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Editorial: Trends in and Perspectives on Rural Education

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The publication of *Theory & Practice in Rural Education* enters its seventh year. Unlike newlyweds experiencing the dreaded *seven-year itch,* our editorial leadership is thrilled to continue our partnership with authors, reviewers, and readers to fulfill the journal's mission of publishing high-quality articles that address theoretical, empirical, and practical issues in rural education.

The research in this issue illuminates research on a variety of trends in and perspectives on current issues facing North American rural education. Mitchell, Craven, and Adams studied over 100 rural school and district leaders in one Rocky Mountain state. Boulden and Henry studied 15 rural school counselors across the U.S., examining their experiences responding to the rural youth mental health crisis. Shonerd, Grichko, and Lehmann's qualitative study examines how rural pre-service teachers foster critical thinking in their practica and student teaching experiences. Rasheed, Kuehl, Azano, and Callahan examine teachers' experiences with a place-based language arts curriculum for gifted third- and fourth-grade students in a high-poverty rural Appalachian school district. Bice and Cortes share their narrative inquiry drawing on perspectives from students in grades 3–12, their families, and teachers, to re-examine how the rural bus ride shapes learning, relationships, and equity in education. Boz, Hammack, Scherer, Lux, and Gannon's multi-year study on the sustainability of locally relevant engineering practices in rural elementary schools followed three rural teachers after the conclusion of a five-year nationally funded project, exploring the factors that enabled or hindered the continuation of engineering-focused instruction without external support.

Additionally, this issue examines the perspectives of educational leaders and the issues they often face in rural education. Wallin, Newton, and Jutras's empirical study of 70 teaching principals—school leaders who balance dual responsibilities of teaching and administration—in Canada's rural, remote, and northern schools explores community

contexts, workloads, challenges, benefits, and leadership practices. Flowers' autoethnographic study of his experiences as a Black principal in a predominantly White rural middle school in the Southeastern United States provides an additional perspective on the issues faced by educational leaders.

Finally, this issue presents TPRE's first Digital Project, an online showcase of oral histories of rural Tennesseans curated by Comer and Trent.

TPRE is supported by ECU Library Services and the Rural Education Institute. All manuscripts undergo a double-blind review process coordinated by the staff, including the Journal's Executive Editor, Journal Manager, Assistant Editors, Associate Editors, and Reviewers.

The publication of this issue would not have been possible without the continuous support of various individuals. Special recognition goes to Jennifer Williams, the Managing Editor; Dr. Jerry Johnson, the Assistant Editor; Dr. Jan Lewis, the Director of J. Y. Joyner Library; Joseph Thomas, the Assistant Director for Collections and Scholarly Communication, J. Y. Joyner Library; and Nick Crimi, the OJS Administrator, J. Y. Joyner Library. The journal extends its gratitude to the reviewers on the editorial board and the authors who have contributed their valuable work to this issue.

Looking ahead, the journal is currently accepting manuscripts for the next general issue, which is scheduled for publication in the spring of 2026. Scholars and practitioners in the field of rural education are invited to submit their work to the Research Forum, the Practice Forum, the Digital Projects Forum, or the Book Reviews Forum for the 2026 issues. Manuscripts for general issues are typically due in the fall, with expected publication dates in May. Special issues topic manuscripts are typically due in late winter, with publication expected in the fall. Our Fall 2026 special issue topic is yet to be determined.

Those interested in participating as peer reviewers can register on the journal's website (http://tpre.ecu.edu). By editing their profile and navigating to the "Roles" tab, individuals can select "Reviewer" and specify their interests related to rural education. General inquiries about the TPRE should be addressed to Robert Quinn, Executive Editor, and Jenn Williams, the Managing Editor, at tpre@ecu.edu

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Rural Perspectives: How Rural School and District Leaders View the Present and Future of American Education

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Rural school and district leaders often have distinctive viewpoints about education, their local communities, and the effectiveness of their schools. Using a modified survey instrument, more than 100 rural school leaders from one Rocky Mountain State provided input on the critical issues impacting their schools and students and the future of public schools in the United States. A statistical review and the utilization of a Principal Component Analysis (PCA) found that most rural school and district leaders expressed their immediate concerns about budgetary shortfalls and a lack of educators to serve as teachers in their schools. In addition, many leaders see their schools as capable of working with students who perform above and below grade level. Recommendations for future research include an examination of how rural leaders support LGBTQ+ students, particularly those who are academically at or below grade level, and implementing new efforts to promote innovative solutions to persistent rural school challenges.
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***Keywords*: rural education, leadership, diversity in rural schools, future of rural education**

Rural schools in the United States are numerous and remain vital in their towns and villages. As rural schools remain the focal point of many rural communities, the school principals and superintendents are often seen as community leaders and individuals in control of a vital community resource. These leaders are frequently given a seemingly endless list of tasks and responsibilities when they accept the job, and the list gets longer the more they remain in their role. In addition to the endless undertakings to complete and perform, rural school principals and rural district superintendents are also

accountable to a variety of stakeholders, including school boards, parent groups, state education agencies, and alumni/ae who hold their time in school as a baseline for what comprises a “good school.”

Most superintendents and principals in the American education system have their origins in the classroom as a teacher or some other entry-level role in public education. As a result, rural school leaders frequently have decades of experience in public education and have a unique perspective on the current state of education in the United States and what they see as the future of American schools and learning. This study sought to help identify and understand the perspective of rural public (governmental) school principals and public school district superintendents through survey research and quantitative data analysis to understand rural educators’ concerns about the American education system, with a focus on the concerns and strengths as seen through their lived experiences.

This study sought perspectives from a wide range of rural school leaders in one Rocky Mountain state. Like all regions, the types of rural schools and communities throughout the state differ. Some are in agricultural-based communities, while others are in areas where tourism is the primary industry. The unifying characteristics of their roles and employment in non-urban or suburban schools, however, were used to create a data set that helped provide insight into the following research questions:

- How do rural public school district leaders in one Rocky Mountain state perceive the quality of and challenges to American public education today and in the future?
- To what extent, if any, do rural public school district leaders perceive the impact of national public education challenges on their local schools and school districts?

By examining their viewpoints and perspectives through a constructivist view, a greater understanding of the realities of contemporary rural education and areas of future concern can be identified. These rural school leaders are responsible for many operations, initiatives, accountability measures, and financial decisions in each school district. Their opinions, while seldom researched, are worthy of further investigation.

Literature Review

Rural areas enroll approximately 12 million students, representing 24% of the entire U.S. student population (NCES, 2016). These schools are in nearly every state, and there is a strong interconnection between education and economic outcomes in rural America. Recent scholarship has focused on trends in educational attainment, gender and racial disparities in rural schools, urban-rural comparisons, and the financial concerns related to rural education (Mare, 2017). While there are indications of increased educational attainment among rural Americans, this is not true for all demographic and sociological groups (Munyan-Penney & Mehrotra, 2023). For example, individuals living in remote rural regions are less likely to possess a four-year degree as compared to peers in urban and suburban areas (NCES, 2023). As seen in both urban and suburban schools, racial minority members and students from lower socioeconomic levels continue to report lower achievement than their white peers (Munyan-Penney & Mehrotra, 2023).

One of the unique components of research in rural education is the impact that local classifications play in understanding the context of rural schools. At the national level, there remains a locale classification system, which categorizes school districts into four major types: city, suburban, town, and rural. Additional subcategories have been developed depending on school size or proximity to urbanized areas (NCES, 2006). Based on these classifications, almost a quarter (24%) of all operating regular school districts in the United States are in rural areas (Cai, 2023). These include approximately 25,000 rural public elementary and secondary schools operating in nearly 6,000 districts (Gutierrez & Terrones, 2023). For this study, these federal guidelines are included. However, additional refinement regarding rural school districts in the state of this study was applied utilizing the state's definition of "rural" and "small rural" school districts.

In the United States, the role of the principal and superintendent has remained crucial during the last 100 years. Principals, in general, handle school-specific management and operations for students at one of three levels: elementary (ages 5-12), middle (ages 12-15), and high school (ages 15-18). Superintendents have a larger scope of responsibility as they are in charge of all schools within a geographic location (with exceptions for those leaders at online schools). Typically, superintendents are responsible for larger components of education, such as budgeting, facility and school

building updates, and larger community-based issues and concerns that involve the local schools. In smaller communities and schools, the role of principal and superintendent may be combined (colloquially termed “princitendent”). In the rural principal population in the United States, 86% of rural school leaders are white (Taie & Lewis, 2022). In the superintendent role for all American schools, 27% of these school district leaders are female, and 91% are white. There is little indication that these percentages differ substantially in rural locations. This lack of diversity in district leadership is highlighted in challenges faced by rural schools in America, as the number of diverse students between 1995 and 2004 increased by 55%, with more than 2 million rural school students who identify as non-white (Howley et al., 2014).

Additional recent scholarship on rural superintendents and principals has focused on reactions to external factors such as COVID-19 (Lochmiller, 2021), leadership practices (Hayes et al., 2021; Myende et al., 2018), drug abuse and addiction (Burfoot-Rochford, 2020), roles and responsibilities (Copeland, 2013), and employment and turnover (Kamrath, 2022; Williams et al., 2019; Lund & Karlberg-Granlund, 2023). Moreover, while these are important and relevant concepts related to rural education, they do illustrate the relatively limited study on the individual opinions of school and district leaders.

A survey research approach was employed to obtain the viewpoints of rural superintendents and principals on specific issues related to current and future outlooks of education. Survey research is appropriate for this study as it seeks to understand a targeted phenomenon and to “illuminate personality, social, and psychological attitudes” (Luhanga & Harbaugh, 2021, p. 1). The utilization of survey research in educational studies has been well-established and applied in a great deal of previous research (Alexander & Doddington, 2010; Wastiau et al., 2013; Patall, 2024; Liu & Ramsey, 2008) and provides unique insight into individual opinions in a uniform manner (Freeland, 2015). To obtain the viewpoints of leaders in many districts and schools, the application of survey research also provided an effective means of data collection.

Applied Theory

To help frame this study, a constructivist theory was applied to better understand rural school leaders' viewpoints and perspectives. Constructivism focuses on the belief that “some knowledge exists outside the mind” (Bingham et al., 2024, p. 6) and that meaning is constructed by the individual and through the developed relationship between the subject and the object. In this sense, linking the knowledge of the rural school experience to the subject of the present and outlook of American education constitutes the core of the constructivist approach for this study. The application of the constructivist approach has been used extensively in politics (Chandra, 2012), leadership (Leclerc et al., 2021), and education (Karpouza & Emvalotis, 2019). The benefits of leveraging this constructivism within survey research effectively correlate to obtaining participant viewpoints through an exploratory approach and allowing for the coding of responses to determine linkages between viewpoints and other categorical variables (Lindqvist & Forsberg, 2023).

While the constructivist approach does have merit and a long history of utilization, it does have limitations as well. The primary concern with the constructivist approach centers on the wide range of interpretation and perceptions held by individual respondents when examining constructs that may be difficult to specify or generalize across locations and experiences. While we can collect data from individual respondents, there must be some consideration that there is variability of perception built into the research model that cannot be fully overcome. Additional limitations can also include the impact of individual backgrounds and experiences, self-identity, and race/ethnicity as all these components can, and do, contribute to an individual’s perception of their world and experiences.

