) category during the final examination. These comments were highly detailed and most often positive. For example, one teacher candidate commented, “During instruction the teacher modeled the skills that she was trying to teach and then used cues to help the students practice when to do what. The teacher used positive reinforcement to guide her students through the lesson.” Another teacher candidate wrote,

> Throughout the lesson the teacher showed times where she had a plan and was executing it. She never hesitated or got stuck when something did not go the way she expected, she just kept right on with her plan. Even when the students were acting out during the reading, she kept going and had one of the helpers go to that student and take care of them to keep them quiet.

Teacher candidates also frequently commented on student-teacher interactions (28.78%), often with detail. For example, one teacher candidate wrote,

Table 2

Example Candidate Debriefing Questions

Where can I locate the Core Curriculum?
What is a hook? Give an example.
How does a teacher scaffold in a lesson?
Why did the teacher spend so much time going over class rules?
What is the difference in a “Go Talk” and a “Big Mac?”
Explain alerting cues and give some examples.
Tell me more about “whole brain teaching.”
What is the role of the teacher assistant?
Do all students need behavior plans?
How does autism differ from Asperger’s syndrome?
Why didn’t the teacher let the student who had challenges with mobility and in the wheelchair go to the “Smart Board?”
Can you identify an IEP from observing?

“The teacher did a great job asking questions about the story, calling the children by name and acknowledging their efforts and participation.” Teacher candidates also commented on the learning environment and organization of the classroom within this category. For example, one teacher candidate wrote,

> At first the teacher did not look prepared because before she could start reading she had to get two items. She read the whole story with enthusiasm, as she read she had a pointer so that she could point the words out to the students.

Another teacher candidate commented,

> I loved how the first thing the teacher did was explain to the students what the goal was, since I did not see it posted on the board, and she explained what the story was about to the students as well. She made sure that the students were aware of what they were going to do.

Teacher candidates also mentioned classroom management (20.86%) and students (16.79%). These comments were not as frequent or as detailed. For example, one teacher candidate stated, “The students were very involved in the lesson,” while another noted, “They seemed to respond to her in a positive way.” When discussing some of the classroom management observations, teacher candidates provided a few more details. For instance, “Once the lesson and comprehension questions were over, she did an excellent job of transitioning by telling the students exactly what they were going to be moving on to.”

Discussion

To answer research question 1, “Does VGR impact candidates’ observation skills as documented on the observation protocol?”, we computed paired-samples *t*-tests. Results indicated that the teacher candidates demonstrated significant growth in their written reflections on the observation protocols when using the VGR model over time. Specifically, these results indicate that candidates significantly improved their observation skills from the first to the fourth VGR observation, and from the first (VGR observation) to the fifth (field observation). This aligns with previous research that candidates who participate in the VGR process have improved focus on salient classroom

interaction features and the ability to identify complex classroom interactions (Cuthrell et al., 2016).

For research question 2, "How does VGR affect candidates' observations of and reflections on classroom interactions?"; and question 3, "In what ways do observation skills transfer from VGR to non-structured observation events?", We analyzed qualitative data collected from the students' overall practicum reflections and final examination written responses. Qualitative analysis suggests that the teacher candidates were able to transfer elements of the VGR observation protocol to live observations as well as to observations in which an observation protocol was not required. Specifically, the teacher candidates were able to move beyond focusing solely on classroom management themes to also including teacher-student interactions. Thus, their reflections were complex and multifaceted. Furthermore, the teacher candidates routinely supported their comments in the reflection essay and final examination with specific details from their classroom experiences and video observations. By adding specific details and varying perspectives of the observed environment, the teacher candidates demonstrated a thoughtful and critical approach to their reflective practice (Cavanagh & Prescott, 2010; Schön, 1983). The language and constructs of the observation protocols, which were reinforced in each video debriefing, were apparent in both the reflection essay responses and the final examinations, even though observation protocols were not required during that task. Such independent use of the instrument suggests that the protocol itself was a beneficial support and guide for the teacher candidates.

Previous research supports our finding that teacher candidate reflections can deepen through the use of video observations (Coffey, 2014; Goldman, 2007; MacLean & White, 2007; Stockero, 2008). The results of this VGR study also validate previous VGR study findings that candidates who participate in the VGR process have improved focus on salient classroom interaction features, identify complex classroom interactions, and transfer observation skills from video to in-school experiences (Cuthrell et al. 2016). Furthermore, using VGR to supplement teacher candidates' practical observations helped our program mitigate challenges associated with placing candidates in an adequate number of quality practicums in rural areas (Berry et al., 2011) while providing ample authentic experiences supportive of their growth.