The linkage between the constructivist theory and the application in this study, explicitly the connection to the survey design and data analysis, is founded within the perceptions and attitudes held by those responding to specific lines of inquiry. This is based on the concept that individual attitudes and opinions are based on other associations that impact the individual (Tourangeu et al, 2000), and there is a subsequent evaluation of this response. Hence, the alignment between the applied theory and

methodology was intentionally created and reviewed to ensure clarity in response and additional depth when analyzing these corrected responses.

Methodology

Instrument construction and validation were emphasized with the utilization of survey research in this project. After extensive review, it was found that there was an avenue to develop a concise, focused, and reliable survey using elements from three existing survey instruments (Educators for Excellence, 2023; Gallup, 2018; and University of Michigan, 2001). In each instance, specific lines of inquiry were isolated to ensure validity in terms of responses from our targeted population. For example, specific questions directly pertaining to school leadership were utilized from the 85-item survey developed by Educators for Excellence. To minimize and mitigate the challenges associated with the selection of individual questions within an existing instrument, extensive field testing was utilized with a small group of rural leaders to clarify vague or confusing questions. As a result of their feedback, the instrument was condensed in order to be completed in a short time frame. Leveraging the field test component served as a contributing factor in the establishment of instrument reliability, allowing the research team to review responses and non-responses among a sample of respondents throughout the field test.

It was also determined that the utilization of a principal component analysis (PCA) would be effective and appropriate for this study, as it is an effective method to reveal “hidden factors” within complex structures (Naik, 2019, p. v). PCA also has the advantage of preserving data variance within collected responses and reducing dimensionality without omitting essential and common responses (Gewers et al., 2022).

A distribution list for rural school superintendents and principals was developed through public-facing websites to obtain the email addresses of principals and superintendents employed in rural schools during the Fall 2023 semester. For those districts that did not display the e-mail addresses of these leaders, follow-up phone calls were made to obtain this information. In total, 252 individuals were identified and recruited to complete the survey and contacted via email. To encourage participation, survey completers were notified that they would be entered in a drawing to win university

merchandise and the hand-delivery of donuts for all faculty and staff members at the winning school district. While these elements were not designed to influence individuals to complete the survey unduly, it must be noted that they may have been a factor in developed response rates.

Emails with the electronic survey link were distributed to all individuals who met the required criteria. The participation criteria included being a current superintendent or principal at a rural school in the designated state and having access to technology and computer networks where the electronic survey was to be completed. Contained within the survey instrument was an electronic form where consent to participate could be documented and an optional question where interested respondents could enter the incentive drawing. The response window for completed surveys was active for four weeks (28 days), and all survey data was collected following the end of the survey response period.

One hundred one surveys were completed, representing more than 50% of all rural school districts within the state. All collected data were reviewed to ensure survey completion and coded to reflect individual responses. Statistical analysis was completed to align with the primary lines of inquiry. Both descriptive findings and significant analysis are presented to provide greater insight into the responses provided.

Descriptive Findings

Following a four-week window, 101 responses were collected from individual respondents. After a screening of the data, eight submissions were redacted as responses were incomplete and were withdrawn from the data set. The following table (Table 1) provides details regarding respondents' characteristics.

Table 1

Respondent Characteristics

Characteristic	Category	%
Primary Role	Superintendent	64.5%

	Principal	21.5%
	Superintendent & Principal	6.0%
	Other	8.0%
Years in Education	1–5 years	1.0%
	6–10 years	3.2%
	11–14 years	5.5%
	15+ years	90.3%
Geographic Location	Remote rural	63.9%
	Resort rural	12.2%
	Proximate rural	23.9%
	Other	0.0%
District Enrollment	1–150	16.3%
	151–500	38.0%
	501–1,000	21.7%
	1,000 or more	24.0%

Note. n = 92.

The focus on superintendents as the primary respondent population was intentional, as, in many rural schools, they are involved in all aspects of the school, including monitoring student learning, community relations, and hiring and retaining classroom teachers. Not surprisingly, most of these individuals have many years of experience in education, as more than 90% of respondents have been involved in education for 15 or more years.

For this study, the geographic location included personnel working in remote rural locations that are located more than 50 miles (80 kilometers) from an urban area, proximate rural locations that are located within 50 miles of an urban area, and resort rural schools that are in regions where the primary economic activities involve tourism and recreation.

Responses about immediate concerns facing rural school leaders were also collected and reviewed. Using a Likert scale, respondents were asked about potential

areas of concern for their school district as viewed by the school leader. This line of inquiry was purposefully developed to obtain an understanding of the immediate issues on which many school and district leaders focus. Table 2 highlights these responses.

Table 2

Areas of Concern for Rural School Leaders

Area of Concern	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Improving the performance of underprepared students	1.0%	15.2%	6.5%	42.3%	35.0%
Students living in poverty	0.0%	10.8%	21.7%	40.2%	27.3%
Recruiting/retaining educators	1.0%	2.1%	4.3%	32.6%	60.0%
Strengthening academic rigor	0.0%	13.0%	21.7%	39.1%	26.2%
Preparing students for engaged citizenship	0.0%	16.3%	18.5%	53.3%	11.9%
Budget shortfalls	2.2%	9.8%	14.1%	40.2%	33.7%
State and federal assessment demands	1.0%	10.9%	20.7%	40.2%	27.2%

Note. n = 92.

As seen in Table 2, there are some variations regarding the specific areas of concern for rural educators. More than 90% of respondents noted that issues with recruiting and retaining educators were a primary concern, and 77% of those responding noted their concerns with supporting the academic performance of students who have been underprepared for success at their current grade level. Less than 12% of respondents noted that they were very concerned about preparing students for engaged citizenship, which may reflect the rural school's role in many small communities. As seen in many smaller communities and schools, it is not uncommon for students to be involved

in civic engagement with local government (Ludden, 2011). This may be reflected in this specific response.

Rural school and district leaders were also asked to provide input on their perceptions about the performance of their schools/districts on various topics. By examining their perception of effectiveness on various topics, it is possible to gain a deeper understanding of the perceptions of school strengths and development areas as developed by the responding school leaders. Lines of inquiry were developed to highlight specific groups and sub-groups of students, and the viewpoints on how effectively the school district meets the needs of these students were collected. These results are included in Table 3.

Table 3

Rural School Districts' Effectiveness in Addressing Student Populations

Student Population	Does Not Apply	Not at All Effective	Not Very Effective	Neutral	Effective	Very Effective
Homeless students	6.5%	0.0%	13.0%	26.1%	44.6%	9.8%
Students below grade level	0.0%	0.0%	20.7%	23.9%	48.9%	6.5%
Non-native English speakers	12.0%	1.0%	26.1%	23.9%	34.8%	2.2%
Students above grade level	1.0%	1.0%	16.3%	15.2%	52.2%	14.3%
LGBTQ+ students	9.8%	2.2%	5.4%	44.6%	3.2%	0.0%

Note. n = 92.

Based on these responses, very few leaders saw their schools and districts as completely ineffective for specific student groups. However, more than a quarter of respondents indicated that their district struggled with supporting non-native English speakers, and more than 20% indicated their concern about the effective support of students at or below a designated academic level. The focus on the perception of district support of LGBTQ+ students is also worthy of note, as more than 44% of respondents did not indicate that their district was either effective or ineffective in working with this student population. This finding is of interest as it contradicts existing scholarship that highlights the struggles and challenges many LGBTQ+ students face in rural schools (De Pedro et al., 2018; Shelton, 2022). Given this dichotomy, this line of inquiry will be expanded in a subsequent study.

Principal Components Analysis (PCA)

After reviewing and analyzing descriptive statistics, efforts were made to develop additional insight regarding responses and the interconnected nature of participants' viewpoints. To assist in this process, a principal components analysis (PCA) was performed to provide additional understanding of the linkage within responses. Using PCA to examine subsets of collected data, we examined and enhanced the understanding of the dimensionality of the collected data. This process allowed for greater ease of identifying patterns and commonalities in response – a desired outcome of this study. While the utilization of PCA is more common in larger datasets, it was advantageous in this case as it provided the opportunity to examine specific components related to participant response. With variability in respondent demographics and professional backgrounds, the use of PCA proved to be an effective avenue of analysis.

Quantitative Results

To assess the internal validity of each section of the online survey, Cronbach’s Alpha tests were conducted on the responses to the questions related to each construct. The results of the Cronbach’s Alpha tests are presented in Table 4.

Table 4

Results of Cronbach's Alpha Tests for Each Construct

Latent Constructs	Cronbach's Alpha
Factor 1: College & Career Preparedness	.670
Factor 2: Challenges Preparing Students	.520
Factor 3: Limited Capacity and School Performance Restraints	.000

These levels are lower than expected due to two interrelated causes. First, this was a result of the merging of three distinct instruments to develop a survey that addressed specific lines of inquiry. This merging of existing survey instruments created a potential depression in alpha scores. Second, and perhaps most importantly, the low alpha levels indicate individual self-disagreement between the leader's perception of American schools (in general) and their specific school. This form of in-group bias (Olson, 2019) is reflected in the outcomes of the Cronbach Alpha tests provided. While we believe these levels are directly related to both instrument structure and self-disagreement among responses, this challenge was articulated as an important potential limitation that could impact response reliability. Subsequent studies utilizing this instrument on a national or international level may assist with refining the developed instrument. Despite this limitation, however, subsequent analysis was completed to help provide some additional insight regarding the reported variance.

The following tables (5, 6, 7, and 8) provide an overview of the PCA results. They indicate the main dimensions or factors present in the data, and the reliability of these dimensions in further analysis/interpretation in research or various decision-making processes (source). Specifically, Table 5 provides insights into the amount of variance each principal component captured from the dataset: component 1 (questions/statements associated with college and career preparedness) captured 23.23% of the variance, component 2 (issues related to the challenges in preparing students for post-secondary success) captured 15.56%, and component 3 (examining the constraints with which school leaders must contend) captured 13.44%. By adding these elements, 52.24% of the total variance was accounted for.

Table 5

Total Variance Explained

Components		Total	Initial Eigenvalues % of variance	Cumulative %	Extraction Total	Sums of Squared % of Variance	Loading Cumulative	Rotation Total	Sums of Squared % of Variance	Loading Cumulative %
1	College and Career Preparedness	3.253	23.233	23.233	3.253	23.233	23.233	2.827	20.195	20.195
2	Challenges in Preparing Students	2.169	15.563	38.796	2.179	15.563	38.796	2.367	16.907	37.102
3	Constraints and School Performance Challenges	1.883	13.448	52.244	1.883	13.488	52.244	2.120	15.142	52.244

Note. Extraction Method: Principal Component Analysis

Detailed analysis and the alignment of specific responses provided insight into related questions within the survey instrument. For instance, the factor analysis for the "College and Career Preparedness" line of inquiry was completed and it was found that there is a strong association between responses related to question/statement 18 (*"High school graduates in this country are well-prepared for success in the workforce"*), question/statement 19 *("College graduates in the U.S. are well prepared for success in the workforce"*) and question 13 (*"High school graduates in this country are well-prepared for success in college"*). This association is logical as each statement is similar to the other two and confirms the analytical grouping of specific survey questions. There are also comparable, but lesser, outcomes when exploring the domain of "Challenges to Preparing Students" where agreement statements 15 ("*Schools in the U.S. are better today than at any other time"*) and 17 (*"I am excited about the future of pk-12 public education in the United States")*. With these aligned findings, a greater determination of the validity of responses can be ascertained, and it is possible to obtain additional verification regarding the use of identified common themes emerging from these responses. These correlations are highlighted in Table 6.