Limitations

Limitations of this study include convenience sampling and locally developed videos. Furthermore, the sample size, though adequate, was small and specific to our context. Replication of this approach with these specific videos, filmed in regional rural K-12 classrooms, is limited due to the application of the videos in the context of this teacher preparation program.

Qualitative data were collected using course assignments intended to be evaluated by the instructor, which may compromise internal validity due to social desirability. Finally, although we propose that significant improvements in the rubric scores over time were attributable to the instructional method, it is possible that some of the growth was due to natural maturation through practice.

Lessons Learned: Initial Implementation Successes and Challenges

The initial implementation of special education VGR occurred in generation 2, following the generation 1 VGR implementation by the elementary education program. Learning from generation 1 experiences benefited the special education program VGR initiative. Generation 1 placed VGR in the sophomore year, and generation 2, in the second semester of the freshman year. By placing VGR in the freshman year, teacher candidates were taught how to observe a classroom setting before experiencing any face-to-face practicum experiences. Rural special education classrooms are complex and multifaceted (Burton, Brown, & Johnson, 2013). In this study, VGR provided the opportunity for an experienced instructor to model observational commentary to teacher candidates early in their program of study.

Generation 1 of VGR, as implemented in the elementary education program, used video clips taken from online sources. However, fewer video clips of special education classrooms were

accessible online. The lack of resources led to one of the most beneficial components of the special education program's VGR implementation: authentic video clips developed in local rural special education settings. By developing the videos, faculty could ensure high-quality modeling of specific strategies and interventions. Discussion by the special educator following each video segment provided further insight into what occurred and why the teacher selected specific methods. Furthermore, videos were filmed at elementary, middle, and high school levels, which is an important consideration because in North Carolina special educators are licensed for K-12. The video library can also benefit the special education program at large. For instance, video clips have been used by instructors in other courses to demonstrate specific instructional strategies.

Implications and Future Directions

Because finding high-quality practicum placements can be challenging for teacher preparation programs, particularly in rural areas (Berry et al., 2011), we posit that practicum classes during advanced program years may be able to use a VGR model to supplement or replace face-to-face experiences. In addition, scaling up the observation protocol and VGR clinical experience beyond the early experience class into content methods courses could strengthen the overall curriculum in preparation for the edTPA (a performance assessment required in our state to be recommended for licensure) and final internship experience. Moreover, VGRs could be implemented within K-12 schools as a tool for professional development of educators. VGR for professional development uses is especially relevant when considering the challenging nature of using resources to organize live observations and arrange for class coverage.

Since this university serves 43 public school systems in rural eastern North Carolina, the College of Education felt that quality field placements reflecting the diversity of this geographical area were critical to teacher preparation. Due to limited resources (e.g., number of field placements, transportation), it was important to implement innovative technologies to not only prepare face-to-face students but also the growing distance-education community. Thus, VGRs have since been used with both face-to-face and distance-education classes.

Since these data were collected, additional video examples were added to the video library collection. This was an outcome of special education legislation requiring "access to the general curriculum" (Yell, Shriner, & Katsiyannis, 2006). As a result, research-based strategies in both reading and math have been infused in the special education program curriculum and instructional courses. These courses have begun to use videos for effective observation and teaching. Therefore, grant money has been used to film videos of master, rural, special education teachers instructing their students in reading and math across different grade levels that include both general curriculum and adaptive curriculum special education.

VGR could also be extended and implemented in rural K-12 schools for teacher professional development. Teachers who work in geographically isolated schools, which often have staffing shortages, tend to need more support for professional development (Sullivan & Johnson, 2012). VGR, which requires minimal technology standards, could be used to address these concerns. When teachers are active participants in targeted professional development that results in discussions about instruction, quality teaching, and student achievement, students benefit academically (Burton et al., 2013). Thus, rural special education teachers could follow the VGR protocol to observe, reflect, and discuss research-based practices implemented by their colleagues in geographically diverse settings.

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Sandra Hopfengardner Warren, PhD, is professor at East Carolina University, where she directs the graduate special education degrees and certificate programs, codirects the North Carolina Deaf-Blind Project, and directs a U.S. Department of Education–funded personnel development grant. She received her PhD in special education and disability policy from the University of Maryland, College Park.

Appendix A
Structured Observation Protocol
Classroom Observation Form (Special Education)

Note—The Classroom Observation Protocol has been formatted for electronic access through the College of Education undergraduate TASKSTREAM web-based tool, and teacher candidates are expected to record their observations using the TASKSTREAM tool. The protocol focuses on three areas: (1) context for observation; (2) learning environment, engagement in learning, and deepening thinking; and (3) subject-specific pedagogy (evaluation of the lesson plan).

Context for Observation Information

Setting: Video ID Observed: _____ OR School Observed: _____ Grade: _____
Instructional Content Focus: _____
Student Learning Activities: _____
Common Core State Standards Connection: _____
IEP Connection: _____

Learning Environment, Engagement in Learning, and Deepening Thinking

For each of the following Learning Environment, Engagement in Learning, and Deepening Thinking characteristics, indicate whether you observed each. Then describe what you observed on the part of the students and teacher in the NOTES section. Complete this section of the protocol by summarizing what you observed.

Characteristic	Yes	No	What evidence from the video/class influenced your answer?
Organization			
Was the classroom well organized for learning?			
Did students know classroom routines?			
Were transitions handled smoothly?			
Affective Quality of the Classroom			
Did you feel students and the teacher had a positive relationship with each other?			
Did students seem to like/enjoy/trust the teacher?			
Student Engagement in Instruction			
Were students attentive and “on task” throughout the lesson?			
Were students focused on what was to be learned?			
Monitoring of Student Performance			
Did the teacher monitor the performance of all students?			

Short Summary of Characteristics Observed

	Observed?		Effective?		What evidence from the video/class influenced your answer?
The Lesson (Special Education)	**Yes**	**No**	**Yes**	**No**	
Lesson Planning					
Does the teacher appear planned?					
Is there evidence of a behavior management plan?					
Is the lesson socially and emotionally developmentally appropriate?					
Did the teacher plan different ways to present information, engage students, and receive student responses (UDL [universal design for learning])?					
Lesson Goals					
Could you determine lesson goals?					
Could you determine the alignment to the standards?					
Did the teacher share the goals with students?					
Were the goals clearly posted?					
Lesson Introduction					
Is a lesson hook provided to link prior learning and experiences?					
Were alerting cues used?					
Was background knowledge assessed?					
Did the teacher preview the topic?					

Instruction					
Did the teacher give examples?					
Did the teacher model?					
Were students given ways to organize their ideas?					
Were instructional teaching strategies used?					Check strategies observed here: ❒ Organizers ❒ Grouping ❒ Questioning and Review ❒ Concept Learning (examples/nonexamples) ❒ Communication Strategies ❒ Other _____
Is the content (academic or functional) of the lesson relevant to the students?					
Is the lesson differentiated based on the needs of all levels of academic development of students?					
Were instructional technologies used?					
Is positive reinforcement used to manage behaviors?					
Is negative reinforcement used at all?					
Does the classroom reflect respect for diversity?					
Checking for Understanding					
Did the teacher ask questions for understanding?					
Were "'why" questions and explanation questions included?					

Guided Practice					
Was there a guided student activity or exercise?					
Did you notice scaffolding in the lesson?					
Did students work together?					
Did the teacher help when needed?					
Independent Practice					
Did the teacher monitor and document student learning?					
Was there an independent student activity or exercise?					
Closure					
At the end of the lesson, was anything done to help students make sense of what was taught (informal assessment)?					
Are the special needs of students met?					
Short Summary of Characteristics Observed					

Appendix B

Structured Observation Protocol Scoring Rubric

	Value: 1.00 Below Proficient	**Value: 2.00 Proficient**	**Value: 3.00 Above Proficient**	**Score/Level**
Completion of Questions	Responses to observation questions are incomplete or brief and fail to demonstrate reflection on the video snippet. Limited examples are provided to clarify responses.	Responses to observation questions are complete and provide adequate evidence of reflection on the video snippet. Adequate examples are provided to clarify responses.	Response to the observation questions are comprehensive and provide clear and consistent evidence of reflection on the video snippet. Detailed examples provide clear illustrations to clarify responses.	