Table 6

Rotated Component Matrix

Variable	Component 1	Component 2	Component 3
Q3RC		*.80*	
Q4RC		*.54*	
Q5RC		*.34*	*.58*
Q6RC		*.71*	
Q7RC		*.77*	

Variable	Component 1	Component 2	Component 3
Q8RC			*.68*
Q9RC			*.48*
Q13	*.78*		
Q14			*.58*
Q15	*.57*		*.44*
Q16RC	*.35*		
Q17			*.68*
Q18	*.89*		
Q19	*.78*		

Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations.

Contrasting perceptions also emerged when specific questions/statements were analyzed. For example, there were contrasting viewpoints emerging from questions 28 (*"Where does raising the bar for entry into the profession rate regarding the top strategy to attract talented and diverse candidates to the teaching profession?")* and 26 (*"Where does providing more leadership opportunities rate regarding the top strategy to attract talented and diverse candidates to the teaching profession?"*) when compared with question 32 (*"Where does making it easier to leave and return to teaching without losing retirement benefits rate regarding the top strategy to attract talented and diverse candidates to the teaching profession?"*). In this analysis, it was clear that while leaders

at schools and school leaders were highly receptive to utilizing retired educators as classroom instructors, there was reluctance to reduce requirements for individuals who serve as teachers and opposition towards increasing leadership opportunities for teachers. This may relate to the belief that increasing responsibility for the classroom educator will lead to an increased workload and potential burnout or abandonment of the profession by the individual teacher (source). The inverse correlation is highlighted in Table 7.

Table 7

Rotated Component Matrix

Variable	Component 1	Component 2	Component 3
Q23			
Q24		.44	.75
Q25		.73	
Q26	.79		
Q27			-.49
Q28	.84		
Q29			-.63
Q30		-.75	
Q31		-.68	
Q32	-.65		

Variable	Component 1	Component 2	Component 3
Q33			-.45

Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 6 iterations.

Table 8 highlights a discovered anomaly associated with this specific factor analysis, as it focuses on the various challenges in preparing rural students for post-secondary life. There did emerge a strong correlation between questions 38 (*"How effectively does your school district meet the academic and non-academic needs of students performing above grade level?"*) and 39 (*"How effectively does your school district meet the academic and non-academic needs of LGBTQ+ students?")* which was unexpected and has led to additional discussions about subsequent research regarding the overlap of high-achieving students and those individuals who identify as LGBTQ+ within rural school settings. As previously mentioned, only 3.2% of respondents indicated that they believed their school was effective or highly effective in working and supporting LGBTQ+ students. Yet, 66% of respondents indicated they were effective or highly effective in working with students who were performing above grade level. From an initial review, this association highlights the need for additional study into understanding the role of leaders in supporting subsections of student populations within their rural schools and school districts.

Table 8

Rotated Component Matrix

Variable	Component 1	Component 2
Q35	.72	
Q36		.45

Variable	Component 1	Component 2
Q37	*.85*	
Q38		.79
Q39		.75

*Note***.** Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 3 iterations.

Discussion

This project sought to understand how rural school and district leaders perceive the challenges impacting their schools and students and how they view the future of public education in the United States. Although the data was collected from leaders in a single state in the Rocky Mountain West, the results offer valuable insights into the persistent challenges and perspectives of principals, superintendents, and other school leaders. By identifying which areas are deemed most crucial or less important by education professionals, we can gain a deeper understanding of the pressure points affecting these leaders and explore potential solutions.

Two general strands emerged from this research, with an emphasis on the use of the developed descriptive data, as it succinctly illustrates the key emerging themes. The first finding of note is the predictability of responses related to two key areas that most district and school leaders must address daily – challenges related to financial budgets and the ongoing challenges of finding and retaining classroom educators. These common themes are found in nearly every nation and many schools worldwide (Dillberti & Schwartz, 2021). With limited developed solutions to address these two concerns, these issues will likely remain unresolved and will continue to impact rural schools and students.

The second distinct finding centers on unexpected responses regarding student populations that are often marginalized or not highly visible in many rural locations. For both homeless and LGBTQ+ students, respondents indicated that addressing the needs

of these students and the specific challenges of these populations in rural contexts was not a significant worry or concern. This contrasts with existing scholarship regarding LGBTQ+ students who have expressed significant concern about their experience in rural schools (Roberts et al., 2023; De Pedro et al., 2018). Responses that indicate that their schools were “not at all effective” in working with homeless students and LGBTQ+ students were nearly nonexistent, with 0% and 2.2% (respectively) responding to this category. In addition, 9.8% of leaders stated that working with LGBTQ+ students “did not apply” in their school/district or were neutral in how they view their school’s ability to work with this distinct student population effectively.

It is unclear whether these responses and findings reflect the reality of these student populations in these areas or if they reflect a perceived reality as determined from the viewpoint of the school and district leaders themselves. The application of a constructivist theory for this study allows for respondent expression based on their own experience, or their lack of experience. Based on this constructivist platform, it is logical to examine and note that individual self-perception of a situation tends to be expressed through the various filters and lenses of the respondent (Bingham, Mitchell, & Carter, 2024). Although we might not always be aware of the specific filters and lenses shaping them, individual perceptions and viewpoints often influence their beliefs about school and district operations. Further investigation into this finding could provide valuable insights.

Recommendations & Implications

Findings from this study offer valuable insights into the perspectives and concerns of rural school leaders in one Rocky Mountain state, and the obtained perspectives can help inform policies and practices that impact rural education. Several recommendations and implications directly connect to the research question that focuses on leaders' perceptions of the students and the effectiveness of their schools/districts. As expressed by these respondents, in most schools, there is a clear and immediate need to improve the academic performance of underprepared students, support students living in poverty, and recruit and retain educators. To remedy this issue, it would be beneficial to have policymakers and educational stakeholders prioritize initiatives and resources to address these pervasive and significant concerns. While past initiatives have involved targeted

funding, professional development programs, and community partnerships (Deslandes, 2009; Galdames-Calderon, 2023), new approaches should be developed to address these persistent problems impacting rural schools and rural education. Initiatives that leverage higher education resources and personnel to teach and support rural schools, for example, should be encouraged, as should considering modifications to the length and structure of the academic school year, the length of the school day, and innovative compensation plans available to educators. Only through new approaches will long-term solutions to these ongoing challenges be developed.

It was also seen that school leaders perceive varying levels of effectiveness in addressing the needs of different student populations. This includes homeless students, students below and above grade level, non-native English speakers, and non-conforming gender students (Miles & Grogan, 2022). To ensure equitable educational opportunities for all students, there is a need for targeted interventions and support services tailored to the unique needs of these diverse populations. This may involve implementing enhanced culturally responsive teaching practices, providing language support services, and enhancing safe and inclusive school environments for all students. It may also necessitate bringing in diverse educators, community leaders, and other educational stakeholders to provide insight to teachers, community members, and students about the realities of living and working in a diverse, multicultural society. One challenge for many rural schools is the isolation related to remoteness. Overcoming this through establishing and maintaining effective collaboration with individuals from outside the local rural community can also be a beneficial step towards supporting comprehensive student learning and development.

Legislators at the state and federal levels play a critical role in shaping educational policies and allocating resources for rural schools (Dayton, 2003). These elected officials must begin to construct solutions based on research-identified emerging needs so rural communities can ensure equitable distribution of funding and resources – leading to optimal educational outcomes for rural students. These efforts may involve advocating for policies that address rural-specific challenges, such as funding formulas that account for the unique characteristics of rural schools and districts by providing targeted support for rural educator recruitment and retention efforts. Many rural schools in the United States are utilizing imported labor from Asia and Africa to serve as classroom educators.

Policymakers should take proactive steps to ensure that high-quality educators are available to students in rural schools – and ensure that rural students have extensive exposure and appreciation for diverse peoples and global cultures.

Rural schools are often the heart of their communities, and strong partnerships between schools, families, and community organizations are commonplace and essential for student success. In most rural districts throughout the United States today, school leaders actively engage with community stakeholders to identify local needs, leverage community resources, and foster a sense of shared responsibility for educational outcomes. These efforts should continue to be encouraged, as should collaborative initiatives such as after-school programs, community-based learning opportunities, and parent engagement activities that enhance the overall educational experience for rural students and local community members. Understanding the perspectives and concerns of rural school leaders is crucial for informing policies and practices aimed at improving rural education and putting together action steps to bolster areas of strength and address deficiencies. Rural leaders have many issues to deal with daily, and are involved in many larger multi-year initiatives, such as enhancing exposure to diversity, providing valuable and relevant professional development for classroom teachers, and advocating for policy changes at both the state and federal levels. With an enhanced understanding of how these leaders view their districts and their students' challenges, more direct approaches that are both amenable and beneficial to the students in these rural communities can and should be developed. With a baseline understanding of existing opinions and viewpoints, developing and implementing practical solutions should be immediately employed.

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Rural School Counselors' Experiences Responding to the Rural Youth Mental Health Crisis

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In response to a gap in the literature and the growing mental health needs of rural youth, the authors conducted a phenomenological investigation comprised of fifteen rural school counselors nationwide exploring the rural youth mental health crisis's impact on their students, schools, and roles. The following themes emerged: rising youth mental health needs, protective and risk factors, pandemic impacts, and school counselors' changing roles. Implications for rural school counselors, school districts, and counselor preparation are discussed, along with limitations and future research.

Keywords: rural school counseling, mental health, schools

Merriam-Webster (2024) defines a crisis as "an unstable or crucial time or state of affairs in which a decisive change is impending…especially one with the distinct possibility of a highly undesirable outcome" (Definition 3a). America is undergoing a youth mental health crisis, afflicting young people nationwide (U.S. Department of Health and Human Services [DHHS], 2021). In recent years, youth in the United States have experienced alarming increases in anxiety, depression, suicidal ideation, and other mental health challenges. These trends, compounded by limited access to timely and effective care, underscore the urgent and unstable nature of the current landscape, one with potentially severe consequences if left unaddressed. Youth residing in rural communities, long hamstrung by barriers such as limited mental health access, are among the populations most profoundly impacted. Rural school counselors are crucial school-based mental health experts equipped with the knowledge, skills, and abilities to address obstacles (e.g., stigma, mental health literacy) and promote access to care. As such, they are key figures in addressing this crisis. Despite these realities, no research exists exploring rural school

counselors' experiences responding to the rural youth mental health crisis' (RYMHC) manifestation in rural locales. Consequently, utilizing a sample of 15 rural school counselors with at least 5 years of rural school counseling experience, the present study offers insights regarding rural youth mental health protective and risk factors, and the RYMHC's impact on school counselors' school communities and roles.

Literature Review

Youth Mental Health Disparities

Over the past decade, the United States has witnessed an alarming rise in the breadth, depth, and severity of youth mental health challenges (Mental Health America, 2020). From 2009 to 2019, there was a 40% increase in youth reporting prolonged feelings of sadness or hopelessness (Centers for Disease Control and Prevention [CDC], n.d.). Moreover, suicide rates for youth aged 10–14 increased threefold from 2007 to 2018 (Curtin & Garnett, 2023), and rates of depression and anxiety were on the rise even before the COVID-19 pandemic (Bitsko et al., 2022). These trends reflect an overarching mental health crisis that affects youth broadly, but the impacts are not equally distributed. Disparities have been consistently more pronounced among historically oppressed communities, including LGBTQ+ and Black youth (GLSEN, 2019; Substance Abuse and Mental Health Services Administration, 2021). Pre-pandemic data showed that 80% of youth with diagnosable mental health conditions did not receive treatment (McCance-Katz & Lynch, 2019). Structural and social drivers such as adverse childhood experiences (e.g., neglect, abuse, poverty), social determinants of health, bullying, and isolation have been linked to these outcomes (Bomysoad & Francis, 2020; Koita et al., 2018; Anderson et al., 2022; Stickley et al., 2016).