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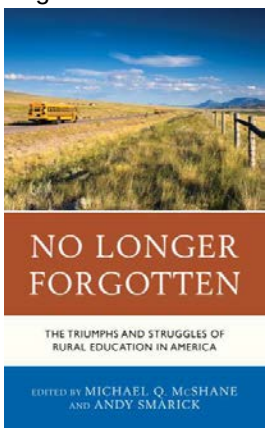
Book Review: Challenges and Current Interventions in Rural Schools

Kathleen Dorr, *Coastal Carolina University*

Book Reviewed: *No Longer Forgotten: The Triumphs and Struggles of Rural Education in America*, edited by Michael Q. McShane and Andy Smarick. Lanham, MD: Rowman & Littlefield, 2018. ISBN: 978-1-4758-4608-9. 177 pages.

***Keywords*: rural schools, rural education challenges, No Longer Forgotten**

The editors of this book, Michael Q. McShane and Andy Smarick, come from two different backgrounds: McShane is a former high school teacher and currently works for the Show-Me Institute, and Smarick is a former assistant secretary for the U.S. Department of Education but now works as a director at R Street Institute. The book's eight essays address some challenges and current interventions happening in rural schools. Each of the contributors brought their own unique understanding and views on the current state of rural education, including how to better understand the statistical breakdown of rural schools, minorities in rural locations, the opioid crisis, poverty, school finance, staffing issues, and the lack of charter schools in rural areas.



Relevance to Current Rural Educational Practices

Over the last few decades, urban schools have been the focus of most educational research and policies. However, rural education is starting to receive attention for both positive and negative issues that students, teachers, and school administrators face. Rural schools are traditionally identified using the National Center for Education Statistics (2007) urban-centric classification system, based on a school's physical address and its proximity to clusters of densely populated areas. Using this model, Burdick-Will and Logan (2017) found that, of the 67,977 public schools located in Metropolitan Statistical Areas, 6% of schools are located in rural areas. Therefore, with fewer schools in these areas it may be easier for some to minimize and trivialize the unique challenges they face.

Rural schools currently face issues related to poverty, lower student diversity, and higher numbers of students with special needs (Showalter, Klein, Johnson, & Hartman, 2017). One 2018 study found that 22.4% of children under 18 years old living in nonmetro areas are living in poverty compared to 17.3% in metro areas (Farrigan, 2020). Another study determined that the poverty level where a student lives has more of an impact on a student's achievement than the student's personal poverty level (Siegel-Hawley, 2016). One of the most frequently cited reasons for student underperformance in school is the effect of living in poverty (Noguera, 2011). Siegel-Hawley (2016) estimated that in most states only 17% of the allotted educational funding goes to rural schools,

while 18.7% of students attend rural public schools. Over the last few years, the use of standards, standardized testing, and teacher evaluations has been implemented as a result of various legislative acts, including the Reading Excellence Act, the No Child Left Behind Act, and the Every Student Succeeds Act to track the educational outcomes of both rural and urban students (Lykins, 2011).

Review of the Text

The first chapter of the book, "A Statistical Portrait of Rural Education in America," by Nat Malkus, discusses different statistical analyses of rural schools across the nation. One of the key points in this chapter is the fact that the many schools in rural locations may differ greatly from each other. For example, while poverty is normally seen as an issue in all rural schools, in the Northeast only 10% of students live below the poverty rate, whereas in the South, nearly 21% of students live in these conditions. However, students in rural kindergarten programs tend to perform higher than those in towns and cities. Rural districts are located away from city centers and tended to rely on jobs that involve the land. However, trying to group all rural schools into one category may be oversimplifying this issue.

The second chapter, "African-American Education in Rural Communities in the Deep South: 'Making the Impossible Possible,'" explores the current state of education for African Americans. Author Sheneka M. Williams discusses how rural communities of color are often situated away from quality health care, safe neighborhoods, good jobs, and adequate housing. To best reach these students, teachers must work diligently to inspire students to reach beyond their means. Therefore, teachers of rural African American students must not have a deficit mindset.

Clayton Hale and Sally Satel, authors of "From Basketball to Overdose Capital: The Story or Rural America, Schools, and the Opioid Crisis," explore the reasons why in 2016 an estimated 42,249 deaths in our nation were related to opioid overdose. States such as West Virginia, New Hampshire, Ohio, and Kentucky have the highest rates of addiction. Once known mostly for their highly successful rural sports teams, these areas are now mostly known as a hotbed of addiction. This chapter highlights some of the reasons this has happened in these locations. Many students in rural areas are have less exposure to other forms of drugs and are more likely to obtain opioids from family members who have prescriptions or even their own emergency room visits. Since opioids are often prescribed by doctors, students living in rural areas report a belief that opioids are low-risk drugs. This belief has resulted in students in rural areas having a higher rate of opioid misuse at younger ages than their urban peers.

Rural identity and its effects on politics is the focus of the fourth chapter, "The Power of Place and the Politics of Rural School Reform." Here Sara Dahill-Brown and Ashley Jochim explore the reasons that rural districts may have higher graduation rates than some urban areas yet far fewer students enroll in postsecondary education. They explain that rural students tend to live in close-knit communities that are distrustful of outsiders, which causes them to be resistant to change. Rural areas also historically tend to vote Republican, and the more remote the area, the more Republican the residents seem to be. Additionally, rural areas are typically home to less powerful teacher unions and fewer special interest groups that work to make changes to the status quo. All of these issues contribute to the idea that rural districts may not be as progressive as more urban locations.

Rural poverty is another challenge that rural school districts face. Chapter five, "Rural Poverty and the Federal Safety Net: Implications for Rural Education," by Angela Rachidi, looks into the impact poverty has on education. Rachidi argues that one of the best ways to overcome the effects of poverty is to ensure that students are receiving a quality education. However, in rural areas, on average less than 20% of the population has a bachelor's degree or higher level of education. Since rural communities are close-knit, those who need support may not seek help due to shame.

School finance is the topic of Chapter six, "School Finance in Rural America," by James Shuls. The chapter explains that looking at all rural districts in the same way is a mistake as finance varies from area to area. Funding formulas may favor urban

districts in some areas, as rural districts are often taxed at lower rates. Additional per-pupil rates can be misleading as they do not show how districts are using the money being spent.

The lack of funds in some districts that may contribute to the staffing issues of rural schools is the topic of Chapter seven, "Staffing America's Rural Schools." Daniel Player and Aliza Husain explain that, while rural districts do have barriers to hiring staff, the area of most concern is finding teachers for English language learners, along with teachers for science, technology, engineering, and math classes. However, many rural districts are utilizing a grow-your-own approach to encouraging former students and local professionals to become teachers.

Another issue, presented by Juliet Squire in the final chapter, "Right Place, Right Time: The Potential of Rural Charter Schools," is the lack of schooling options for students in rural schools. As previously mentioned, owing to rural districts' close-knit nature and poverty, communities may resist and not be able to support multiple schools. In addition, virtual schools may not be an option for those in rural communities due to the lack of broadband connection.

This book concludes with an afterward written by the editors, stressing many of the main ideas found in Chapters 1–8. First, rural districts may share some of the same features; however, thinking that they are all the same is a mistake. Second, many residents are Republicans and often see themselves as blue-collar workers and may be resistant to outsiders trying to bring change to their schools. Finally, when trying to make improvements to education in rural communities, it is important to understand each rural community and its individuals before presenting solutions that may not work in that community.

Takeaway

This book presents issues that rural schools are currently facing but makes it clear that it is a mistake to think that all rural areas are facing the same issues. This book may be extremely useful for those just entering administration in rural areas, and it explores many unique issues that many rural locations are facing. By increasing their understanding of these issues, administrators may gain a better understand of the communities they are serving. Additionally, this book is a must-read for those in government positions who work with educational reform. This book can help these individuals develop a greater understanding of rural education and the problems they face, along with potential solutions.

However, for the classroom teacher working in a rural location, there is limited useful information, like strategies or tips for working with rural students. McShane and Smarick present this book in a way that explains the current issues rural schools face without being completely negative. In fact, by focusing on the uniqueness of these areas, the editors and contributors showcase rural districts as having positive attributes that can be utilized to increase the educational attainment of their students.

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Editorial Board for Volume 10, Number 1

Call for Proposals and Submission Guidelines

Theory & Practice in Rural Education

Dr. Laura Levi Altstaedter, Executive Editor

East Carolina University

The editors of the *Theory & Practice in Rural Education* would like to invite authors to submit manuscripts for its next general topics issue. *Theory & Practice in Rural Education* is a peer-reviewed journal published electronically twice per year, spring and fall. We are predominantly interested in manuscripts related to promising and effective educational practices in rural schools, educator preparation for rural P-16 institutions, and issues related to distinct rural populations. We invite several types of articles and/or multimedia creations, including those with an international focus: practice-based; educational innovations; partnerships for education; research-based articles; review articles; and book reviews focusing on rural education. (Please see Author Guidelines for additional submission information.)