COVID-19 and Youth Mental Health

Since the pandemic, there is a dramatic increase in youth thoughts of suicide, loneliness, depression, anxiety, and bereavement propelled by losses experienced since the COVID-19 pandemic (DHHS, 2021). The CDC's (n.d.) nationally-representative *Youth Risk Behavior Survey* revealed startling statistics regarding mental health among high school youth in 2021. For one, 42% of youth expressed chronic feelings of sadness and

hopelessness, a 15% increase from 2019. Further, 22% of youth disclosed having serious thoughts of suicide, 18% made a plan to die by suicide, and 10% attempted suicide, which reflects increases in all three areas. In the Trevor Project's (2022) 2022 *National Survey on LGBTQ Youth Mental Health*, which utilized a nationally-representative sample of over 33,000 LGBTQ young people ages 13-24, findings indicated that nearly half of respondents seriously considered suicide in the past year, 15% attempted suicide, and that over half of LGBTQ youth who needed mental health support deemed it inaccessible. Further, during the pandemic, many Black, Indigenous, and other People of Color experienced hardships with mental health implications such as increased rates of loneliness, parental loss, and racism (e.g., Rogers et al., 2021).

Since 2020, numerous scholarly sources and leading organizations have sounded the alarm regarding the dire state of youth mental health nationwide. In October 2021, the American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry, and Children's Hospital Association jointly declared a national emergency in child and adolescent mental health, signaling that "we have witnessed soaring rates of mental health challenges among children, adolescents, and their families over the course of the COVID-19 pandemic, exacerbating the situation that existed prior to the pandemic" (American Academy of Pediatrics, 2021, para. 1). Similarly, the American Medical Association (2023) declared a children's mental health national emergency. The President and Vice President (DHHS, 2023) and U.S. Surgeon General (DHHS, 2021) add to the growing number of entities shining light on this emergency, punctuated by the White House's (2023) comment that "our country is facing an unprecedented mental health crisis impacting people of all ages" (para. 1). While these national trends are deeply concerning, they do not account for the compounded challenges faced by youth in rural communities. The pandemic amplified existing disparities in these areas, where structural barriers and limited resources have made access to mental health support even more difficult.

Rural Youth Mental Health

Youth residing in rural communities are at risk of experiencing poorer mental health outcomes than those in suburban and urban localities. For instance, the National Rural

Health Association (n.d.) found that rural youth are twice as likely to complete suicide as non-rural youth. Rural youth are also more disposed to having a diagnosable mental disorder (Kelleher & Gardner, 2017) and are at increased odds of being diagnosed with depression at some point in their lives (Figas et al., 2022). Additionally, youth emergency room admittance rates from attempted suicide are highest in rural areas (Hoffmann et al., 2021). Logically, the pandemic inflamed many of these trends, with research revealing increased rates of rural youth hospitalization due to mental health concerns (Arakelyan et al., 2022).

Several established factors make rural youth more susceptible to adverse mental health outcomes. Rural communities commonly experience a shortage of qualified mental health providers to address pressing youth mental health needs (Boulden & Schimmel, 2022). This shortage is attributed to several factors, such as limited public transportation, poor infrastructure, and having to travel large distances to access mental health services (Rural Health Information Hub, 2017). As of March 2023, thousands of rural areas across the U.S. were designated as Mental Health Professional Shortage Areas, with over 2,000 additional providers needed to meet demand and eliminate these shortages (Health Resources and Services Administration, 2023). Rural residents may have difficulty paying for mental health services, even with health insurance coverage (Morales et al., 2020). Further, mental health stigma is often deeply embedded in rural communities, serving as a barrier to help-seeking (Crumb et al., 2019). DHHS (2021) raised important concerns regarding the pandemic's impact on rural America, asserting that rural youth are at higher risk of mental health challenges during the pandemic due to many barriers that can inhibit mental health access. These systemic and social barriers emphasize school counselors' importance in these settings.

School Counselors

School counselors are key linchpins in addressing student mental health (American School Counselor Association [ASCA], 2020). Furthermore, they are uniquely positioned to utilize a systemic approach, collaborating with a broad array of partners (e.g., caregivers, administrators) to promote positive mental health outcomes while simultaneously helping engender a safe and affirming environment (ASCA, 2020).

Empirical research supports school counselors' impact on student mental health outcomes such as self-regulation, stress, and anxiety (Bleasdale et al., 2020; Ohrt et al., 2014). Additional compelling research demonstrates school counselors' ability to improve mental health correlates, such as conflict resolution (Mariani et al., 2022), executive functioning (Meany-Walen et al., 2018), and social self-efficacy (Martin et al., 2022).

School counseling in rural settings, specifically, contains its own assortment of opportunities. As mentioned, factors such as community mental health provider shortages, stigma, and logistical constraints (e.g., transportation, affordability) are repeatedly more pronounced in rural settings, causing many youths with mental health needs to not receive services (Boulden & Schimmel, 2022; Crumb et al., 2019). Resultantly, whereas school counselors in other settings may have greater odds of successful community mental health referral, rural school counselors are often the only viable mental health resource for students, possibly contributing to burnout and isolation (Boulden et al., 2022; Boulden & Schimmel, 2022). Further, rural school counselors regularly assume numerous roles to ensure an orderly school environment, adversely impacting their availability, visibility, and ability to provide a comprehensive school counseling program (Boulden et al., 2022; Boulden & Schimmel, 2022; Grimes, 2020). Rural schools' chronic underfunding in many states habitually causes school counselors and rural educators to be under-resourced (Showalter et al., 2023). Conversely, rural schools often have a high degree of pride and connectedness, affording school counselors opportunities to forge meaningful relationships and partnerships (Boulden et al., 2022; Boulden & Brown, 2022; Boulden & Henry, 2023; Boulden & Schimmel, 2022). Further, although the research is mixed, some rural school counselors enjoy greater teacher retention, which supports school counselor—teacher and teacher—student relationship building (Boulden et al., 2022).

Rationale and Research Question

Nationally, there has been a gradual deterioration in youth mental health outcomes (Mental Health America, 2020). The COVID-19 pandemic has impacted all parts of the United States, spurring what is commonly referred to as a *youth mental health crisis*. Rural youth face increased risk of disproportionately experiencing these negative impacts, due to preexisting inequities often found in rural locales (e.g., mental health

provider shortages, logistical constraints, unreliable telehealth access, stigma; DHHS, 2021), and have experienced a rise in youth mental health challenges (National Rural Health Association, n.d.). Rural school counselors play a pivotal role in supporting the needs of all students, and schools are integral to early intervention and identification of mental health challenges (National Alliance on Mental Illness, n.d., *Why We Care* section). In many cases, rural school counselors are the only realistic mental health providers due to several aforementioned barriers (Boulden et al., 2022; Boulden & Schimmel, 2022). Hence, within the context of the RYMHC, this makes their role as mental health experts even more critical. A growing body of literature has begun to explore youth mental health in rural schools (e.g., Hughes et al., 2023). Moreover, researchers have investigated school counselors' role in supporting youth during the pandemic's early stages (Alexander et al., 2022). However, scant research examines rural school counseling within the context of before, during, and the years following the public health emergency, and no research specific to rural school counseling exists. To address this gap, the following research question guided our study: *What are the experiences of rural school counselors in responding to the rural youth mental health crisis?* More specifically, the study explored the RYMHC's impact on their schools, students, and roles, along with contextual factors impacting rural student mental health.

Methods

To understand the lived experiences of rural school counselors in providing services to students pre-pandemic and during the RYMHC, researchers utilized a phenomenological method. Interpretive phenomenological interviewing is a method to understand the lived experiences of participants through their own meaning-making process (Prosek & Gibson, 2021). By asking participants to directly reflect on their lived experiences (e.g., asking them about lessons learned and their perceptions of events), the "findings represent how the researcher made sense of participants' meaning making of their experiences" (Prosek & Gibson, 2021, p. 170). Therefore, the philosophical underpinnings of this study are directly tied to social constructivism, which highlights the multiple truths within narratives through the inclusion of participant and researcher perspectives (Prosek & Gibson, 2021). Social constructivism posits that knowledge is

constructed through human interaction and shaped by cultural, historical, and social contexts. Within this framework, participants' accounts are not treated as fixed facts but as situated understandings influenced by their environments, relationships, and lived realities. For this study, rural school counselors' perspectives were understood as being formed through their interactions with students, families, and school systems within the unique cultural and geographic contexts of rural communities. The researchers' interpretations were also viewed as part of the meaning-making process, acknowledging that researcher and participant co-construct understanding throughout data collection and analysis. Accordingly, the researchers sought to engage in phenomenological reduction by bracketing presuppositions, focusing solely on participants' described experiences, and identifying the essence of those experiences through systematic analysis (Moustakas, 1994). Rural school counselors' experiences and perceptions of the changing needs of rural youth, and consequently, how to best equip rural school counselors in these settings to best address and serve students, were the primary constructs of interest.

Participants

Participants in this study were recruited by the researchers primarily using professional organization listservs and word of mouth. Eligibility criteria included (1) being employed as a public-school counselor in a rural setting and (2) having at least five consecutive years of full-time school counseling experience in a rural school (as of September 1, 2023). Participants' rural schools were verified utilizing the National Center for Education Statistics' (n.d.) locale lookup tool. Regarding demographics, participants identified as female (93.3%) and male (6.7%). For race, 60% (n = 9) identified as White, 33.3% (n = 5) identified as BIPOC, and 6.7% (n = 1) did not provide a response. Ages ranged from 34 to 57 years (M = 44; SD = 7.75). Next, participants were employed across all building levels, including elementary (n = 5), middle (n = 5), high (n = 2), and K-12 school (n = 2) settings, with one participant not providing a response. Years of school counseling experience ranged from 6 to 23 years (M = 12.36; SD = 6.21), and years of rural school counseling experience ranged from 6 to 21 years (M = 11.79; SD = 5.77). School population ranged from 170 to 1500 students (M = 462.79; SD = 313.34). Over half of the participants (53.33%) indicated that they were employed in Title 1-designated

schools. Lastly, participants were employed in the South (*n* = 8), Midwest (*n* = 4), and West (*n* = 3) regions. Table 1 provides an illustration of participant demographics, including pseudonyms to preserve anonymity.

Table 1

Participant Demographics

Pseudonym	**Region**	**Gender**	**Age**	**Race**	**School Level**	**School Size**	**Years as SC**	**Years as Rural SC**	**Title 1**
Barbara	MW	Female	39	White	M	220	7	7	Yes
Monica	W	Female	47	Native Hawaiian	K-12	400	22	21	Yes
Patricia	MW	Female	34	White	K-12	300	7	7	Yes
Margaret	S	Female	56	White	M	320	6	6	No
Faye	S	Female	-	-	-	-	-	-	-
Hannah	S	Female	55	White	H	510	13	13	No
Julia	S	Female	37	Black	E	450	12	12	Yes
Hazel	W	Female	50	Hispanic	M	170	23	20	Yes
Habiba	W	Female	37	White	E	564	7	7	Unsure
Jessica	S	Female	42	White	E	300	14	11	Yes
Wren	MW	Female	44	White	M	370	20	20	No
Brittni	MW	Female	46	White	E	500	6	6	Yes
Luna	S	Female	57	Black	H	1500	20	20	Yes
Sam	S	Male	35	Multi-racial	M	600	10	9	No
Waverly	S	Female	37	White	E	275	6	6	Yes

Note. For school-level demographics, E denotes elementary school, M denotes middle school, and H denotes high school. For the region, MW denotes the Midwest, W denotes the West, and S denotes the South.

Data Collection

Following university IRB approval, data collection occurred through individual interviews conducted through the Zoom platform. Using semi-structured interview protocols, a hallmark of phenomenological research (Creswell & Poth, 2018), participants were asked to reflect on their experiences as a rural school counselor pre-pandemic and during the pandemic, as well as their experiences serving as a school counselor during the RYMHC. Finally, participants were asked to reflect on their own training experiences and readiness to serve in their communities. Interviews lasted 1-2 hours in duration. After interviews were transcribed, the researchers sent them to participants to confirm accuracy. Interviews continued until data saturation was reached, as evidenced by the repetition of responses and the emergence of no new themes in the final three interviews.

Data Analysis

Initially and throughout, the researchers met to discuss both their experiences, identities, and assumptions regarding the RYMHC and their thoughts and reactions to participants' responses, supporting the bracketing process. This ongoing dialogue enhanced their abilities to remain objective and prioritize a deep understanding of participants' lived experiences. The research analysis process was conducted using Moustakas's (1994) transcendental phenomenological approach. First, the researchers independently reviewed each transcript and identified key horizontal statements. Horizontalization was applied to treat each statement with equal value before clustering them into meaning units. Next, they independently created codes from those statements and removed redundant statements included in the initial coding process. Researchers independently created themes and subthemes from their initial coding experiences. Next, the researchers collaborated throughout several meetings to review their initial impressions from the data analysis, discussing potential themes and subthemes until consensus was reached. Textural descriptions (what participants experienced) and

structural descriptions (how they experienced it, in terms of conditions, situations, and context) were developed. From these, the researchers constructed composite descriptions to illuminate the essence of rural school counselors' experiences during the RYMHC.

Trustworthiness Strategies

Numerous well-established trustworthiness strategies were utilized in this study (Hays & Singh, 2023). Firstly, the researchers regularly discussed their reactions, biases, and assumptions, along with engaging in reflexive journaling to support the bracketing process. Furthermore, a positionality statement is included to share their lived experiences and background. Member checking occurred both formatively and after each interview. During each interview, the interviewers asked clarifying questions to confirm accuracy. After each interview, each participant was emailed an anonymized transcript and asked to indicate any requested revisions within two weeks. No participants requested revisions. Lastly, rich, in-depth descriptions are interspersed to provide a detailed illustration of participants' lived experiences. These strategies, combined with methodological adherence to phenomenological reduction and thematic synthesis, served to enhance credibility and trust in the rigor of the findings.

Results

This section presents key findings from interviews with 15 rural school counselors regarding the RYMHC. The results are organized around the primary research questions that guided the study, with each theme aligning to a core area of inquiry. Participants shared rich, firsthand accounts of student mental health trends, challenges, and school-based responses. Four primary themes emerged: (1) rising youth mental health needs, (2) protective and risk factors, (3) pandemic impacts, and (4) school counselors' changing roles. Each theme is organized by relevant subthemes and illustrated through participants' voices. In addition to presenting lived experiences, the findings are interpreted through a social constructivist lens, highlighting the influence of systemic, cultural, and geographic factors on meaning-making in rural schools.

Theme 1: Rising Youth Mental Health Needs

Participants described the status of youth mental health within their respective rural schools before the pandemic. In their descriptions, many emphasized that, even before the pandemic, students' mental health needs had sharply increased over the last decade. Specifically, two subthemes emerged through individual interviews: (a) anxiety and depression, and (b) scholastic impact.

Anxiety and Depression

In describing students' pre-pandemic mental health needs, nearly all participants described increasing signs of anxiety and depression within their assigned schools. The anxiety's sources were multifaceted, including school and community settings. Hannah shared that many students' anxieties were performance or expectations-driven, such as "grades, about doing well, about not letting parents down, about what other kids thought, [and] maybe what other people thought of them." As Habiba reflected, some students reported feeling heightened levels of anxiety "but not necessarily realizing why or realizing what that looked like." Concomitantly, most participants noted rising rates of depression and hopelessness, or signs of depression and hopelessness, among their students. In sharing her observations, Hazel indicated signs such as "depression, grades falling off, huge change in habits, and those day-to-day indicators with kids, like coming in late to school looking disheveled." These narratives reflect a shared perception among rural school counselors that mental health needs were already mounting prior to 2020, shaped by broader cultural and contextual stressors that disproportionately affect rural youth.

Scholastic Impact

Participants detailed how the rising youth mental health challenges observed pre-pandemic impacted students' success and well-being. Specifically, nearly half of the participants described increasing rates of apathy and hopelessness that they believed correlated with these escalating mental health challenges. Wren observed decreased motivation and increased student hopelessness, which she largely attributed to unmet mental health needs. Some participants indicated that their school community's remoteness resulted in increasing rates of loneliness and isolation, adversely impacting

students' mental health, motivation, and academic performance. Julia indicated that some students would "rush through their tests [because] they didn't take them seriously or they just didn't want to do it." This subtheme illustrates how academic disengagement can serve as both a symptom and consequence of untreated mental health issues, particularly in rural communities where support systems may be limited.

Theme 2: Protective and Risk Factors

Participants shared factors within their rural school community that they believe contribute to improved student mental health outcomes, followed by factors that increase students' odds of poor mental health outcomes and thus may exacerbate the RYMHC. The eight related subthemes are (a) school community, (b) school-based mental health access, (c) school-community partnerships, (d) strong sense of community, (e) substance misuse, (f) logistics, (g) lack of mental health providers, and (h) stigma.

Protective Factor: School Community

Most participants described their rural school's importance in supporting positive mental health, describing their schools as close-knit and environments wherein "the kids are all treated like part of the family community." Brittni indicated that her school "doesn't necessarily have a lot of teacher turnover," which supports relationship building between school staff, students, and families. In describing their schools' sense of connectedness, others described how many teachers are keenly aware of changes in students' behavior and attitudes, promptly communicating concerns to them. Sam lauded the benefits of supportive teachers, asserting that "if students can at least find that one person who is their go-to person, that's very helpful for them." Others, like Waverly, described whole-school efforts to bolster student connectedness, such as having students complete surveys wherein students are asked if they feel like educators care about them. These descriptions reinforce the unique social capital found in rural schools, where relational closeness may act as a buffer against mental health deterioration. They also highlight the extent to which schools serve as a central hub of care in the absence of external providers.

Protective Factor: School-Based Mental Health Access

In this subtheme, participants touted the benefits of having community-based mental health agencies housed within their respective rural schools to provide mental health services to students and how having these services in-house reduces barriers to care. For instance, Wren asserted that additional counselors have "made it more accessible [as students are] already here at school, [and] they've been bused here, [so] they can access the mental health counseling here at school." Barbara shared that, in her rural school community, "our local [community mental health agency] is willing to come and see students in our building as well. So having people close by that can be accessed is helpful." Many participants described having school-based health clinics that provide an array of behavioral, dental, and medical services to students, often free of charge. Participants' emphasis on co-located services underscores how logistical accessibility, not just availability, shapes rural students' engagement with care.

Protective Factor: School-Community Partnerships

Participants described partnerships with community organizations that support students' sense of connectedness and overall well-being. Hazel revealed that her school partners with organizations to ensure students' basic needs are met (e.g., food, clothing): "So I think that has helped a lot just by knowing you come here, and your needs are met, we're going to try to help you. So, I think that's huge." Others, like Margaret, mentioned school-based mentorship programs wherein community members are matched with students to develop meaningful relationships and provide encouragement. These insights further reflect the ways rural school counselors serve as community connectors, reinforcing social constructivist ideas of meaning-making within interdependent systems.

Protective Factor: Strong Sense of Community

Participants commented on the strong sense of community within the municipality in which their schools are located, particularly within family systems. According to Monica: "Our children are really dependent, thank goodness, on really strong intergenerational families. So, the cultural norm is these strong multi-generational families. And so that's

where the strength lies." Some participants, like Patricia, shared that community members regularly contact her to share concerns about students, commonly resulting in Patricia checking in with those students. Others highlighted examples of this sense of community, such as sporting events, parent outreach, and donation drives for ill students. As Wren expressed, "there's a lot of care and concern for each other." While this communal closeness offers substantial benefits, it also implies challenges regarding privacy and stigma, which are explored more fully in later subthemes.

Risk Factor: Substance Misuse

Nearly all participants cited substance misuse as a major hindrance to positive mental health. Specifically, participants cited the rising prevalence and severity of substance misuse in their communities. Wren offered a detailed illustration of the substance use challenge in their community:

> We have grandparents raising grandkids, we have parents that are incarcerated, and I know that's not unique to us; that's everywhere. The drug epidemic has affected pretty much everywhere in the country, but we have a lot of that. We have students that have lost parents to overdoses. It's gotten really bad, since I started here 20 years ago, I can definitely see the shift. So that's 100% a problem and we're currently trying to figure out how we navigate this.

Others referred to the past ten years as being in the midst of a "drug epidemic," and described the epidemic's negative impact on youth mental health outcomes. Jessica shared that some students blame themselves for their biological parents' addiction, asking questions such as: "what's wrong with me that my mom doesn't want me to live with her?" resulting in low self-esteem. The effects of widespread substance misuse are not only intergenerational but structural, reinforcing cycles of trauma and compounding school counselors' mental health responsibilities in rural contexts.

Risk Factor: Logistics

Most participants cited logistics as a prevailing factor making mental health access unfeasible. Brittni elaborated that "the [closest therapist] was at least an hour away. So, I would have been the only person available to them to receive any mental health support

because they could not access the town an hour away." Sometimes, logistical barriers exist solely due to bureaucratic constraints, as described by Sam: "My biggest struggle has been ensuring the resources that we do have are more accessible to families…the resources are there, but the hoops you must jump through to get a kid involved in that can be very convoluted." Others described additional impediments, such as a lack of after-school therapist availability, financial constraints, and unreliable telehealth access. Logistical barriers underscore the structural inequities facing rural communities, revealing how geographic and bureaucratic distance can marginalize rural youth from accessing consistent care.

Risk Factor: Lack of Mental Health Providers

Participants indicated that access to high-quality mental health providers within their communities was another barrier and has worsened over the past decade. Often, participants reported being the only accessible mental health provider in their rural communities. More specifically, many discussed that the few local agencies often had long waitlists or high clinician turnover, as Monica expressed: "We just have such a difficult time, number one, filling the positions, and then number two, keeping them here because it is a hard place to live. If you are not from here, it is a real isolating place." Access was still a concern for some schools that contained outside counselors. For instance, Jessica shared that her school's outside counselor "can only see Medicaid patients," making this service inaccessible to most students. The persistent shortage of rural mental health providers aligns with broader rural health workforce trends and exacerbates the demand placed on school counselors to act as default clinicians.