We will be accepting manuscript submissions for the open topics issue through January 15th, 2021 (midnight EST) at tpre@ecu.edu . The call for the themed issue on "Equity, Inclusion, and Diversity in Rural Schools and Communities" (Fall 2021 issue) and "Rural STEM Education" (Fall 2022) are available from the website.
All proposals will be subject to double blind peer review.

Author guidelines

The journal is currently accepting manuscripts written in English or Spanish. All manuscripts should follow *APA Manual* guidelines (7th edition), be saved as a .doc or .docx file, formatted to fit 8½ by 11-inch paper, and double spaced. Manuscripts should be between 5000 and 7500 words, not including figures, captions, or references. Book reviews should be between 750 and 1500 words, excluding references.

In addition, the journal is accepting submission of digital projects. Please see details below regarding content and format for digital project submissions.

Dr. Kristen Cuthrell, Director
Rural Education Institute, College of Education. East Carolina University
Mail Stop 504, Greenville, NC 27858-4353 | 252.328.5748

All manuscript submissions must include:

a. A cover letter identifying the type of manuscript submitted (research-based, practice-based, review, etc.) and outlining the impact of the research and the fit with the scope of the journal. Authors are also asked to confirm that the manuscript is not under consideration for publication in any other publication venues and that it has not been previously published.
b. A cover page including: manuscript title, authors' names and institutional affiliations, contact information of corresponding author, abstract, and 5-7 keywords.
c. An abstract page – abstracts should be between 250 to 500 words in length. Please also include the selected 5-7 keywords here.
d. Manuscript – please make sure the manuscript is free from any identifying information, both in the header/footer and in the body of the manuscript.
e. References page.
f. Tables and figures, if applicable – please include these on separate pages at the end of the manuscript, but include reference to them within the manuscript.
g. Acknowledgements (optional).
h. A statement indicating whether the manuscript is part of a funded project, including information about the funding agency and the project.

Book/media reviews must include:

a. A cover letter identifying the type of manuscript submitted (book review) and outlining the relevance of the book being reviewed and the fit with the scope of the journal. Authors are also asked to confirm that the review is not under consideration for publication in any other publication venues and that it has not been previously published.
b. A cover page including: bibliographical information of the book reviewed, as well as name, institutional affiliation, and contact information of the corresponding author.
c. Review.
d. References.

Digital project submissions must include:

a. A cover letter identifying the type of manuscript submitted (digital project submission) and outlining the impact of the information being presented and the fit with the scope of the journal. Authors are also asked to confirm that the project is not under consideration for publication in any other publication venues and that it has not been previously published.
b. A cover page including: project title and permalink, authors' names and institutional affiliations, and contact information of corresponding author.
c. A manuscript (800-1200 words), including the following elements:
    - An introduction and rationale for the creation of the project.
    - Details about the project, its conception, and its creation process.
    - A statement of the impact of the project for the rural education field.
    - A description of the technology and other resources used.
    - A statement indicating whether this is a funded project, including information about the funding agency.
    - A permalink to the project.

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Theory & Practice in Rural Education (TPRE)

Call for Special Issue on Equity, Inclusion, and Diversity in Rural Schools and Communities

Guest Editors:
Jennifer L. Gallagher, Janeé Avent Harris, Benjamin Blaisdell, and Christy Howard
East Carolina University

Resistance in Rural Education

During the past 50 years, the U.S. has experienced a strengthening of neoliberalism's impact on various social structures (Harvey, 2007). This has resulted in the decimation of trade and professional unionization, increased wealth inequality, and racial resegregation across the country. Schools continue to be microcosms of these broader injustices. As neoliberal reforms took hold in national and state policy, the stripping of collective bargaining rights has changed the work of teaching across states (Swalwell et al., 2017). School choice models have exacerbated differences in school funding between wealthy and poor students (Ravitch, 2013), and by some indicators, schools are more racially segregated today than they were in 1970 (Rothstein, 2013).