Risk Factor: Stigma

Participants shared that mental health stigma remains a major deterrent to care, particularly from caregivers. Faye indicated that some caregivers are apprehensive about seeking help out of fear of their child being removed from the home or school employees "spying on [them]." Other school counselors, such as Hannah, felt that their communities had "a mentality of, 'I'm going to suck it up and deal with it.' Or, 'It's not that bad.' Or, 'I'm just being dramatic,'" perhaps downplaying potential mental illness and thus preventing

treatment. Julia shared that "when we suggest or ask the parents, would they be comfortable with a referral, it stops right there, because the parents' first response is, 'Well, my kid's not crazy.'" This subtheme illustrates how deeply embedded cultural narratives about self-reliance and privacy may serve as barriers to accessing care, highlighting the ongoing need for culturally responsive initiatives in rural areas that combat stigma.

Theme 3: Pandemic Impacts

Next, participants remarked on the pandemic's school-based impact on both students and school staff. These sentiments are captured in two subthemes: (a) student impacts and (b) educator impacts.

Student Impacts

All participants concurred that, since the pandemic, they have noticed marked changes in students' academic and mental functioning, changes that were more severe, widespread, and impactful than they observed before 2020. As Habiba expressed:

> Yeah. I feel like we talk about it all the time and teachers talk about it all the time. Man, things feel so much…I'm trying to think about that. I'm trying to think of a good way to phrase it...behaviors, things feel bigger, I think, post pandemic, if I can boil it down like that. Things feel bigger and the support has not increased.

While the changes are aplenty, all participants noted that more students struggle with emotional regulation than pre-pandemic. Sam indicated that "[many] students have either severe anger outbursts or severe anxiety outbursts that cause them to present some behavior that the teacher deems as inappropriate, so they sent them to a principal or me." Faye indicated that she has observed increased "meltdowns" from students "struggling a bit more with everything: academics, social, emotional, coping, all of that." Comparatively, Julia observes "students who are standoffish and not wanting to communicate, or respond, or completely shut down on you." Others described increased rates of anger, yelling, crying, misbehavior, and impulsivity, illustrative of potential self-regulation challenges.

Likewise, participants noted an omnipresent change in coping skills in their students, including an inability to bounce back from typical setbacks. Patricia offered her thoughts: "I think students' ability to cope with any more unforeseen circumstances, any more rises in change was just tapped out. I think our threshold is much lower now than it was before COVID." Brittni noted that in her community, familial stress has increased markedly, adversely impacting students' coping capacities. Others offered similar views regarding stress's role in students' coping skills.

Lastly, in describing post-pandemic impacts, all described increased rates of anxiety, depression, self-harm, and thoughts of suicide. Hannah described anxiety in her school as being "much more generalized, [like] that 'waiting for the next shoe to drop' feeling with a lot of our students and even in our staff." Julia offered insight regarding anxiety's frequency and severity in her school representative of many participants' remarks:

> Before the pandemic, if you had students who were concerned about something, like for instance with test anxiety, it really only came maybe at the end of the year when you had the big state testing period. But now, it's any type of assessment, whether it's the benchmarks, state testing, which we do three times a year, their weekly assessments, just a concern about having to sit still and recall that information and put it on paper or do it in multiple choice.

Jessica commented that many of her students are distrustful of themselves and others, which she says "leads to that anxiety of, 'I'm alone. I don't know what to do. I don't know why I feel the way that I do, and there's no one here that has my back.'" Additionally, participants highlighted increased signs of depression among their students. Monica revealed that "they're hurting in ways at younger ages than I think they have in the past, or at least are better at vocalizing now that they're hurting in more ways, which goes back to the depression."

Additionally, participants reported increased rates of self-harm and threats of self-harm, along with suicidal thoughts. Wren noted "an uptick in kids searching [online] about wanting to die or suicide." Sam relayed an uptick in self-harm who "don't really exhibit signs of depression necessarily but they are self-harming often."

Lastly, participants described increased mental health de-stigmatization among their student bodies. Often, they described students being "more open" and willing to explore their mental health, proactively and reactively. Luna offered the following perspective:

> We have had a little bit more of students feeling, I think depressed more, and admitting that more than normal than pre-pandemic. They didn't admit it as talk about it as much, but now they're very quick to say, "I've been depressed, or I've been having these types of thoughts." I think them hearing more about mental health…it's opening up the kids a little bit more and the parents a little bit more to talk about it.

Sam provided similar commentary, sharing that "just in recent years, kids have been more willing to open up and be like, 'Oh yeah, I am having those thoughts.' And we're also getting a lot more self-reports from students." In Barbara's school, the culture has changed as students are "talking about it more, that it's no longer where you just have to suffer in silence." Collectively, these observations demonstrate how the pandemic exacerbated existing vulnerabilities in rural communities, especially regarding students' emotional regulation, coping skills, and access to care. The increase in openness about mental health among students also suggests a cultural shift that school systems must be prepared to support.

Educator Impacts

In addition to the students, participants highlighted the pandemic's impact on their school staff. Chiefly, most participants indicated that their school staff were responsive to students' increased social-emotional needs. Many, like Barbara, suggested that teachers have incorporated social-emotional activities into the classroom to proactively provide coping skills and techniques that minimize undesired classroom behaviors. Waverly cited increased intentionality regarding student—educator relationship building, which helps students recognize that "people really do care about them in the school system." Others indicated that teachers are more receptive to school counselors providing classroom lessons and trainings because "they truly just want to do best by the kids." Relatedly,

participants echoed the importance of supportive administrators in transforming the school culture to be more attuned to students' needs.

While many expressed admiration for teachers' compassion and flexibility, participants indicated that teachers' frustrations have increased in the years following the pandemic. Hazel hypothesized that the frustration stems from frequent classroom misbehavior:

> They're running out of ideas for how to gently redirect that behavior. They've done the SEL training with me and with the county, and they worked hard the first three weeks of the school year building relationships with kids because we've told them that is integral to having the kid wanting to come to your classroom to learn. And they've done the activities. They get to know you. And they're still like, "I have done all these things. I am running out of ideas. What can we do?"

Similarly, Patricia shared that "teachers feel very frustrated, and they feel very burnt out because it is beginning to feel more like working so hard to manage this social emotional aspect that academically, nothing is getting accomplished." Sam indicated that this burnout could exacerbate the trend of "see more good teachers go to other professions" due to increased expectations without commensurate support. This theme highlights the dual burden educators face in rural schools, simultaneously serving as educators and emotional caretakers, often without sufficient support or training.

Theme 4: School Counselors' Changing Roles

Participants described how their school counselor's role has shifted to respond to these complex, multifaceted student needs. The two subthemes included (a) impact on the school counselor role and (b) school counselor preparedness needs.

Impact on the School Counselor Role

All participants described how they have modified their direct services to respond to students' needs. More narrowly, participants have become more intentional about incorporating interventions such as mindfulness and social-emotional learning into their classroom lessons to reach more students. For instance, Waverly described providing classroom lessons on "growth mindset and resiliency" and that "Often, we'll talk about

how we deal with stress? What are some coping strategies for that? How can I deal with my friends when they are not being nice to me? How can I handle that?" Similarly, Julia shared that she teaches kindergarteners their "emotional ABCs" as "kids used to come to school with an understanding of what emotions were and what feelings were what, but they don't come to school with that knowledge anymore." In addition to classroom lessons, many offered small group counseling for students needing more intensive support. As an example, Jessica provides small group counseling "just for kids who have those big emotions that don't have the skills yet." However, Habiba commented that her small groups "weren't always well received by students" due to stigma within her rural school community. Lastly, participants provide individual counseling (i.e., crisis and non-crisis counseling) for students with the most need. Hazel indicated that students may not share their internal struggles, requiring her to be "a little more creative if you want to get a better picture of what's going on," as "those days of being able to engage kids quickly, those days are gone. You must do a little more digging."

Hannah commented that more students seek her out in the hallways for individual counseling as "they don't think about necessarily coming to see us when they're in class, but then they see us, they're like, 'Oh, that's somebody I can go talk to.' And there's that relief to it, I guess." Lastly, participants noted responding to more crisis situations, particularly regarding students refusing to follow teachers' instructions and classroom outbursts. Waverly indicated that "that's happened a lot more since the pandemic as opposed to pre-pandemic."

Further, participants shared how this crisis has impacted their indirect services. Specifically, most described an uptick in student referrals for more intensive mental health services. Julia described the rise in referrals as most prominent during the 2021-2022 school year due to an increase in threats to self-harm. Some participants commented on student referral challenges. Notably, in Habiba's community, "our public services are overextended, and if you don't know who to call, where to call, and how to pin them down, it's likely that that kid or that family won't get those services." Sam's school district provides "a list of vetted local mental health agencies to expedite the referral process. However, most participants had to independently identify these services. Additionally, participants expressed increased advocacy efforts centered on meaningfully addressing

students' mental health needs. Jessica described that she successfully advocated for "calm down rooms to mitigate disruptive classroom behaviors." Others, like Barbara and Patricia, successfully advocated for more mental health providers in schools.

Next, participants reported increased utilization of data-informed practices. Luna shared that she has become more intentional about examining student behavior trends and has implemented an early warning system to proactively identify academic and behavioral concerns. Hazel indicated that her increased data usage has "helped secure funding for social emotional learning counselors and helpers, [which] helps our county and folks who write those grants in our state see that there's a huge need for this." Others described creating and disseminating needs assessments to inform both the services rendered and which students have the highest need.

Participants relayed increased community engagement in light of the broad array of student needs in their schools. To address basic needs, Wren described partnering with a local organization to provide meals during holidays. Similarly, Margaret's community has organizations that, "if I reach out and say we have a girl who needs some clothes or a boy who needs some clothes, they will shop for that kid." Participants described themselves as key contributors to developing and nurturing these critical community partnerships. These findings indicate that rural school counselors are increasingly asked to fill roles traditionally held by outside mental health providers, often without additional training or systemic support, reflecting a significant departure from professional guidelines and standards.

School Counselor Preparedness Needs

When describing the RYMHC's impact on their students, schools, and school counselor roles, participants offered insights on training needs. Specifically, many conveyed the need for more appropriate levels of mental health training for school counselors and school staff to more effectively address the increase in youth mental health challenges. Several participants deemed their school district's school counselor professional development offerings inadequate. Patricia lamented about the lackluster trainings afforded to her, stating that "we get stuck into this loop of trainings that sounds good in theory, but don't actually provide us with any functionable, workable solutions or

supports and give us zero realistic resources." Regarding school staff, participants recommended trainings that help educators recognize the signs of mental illness within children and when and how to refer students to the school counselor or other helping professional. In addition to in-service needs, participants cited a need for pre-service school counselor training centered on rurality's idiosyncrasies, as many felt ill-prepared to address mental health disparities within a rural context. Patricia mentioned that school counselors are not "prepared to understand that rural dynamics of counseling function so radically different than other areas" and that the rigid social and ethical boundaries commonly taught in counselor preparation programs are discordant with school counseling in rural settings. This theme reinforces the disconnect between counselor preparation programs and rural realities, especially regarding ethical boundaries, community integration, and the absence of nearby specialists. Table 1 provides an overview of the themes and subthemes that emerged from participant interviews, organized according to the study's guiding research questions.