These changes have disproportionate impacts on historically marginalized groups and further cultivate power structures of racism, classism, sexism, and heteronormativity, among others. In fact, neoliberal efforts and white supremacy mutually sustain each other. In cities, this looks like Black, Brown, and working-class families being displaced through policies that aim to increase school "choice" for gentrifying white, upper class families (Lipman, 2011). While not always given the focus and attention that urban spaces receive, rural spaces have been equally affected by the expansion of global capitalism's reach. The overpowering neoliberal narrative that the role of education is to support standardized, individual success in a global marketplace undervalues the critical thought needed to cultivate collective political action to resist corporatization, divestment, consolidation, and other unfavorable policies that have been acted upon rural areas (Cervone, 2017). Additionally, it centers progress on a perceived norm that further marginalizes those who are already othered in rural spaces (Howley & Howley, 2010). Education reforms that center on these accountability measures produce a "zero-sum" game for rural educators to play (Schafft, 2010) and de-prioritize, or erase, a focus on the needs of all rural students and families - those who schools and school leaders should be most accountable to.

However, within these oppressive structures, important enactments of agency make space for resistance (Giroux, 2001). Such resistance can improve lives and make rural spaces more equitable and more just. Some of the most important sites of resistance in rural areas are schools. Through research, scholars can document the counterstories of diverse students as forms of resistance. They can counter narratives of rurality that ignore, for example, the experiences of Latinx students in rural school settings (e.g. Chang, 2017). In doing so, scholars can engage the critical insights of minoritized youth in rural schools to speak back against deficit-based narratives of rural students and fashion more culturally sustaining pedagogies. Community organizations and schools can also collaborate to use the community cultural wealth (Yosso, 2005) of rural communities to intervene in the specific issues that those communities face from a social justice framework. For example,

Southern Echo--an organization that addresses rural education issues in Mississippi--has worked with public school students and teachers to identify and intervene in specific housing and environment inequities in their communities (Lockette, 2010). Researchers and practitioners can work with organizations and schools in rural contexts to document and develop these and other types of social justice initiatives (e.g. Grimes, Haskins, & Paisley, 2013).

In this special issue of *TPRE*, we aim to highlight research, teaching, and curriculum that operate as resistance to neoliberal and oppressive educational policy and practice by inquiring into issues of social justice, diversity, equity, and inclusion in rural education. Theoretical frameworks that might be helpful in these explorations include rurality (Marsden, 2006), place-conscious education (Gruenewald, 2003), critical race theory (Delgado & Stefancic, 2012; Solórzano & Yosso, 2001), decoloniality (Patel, 2015), indigenous education (Castagno & Brayboy, 2008), and other critical frameworks, including but not limited to queer theory (Pinar, 2013), feminism (Fraser, 2013) and Black feminist thought (Collins, 1989; Hooks, 2014). Particularly useful would be frameworks that address the intersectionality (Crenshaw, 1990) of oppressions in the rural context. Practice-centered frameworks such as Culturally Sustaining Pedagogy (Ladson-Billings, 2014; Paris, 2012), Equity Literacy (Gorski & Swalwell, 2015), Six Elements of Social Justice (Picower, 2012), and/or Social Justice Standards (Southern Poverty Law Center, 2016) could also be employed to frame or inform empirical or conceptual work. Manuscripts might address aspects of the following issues or related inquiries specific to rural education settings:

- What educational practices effectively redistribute resources or recognize differences (Fraser, 1995) in more just ways?
- How can teachers and school leaders value, integrate, and/or center funds of knowledge (González, Moll, & Amanti, 2005) and community cultural wealth (Yosso, 2005) in rural schools?
- What does abolitionist (Love, 2019) and anti-racist (Kendi, 2019) work look like in rural education settings?
- How do practices and phenomena in rural areas speak back to deficit ideas of rural spaces (e.g. House & Howard, 2009)?
- What does social justice education within content area disciplines (Math, Science, Social Studies, English Language Arts, Enrichments) look like in rural educational spaces?
- What are the impacts of neoliberal education reform on diverse rural learners?

This work could explore classroom practice, educational leadership, librarianship, counseling or other specialist work in P-20 classrooms and other educational settings.

Those interested in being considered for this special issue should submit a full manuscript to the TPRE system (http://tpre.ecu.edu) by March 28, 2021. Questions about possible topics or ideas should be sent to Dr. Jennifer Gallagher (gallagherj17@ecu.edu). All submissions will go through the TPRE process of double-blind review by experts in the field.