Table 2

Themes and Subthemes Identified from Interviews with Rural School Counselors

Theme	Subthemes
Rising Youth Mental Health Needs	- Anxiety and Depression - Scholastic Impact
Protective and Risk Factors	**Protective Factors:** - School Community - School-Based Mental Health Access - School-Community Partnerships - Strong Sense of Community **Risk Factors:** - Substance Misuse - Logistics - Lack of Mental Health Providers - Stigma

Pandemic Impacts	- Student Impacts - Educator Impacts
School Counselors' Changing Roles	- Impact on School Counselor Role - School Counselor Preparedness Needs

Discussion

The present study sought to increase the profession's understanding of the RYMHC from the perspective of rural school counselors with at least five years of rural school counseling experience. The 15 participants provided rich, in-depth descriptions regarding student mental health, risk and protective factors, their unique roles, and preparation needs. In describing their lived experiences, participants addressed the rising youth mental health needs predating the pandemic, rural youth mental health risk and protective factors, and the crisis's impact on students, educators, and their roles. The meaning-making processes described by participants illustrate the core tenets of social constructivism, emphasizing how individuals construct knowledge and understand experiences through interactions within their social contexts (Prosek & Gibson, 2021). These narratives reveal that participants' perceptions are deeply embedded in their relationships with students, educators, families, and community members, reflecting the localized cultural values that shape rural school settings. Such situated meaning-making underscores the multiplicity of truths and lived realities that social constructivist perspectives highlight, supporting the interpretation that understanding rural youth mental health requires consideration of these dynamic social environments.

Rising Youth Mental Health Needs

Firstly, participants described a gradual increase in the breadth and depth of students' mental health needs in the years preceding the pandemic. They recounted heightened rates of anxiety and depression, often negatively impacting students' academic and behavioral performance (e.g., poor grades, amotivation, emotional regulation challenges, maladaptive conflict resolution skills). These sentiments are consistent with previous literature regarding youth mental health trends (Bitsko et al., 2022), although scant research exists within a rural context. Moreover, this study provides

details regarding *how* many behavioral challenges (e.g., maladaptive conflict resolution skills, emotional regulation challenges) can manifest in schools.

Protective and Risk Factors

Participants shed light on the youth mental health risk and protective factors located in their rural school communities. While many of the stated factors largely mirror previous research, this is the first study to explore them from both rural and school counseling perspectives. Furthermore, many of the reported factors, while aligned with existing literature, expand our understanding within a rural context. For instance, while the rural school counseling literature affirms positive, supportive school community's' importance in supporting school counselors' work (Boulden et al., 2022; Grimes, 2020), this study is unique as it addresses positive school communities within the context of rural school counseling and student wellbeing, illustrating school community factors contributing to improved student mental health (e.g., teacher retention, student surveys). Furthermore, the high teacher retention reported in this study is in stark contrast to the research on rural teacher attrition (e.g., Holme et al., 2017). Hence, it is plausible that certain rural communities may be prone to attrition, perhaps based on factors like proximity to metropolitan locales, school leadership, or affinity to rurality. Furthermore, research extolls the numerous benefits of community mental health agencies partnering with schools to support student mental health (Appling et al., 2019). As participants expressed, these additional providers helped mitigate barriers to treatment. Similarly, while school community partnerships' importance in rural settings is not new to school counseling (Boulden & Henry, 2023), the study's findings offer clear examples of partnerships in support of rural student mental health, the first to do so. Participants' insights into risk and protective factors were deeply rooted in their understanding of localized cultural norms, such as community expectations, the stigma surrounding mental health, and the value placed on self-reliance, which shaped both their interpretations and their professional responses. Their reflections demonstrate how social meaning is constructed through ongoing relationships with students, families, and community members.

The risk factors noted are indeed not foreign to rural settings. However, several novel, nuanced findings emerged that advance our understanding of these obstacles within a rural school counseling context. As an example, while previous research underscores the logistical challenges rural youth experience in accessing care (Boulden & Schimmel, 2022), this study is unique as it highlights how bureaucracy can serve as a logistical constraint. As Sam expressed, "the resources are there, but the hoops you must jump through to get a kid involved in that can be very convoluted." Hence, rigid policies, procedures, and laws (e.g., FERPA, HIPAA) likely stymie inter-agency collaborations (e.g., school—community mental health agencies), complicating students' access to qualified providers. Next, ample research corroborates stigma's presence in many rural communities, and its impact on mental health help-seeking tendencies (e.g., Crumb et al., 2019). Indeed, in the present study, most participants described widespread stigma in their rural locales, aligned with the literature. However, participants suggested increased rates of de-stigmatization amongst their student bodies. That is, rural students are becoming more open to discussing their mental health and perhaps less reluctant to engage in help-seeking behaviors. The global increased focus on mental health in the wake of the pandemic likely contributed mightily to the shift participants observed.

Pandemic Impacts

Next, when comparing student behavior and mental health before and after the pandemic, participants communicated increases in both the severity and ubiquitousness of challenging behaviors. Relatedly, participants observed more students struggling to regulate their emotions and develop healthy coping skills, commonly resulting in many aforementioned undesired behaviors. These findings largely align with the scholarship and declarations stemming from the COVID-19 pandemic (American Academy of Pediatrics, 2021; CDC, n.d.), although this is the first study to specifically explore student mental health within a rural school counseling context. The present study offered another novel insight: that the surge in youth anxiety has contributed to student anxiety on both high- and low-stakes tests and assignments (e.g., end-of-year examinations, weekly assessments) as reported by study participants. Hence, while consistent with the broader

trend of rising youth anxiety rates nationally (Bitsko et al., 2022), the present study's school-based and rural context offers a unique contribution.

Furthermore, participants shared that the crisis influenced how teachers taught. On the one hand, teachers became more sympathetic and sensitive to students' mental health needs, engaging in efforts to create safe, affirming, and supportive environments (e.g., SEL trainings, incorporating SEL into the curriculum, relationship building). On the other hand, participants purported increased teacher frustration and burnout due to factors such as increased undesirable classroom conduct and increased workloads. During the pandemic's acute stages, many educators incorporate SEL into virtual learning to address student mental health (Bhatnagar & Many, 2022). Alongside, factors such as increased expectations and challenging student behaviors have contributed to teacher disaffectedness and fatigue, prompting increased attention toward teachers' mental health (Kush et al., 2022).

School Counselors' Changing Roles

Participants remarked on the RYMHC's impact on their role and the provision of direct and indirect services, such as incorporating emotional regulation interventions (e.g., mindfulness, coping skills) into the school counseling curriculum, and increased demand for small group and individual instruction. Indirect services included increases in community mental health referrals, school counselor advocacy (i.e., advocating for school-based mental health infrastructure), data-informed decision making, and community collaboration. On a macro level, all the services mentioned align with ASCA's (2019) national model. Moreover, the direct services support previous research citing school counselors' impact on student mental health (Bleasdale et al., 2020), although the impact of participants' interventions is uncertain.

Recent research states that school counselors have become more intentional about incorporating mental health content into their comprehensive school counseling programs (Alexander et al., 2022). Improving students' coping and emotional regulation skills likely supported improved classroom conduct and positive work habits. There are several additional meaningful contributions. Firstly, regarding direct services, this study offers greater specificity regarding the lessons school counselors are incorporating into

their curricula to promote positive mental health outcomes (e.g., emotion ABCs, coping with stress, emotional regulation). Secondly, findings revealed that school counselors have engaged in increased advocacy efforts for mental health supports and infrastructure (e.g., additional counselors, calm-down rooms), albeit with varying success rates. This is promising as it signals that some school districts are perhaps more aware of the connection between academics and mental health and are thereby more committed to investing in these supports. Lastly, participants largely indicated that the array of student mental health challenges necessitates more intensive, substantive, and practical training for school counselors and school staff. Given the youth mental health crisis's disproportionate impact in rural settings (DHHS, 2021), it is logical that these school counselors desire more meaningful mental health training, pre-service and in-service, especially since they are often the only realistic mental health provider (Boulden & Schimmel, 2022). Lastly, the reported need for teacher mental health training on the signs and symptoms of mental health challenges is supported by credible sources (e.g., DHHS, 2021). However, this will likely need to be counterbalanced with teachers' increasing demands and roles.

Implications

The study's findings have implications for school counselors, school districts, and counselor educators. Participants indicated that youth are becoming more open to discussing their mental health (i.e., de-stigmatization), and are more inclined to seek mental support. Research indicates that youth are more likely to discuss their mental health challenges with peers first before conversing with a mental health provider (Geulayov et al., 2022). Thus, rural school districts, in partnership with school counselors, could explore implementing evidence-based interventions that teach students signs and symptoms of mental health challenges, how to speak with peers regarding mental health, and action steps to ensure that mental health professionals are promptly notified. This could be accomplished through widespread, building-wide trainings or mental health literacy programs such as The National Council for Mental Wellbeing's *Teen Mental Health First Aid*. Further, both *Youth Mental Health First Aid* and *Question, Persuade,*

Refer (QPR) are evidence-based trainings applicable for school settings, and the former is a promising practice for rural school communities (Boulden & Schimmel, 2024).

Rural school districts can collaborate with community and state-level mental health agencies to increase school-based mental health access. This is particularly vital for rural schools as they are often the mental health hub for students. Relatedly, rural school districts may consider creating telehealth infrastructure for students, allowing them to receive counseling services from a qualified mental health provider in another region or state. This increased access has numerous benefits. For instance, it can circumvent the dearth of rural community mental health providers common in these settings. Secondly, it can reduce barriers to care (e.g., transportation, childcare) since the student receives services while in school. Next, rural school counselors can collaborate with school partners to develop early warning systems that, in tandem with multitiered systems of support, proactively identify students demonstrating concerning academic or behavioral dispositions. Participants indicated that they experienced numerous obstacles when attempting to connect a student with community mental health support, with Sam calling the process "convoluted" and riddled with red tape. Hence, school districts and community mental health agencies must collaborate to develop streamlined procedures and protocols that align with ethical guidelines (e.g., FERPA, HIPAA) while ensuring ease of access to care. This can help ensure that the referral process itself does not serve as an additional hindrance.

The study's findings also have implications for school counselor educators and counselor education programs. Given rural school counselors' key role in collaborating with a diverse cross-section of individuals, school counselor preparation programs should include content centered on creating and sustaining effective community partnerships in rural school settings. This can be augmented by guest speakers, including rural school counselors who have engaged in collaborative efforts to address students' mental health and basic needs. Next, students can be afforded opportunities to learn about the RYMHC's impact through readings, projects, and applied experiences. This increased awareness regarding the current state of youth mental health will improve their knowledge base when transitioning into full time rural school counselor roles. Moreover, it can afford counselors-in-training opportunities to proactively brainstorm comprehensive school

counseling program implementation within the context of this growing crisis. Lastly, school and clinical mental health counseling students should be presented opportunities to learn about each other's unique roles in supporting youth mental health, including key guidelines, principles, and standards (e.g., ASCA Ethical Standards, ACA Code of Ethics). This can include having students complete interdisciplinary case studies wherein they explore how school and clinical mental health counselors might address communication barriers common in the field. This proactive brainstorming and increased knowledge can minimize obstacles to collaboration between schools and mental health agencies.

Limitations and Future Research

While our study provides meaningful context on the RYMHC's impacts, there are important limitations. Firstly, rurality's diversity may raise generalizability concerns as the findings and implications may not relate to all rural settings. Secondly, while the researchers recruited participants nationwide, participants residing in the Northeast are notably absent, further hindering generalizability. Additionally, the lack of prolonged engagement with participants could have mired trust and the authenticity of their responses.