Submission Date: March 28, 2021
Publication Date: Fall 2021
For more information, contact: Dr. Jennifer Gallagher (gallagherj17@ecu.edu)

Estimated Timeline

- Manuscripts Due:
  - March 28, 2021
  - Accepted on a rolling basis up until the close date
- Double Blind Review Process:
  - Approximately 2-month turnaround (April/May)
- Articles selected for Revise/Resubmit or Minor Edits
  - Revise/Resubmit Deadline: 45 days from receipt of feedback (May/June)
- Second (limited)Double Blind Peer Review Process From resubmissions:
- Approximately 1-month turnaround (July)
  - Final selection of articles selected for Minor Edits:
- Deadline: one month from receipt of feedback (August)
  - Expected Publication Date: October 2021

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Theory & Practice in Rural Education (TPRE)

Call for Special Issue on Rural STEM Teacher Development

Guest Editors:
Janet K. Stramel, Ph.D. (Fort Hays State University)
Earl Legleiter (Fort Hays State University)

STEM Teaching and Learning in Rural Communities: Exploring Challenges and Opportunities

All students have a right to a high-quality STEM education. Since the 1980s, a shortage of mathematics and science teachers has been recognized (Monk, 2007; Rumberger, 1987; Levin, 1985). Rural school districts face challenges recruiting and retaining in specialized subject areas. According to Lavalley (2018), the unique needs of rural education are "often obscured by their urban and suburban counterparts." Nationally 19% of all students are enrolled in rural schools, and in 13 states, that percentage is greater than 33%, and "more than 9.3 million, or nearly one in five in the United States attend a rural school" (Showalter, et.al., 2019).

STEM Teaching and Learning in Rural Communities - Challenges and Opportunities

Darling-Hammond (1999) found that "high quality" teachers are one of the most important factors to improve student achievement. Nationally, there is a shortage of qualified STEM teachers (100Kin10, 2019). These problems are magnified when disaggregated for rural schools-as rural school districts have difficulties recruiting and retaining teachers in mathematics and science (Brownell, Bishop, & Sindelar, 2005). But the challenge of rural schools in providing effective teaching and learning is not unsurmountable.

We often hear about the less than stellar performance of the United States on the NAEP reported in the media (NAEP, 2019). Contributing factors include funding issues which makes STEM resources more difficult to access, technology gaps, access to resources, cultural challenges, and STEM teacher shortages. Rural districts face these unique challenges, as well as professional development, advanced coursework, diversity, and relevant and meaningful curriculum.

While rural educators and communities face unique challenges, they also provide opportunities. They bring knowledge, experiences, and local connections that can strengthen STEM education. When the complexities of rural spaces are acknowledged and factored in, collaborative partnerships can help to bring external and internal assets together to meet the very real challenges and boost STEM learning and teaching in rural schools. When asked about advantages to teaching STEM in rural communities, Buffington (2019) said that "people who live in these communities have applied understandings of STEM and can contribute that knowledge to STEM learning." This special issue is seeking articles from the field discussing rural school success stories of how rural districts have overcome challenges to have effective and rich STEM teaching and learning in rural schools.

Call for Articles

This issue explores the complexities, practices, and challenges and opportunities facing rural schools and universities as they design, implement STEM teaching and learning. Articles might address issues such as:

- Recruiting and retaining a skilled STEM teaching workforce
- Technology and networking solutions to support/enhance STEM teaching and learning
- Partnerships to improve and support STEM teaching and/or learning
- Advantages, challenges, and/or opportunities to teaching STEM in rural communities

- Making STEM teaching and learning relevant in rural schools
- Community-based curriculum initiatives
- Using local knowledge in STEM education
- Promising and effective educational practices in rural schools STEM education
- Educator preparation for rural STEM teaching

Those interested in being considered for this special issue should submit a full manuscript to the TPRE system (http://tpre.ecu.edu) by **February 28, 2022.** Questions about possible topics or ideas should be sent to Janet Stramel (jkstramel@fhsu.edu). All submissions will go through the TPRE process of double-blind review by experts in the field.

TPRE Author Guidelines: http://tpre.ecu.edu/index.php/tpre/about/submissions#authorGuidelines

Estimated Timeline

- Manuscripts Due:
  - February 28, 2022
  - Accepted on a rolling basis up until the close date
- Double Blind Review Process:
  - Approximately 2 month turnaround (March/April)
- Articles selected for Revise/Resubmit or Minor Edits
  - Revise/Resubmit Deadline: 45 days from receipt of feedback (May/June)
- Second (limited)Double Blind Peer Review Process From resubmissions:
- Approximately 1 month turnaround (July)
  - Final selection of articles selected for Minor Edits:
- Deadline: one month from receipt of feedback (August)
  - Expected Publication Date: October 2022

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