Future research could elevate rural student voices to learn about the crisis's impact on their personal and academic development and what students believe needs to occur to advance youth mental health in rural spaces. Next, researchers could investigate the effectiveness of SEL and school-based mental health interventions in rural schools to identify which programs are most successful in improving student mental health and academic performance. Lastly, future studies might also consider applying ecological systems theory to explore how multiple systemic levels (e.g., family, school, community, policy) interact to shape rural school counselors' experiences and student mental health outcomes.

Conclusion

Rural school counselors are key contributors in fighting the RYMHC. This phenomenological study involving 15 rural school counselors across the country

pioneered research on this important topic, expanding the profession's understanding of the confluence of school counseling, mental health, and rurality, enhanced by participants' rich descriptions. These findings can help rural school counselors better address the multifaceted challenges many students experience. Furthermore, they can inform rural school counseling preparation and practice, guide future research, and support the creation of frameworks to help rural school counselors more effectively meet students' evolving needs.

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Transferability of Critical Thinking in Rural Pre-Service Teachers' Classrooms

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This qualitative study explored how pre-service teachers transferred critical thinking skills into practicums and classrooms in rural settings. Additionally, how pre-service teachers fostered critical thinking was examined. Pre-service teachers understood the reasoning behind why it was crucial to enact critical thinking in classrooms with early learners. The nurturing of human skills such as problem-solving and collaborative work was imperative in the younger years. Most participants found that, through observation and learning experiences, they were able to refine their pedagogical strategies. Therefore, the study found four themes that were produced through semi-structured interviews. Finally, how pre-service teachers fostered critical thinking by engaging their young students in active learning was seen. Thus, this study provided insight into how critical thinking is transferred from pre-service teachers to young students, and the means through which this occurs, specifically within rural settings. These findings clarify how pre-service teachers work to foster skills in young students during practicums and student teaching in rural areas.
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***Keywords*: critical thinking, pre-service teachers, student teaching, practicum, higher education**

Key skills needed for the practice of teaching were acquired during pre-service teaching courses. Such necessary skills encompass those relative to: (a) learning (such as creativity, critical thinking, working together, etc.); (b) literacy; and (c) life (including ownership) (González-Pérez & Ramírez-Montoya, 2022). With an expansive checklist of learning and teaching strategies teachers needed to embed into everyday instructional routines/practices, critical thinking became one of the lowest-ranking priorities (Karlen et al., 2023). Moreover, during pre-service teachers' college courses, less emphasis was placed on critical thinking and/or thinking about thinking (i.e., metacognition) (Dignath & Veenman, 2021). Per Magno (2010), metacognition is spurred by critical thinking, which

occurs when students employ cognitive tools and abilities in pursuit of desirable educational outcomes.

The concept of critical thinking encompassing an educational outcome could be complicated in a rural context, as familiarizing pre-service teachers with teaching in rural areas posed difficulties across a multitude of countries (Mitchell et al., 2019). Rural teaching was also commonly approached from a deficit perspective as opposed to recognizing the assets of rural contexts (Bates, 2018). Further, there was a dearth of research examining how pre-service teachers exposed students to critical thinking in a rural context. Despite this, cultivating critical thinking skills prompted individuals to become competent learners, spurring success in academics and life (Walters, 2022), regardless of one's context. Additionally, possessing critical thinking skills was one of the core competencies needed for career success (Rios et al., 2020). Thus, critical thinking was often conceptualized as the essence of educational endeavors (Magno, 2010; Siegel, 1980). However, urban students were shown to outperform their rural counterparts when it came to critical thinking (Darmaji et al., 2020). This disparity highlighted the need for skilled educators in rural areas, as recognized by Azano and Stewart (2015), who emphasized that highly adept teachers were needed to help students meet standards.

Teachers were the bearers of responsibility when it came to fostering and facilitating critical thinking skills, no matter the age group they taught (Strasser & Bresson, 2017), necessitating a multitude of skills needed to be supplied to pre-service teachers. To facilitate critical thinking in students, pre-service teachers prepared their own critical thinking through college coursework; beyond this, they also built critical thinking through their own self-directed learning (Knowles, 1980). As pre-service teachers completed their final classes, they had the opportunity to practice their recently acquired skills in real-life classrooms in accordance with situated learning theory (Lave & Wenger, 1991; Slade et al., 2019). In this view, knowledge encompassed a contextually embedded, social process. This was echoed by Darling-Hammond (2009), who articulated that teacher preparation often omitted consideration of context, which was core to effective pedagogy. The rural context shaped pre-service teachers' approaches to critical thinking by restricting professional resources; instead, there was a preference for encouraging more personalized, relationship-driven instruction (Tran et al., 2020). This became especially problematic considering that, as pre-service teachers finished their degrees, competence in teaching critical thinking was inhibited by a lack of preparation (Khalid et al., 2021).

Notably, early childhood classrooms needed teachers who were competent and confident in teaching critical thinking (Karlen et al., 2023). Early exposure to critical thinking was essential, placing greater responsibility on teacher preparation programs to prepare future educators with these skills (Williams, 2004). Embedding higher-order thinking, such as critical thinking, into early childhood classrooms is crucial for students' long-term cognitive development (O'Reilly et al., 2022).

Critical Thinking During the Early Years of Life

Brain development starts *in utero* (Van Den Heuvel & Thomason, 2016). Beginning at about age three, a child begins using reasoning and problem-solving skills (O'Reilly et al., 2022). To help the brain develop, facilitating higher-order thinking needs to be implanted and taught consistently throughout one's life (Immordino-Yang et al., 2019). According to the U.S. Census Bureau's (2023) data, 75.2 million children aged three years and up were enrolled in school at the end of the 2022 school year. For the year 2019, there were 9.8 million *rural* students in public elementary and secondary schools, which amounted to nearly 20% of the total student body within public schools (National Center for Education Statistics, 2023). This meant there were millions of rural children who needed to be supplied with critical thinking skills.

The more exposure to critical thinking environments, the greater the magnitude of higher-order thinking occurs (Swartz, 2004). Swartz (2004) espouses that the benefit of critical thinking skills for younger learners is the capacity in which those learners could build off prior knowledge. The earlier an individual is exposed to reasoning and problem-solving, the better, as executive functioning is core to brain development (Doebel, 2020). The role of executive function in higher-order thinking includes the ability to self-regulate, which prepares the brain to be open to more complex thinking (Li et al., 2021).

Critical Thinking in Early Childhood and Adolescence

In the classroom context, an individual's environment is one of the most crucial factors for brain development (Miguel et al., 2019). Per Suryanti and Nurhuda (2021), enhancing students' critical thinking encompasses an indispensable goal for higher education. However, Tapper (2004) found that critical thinking was directly taught to students only in the initial year of higher education. Notably, Celuch and Slama (2000) found that a class format designed around critical thinking was preferred by students over a lecture-based approach. A preference for how critical thinking was taught could be affected by past exposure to critical thinking, including during adolescence.

Adolescence encompasses a notably rich time period to spur critical thinking, especially if students can devise how to develop their higher-order thinking skills (Conklin, 2018). Mislia et al. (2019) indicated that an individual, whether considered intelligent or not, should possess critical thinking skills. However, adolescents experienced issues in weighing and assigning credibility to evidence, namely in deciding whether it was high quality (Ku et al., 2019). Assessing credibility remained core as "[c]ritical thinking in the post-truth era demands that news users develop and maintain a skeptical way of knowing, and cultivate the ability to discern evidence-based and unbiased information to make sound judgments" (Ku et al., 2019, p. 1).

To help facilitate critical thinking in students, teachers of adolescent students must acknowledge the difference among higher and lower order thinking (Mislia et al., 2019). To achieve higher order thinking an individual needs to take prior knowledge and then relate or reposition said information in pursuit of addressing a problem (Lewis & Smith, 1993). Problem-based learning through questioning comprises a technique for teachers to use to focus on critical thinking skills through real-world problems for adolescent students (Dalim et al., 2022). Though critical thinking is believed to encompass an important aspect of learning, critical thinking often is not utilized to its full capacity in classrooms (Karlen et al., 2023). Further, Butcher et al. (2023) found that teachers need to know when and how to allow students to productively struggle, which is an important component of critical thinking in adolescence. In a similar vein, Yang et al. (2022) remarked that pre-service teachers are typically taught how to teach content and less of how to engage students in inquiry.

Pre-Service Teacher Perceptions of Critical Thinking in Their Classrooms

Pre-service teachers know the importance of teaching and facilitating critical thinking in the classroom, but often feel burdened by it (Dalim et al., 2022). Often, the overwhelming feeling of planning for critical thinking establishes negative pre-service attitudes toward teaching it (Janssen et al., 2019). Additionally, pre-service teachers struggle to think beyond what is taught as teacher-directed practices (Slade et al., 2019).

Du Plessis (2020) indicates that even though pre-service teachers understand the importance of critical thinking, many constraints hinder their abilities to implement it; these constraints include overcrowded classrooms, issues with students' behavior, and a lack of time. Issues for students are further complicated in rural areas, which can hold limited economic opportunities for graduates (Biddle & Azano, 2016). Adding to this, teachers' perceptions of innovative learning techniques and critical thinking determine if and how they use critical thinking strategies in classrooms (Munawaroh et al., 2018). Thus, critical thinking needs to be embedded and stressed within teacher preparation programs, including during practica.

A pre-service teacher must supplement coursework with a practicum or student teaching to be able to teach in areas such as early childhood education (Kim, 2020). In a practicum, pre-service teachers practice the knowledge and skills they attained during their teacher preparation programs. Importantly, pre-service teachers often lack teaching preparation in rural settings during practicum, despite this preparation being a potential necessity to be an effective rural teacher (Versland et al., 2020). This gap in rural-specific preparation underscores a broader concern, as Moffa and McHenry-Sorber (2018) recommend that pre-service teachers need a nuanced understanding of rurality to be prepared to teach. Accordingly, Azano and Stewart (2015) espoused: "Efforts to recruit teachers to work in rural schools are futile if those teachers are not adequately prepared to provide instruction that meets the needs of the students" (p. 1). When able to practice

in a rural classroom, pre-service teachers in rural areas feel more prepared in teaching human skills and content (Jordon, 2019). They could then design assessments, such as rubrics, to test for the acquisition of critical thinking skills.

Critical Thinking in Rubrics and Assignments

Critical thinking could be spurred through feedback. Crichton and Valdera Gil (2015) state that pre-service teachers recognize that three types of feedback give depth to their reflective practices. The three types of feedback include: (a) pre-service teachers' mentors; (b) pre-service teachers' peers; and (c) the students in the classroom where student teaching was conducted (Crichton & Valdera Gil, 2015). Further, feedback for pre-service teachers could be rubric-driven.

Rubrics are intentional tools to link outcomes with assignments regarding content and desired skills (Braun et al., 2020). Rubrics and assignments provide a guide for teachers, but, more importantly, a rubric allows for measurement of skills, such as critical thinking (Braun et al., 2020). Rubrics could also be written to allow for authentic assessment, which more closely reflects the real-world context where school-based learning could be applied (Jonsson & Svingby, 2007).

Real-World Application in Pre-Service Teacher Assignments

Pre-service teachers need reflection to spark higher-order thinking, which then allows coursework to transfer into real-world applications (Saeed & Ahmed, 2021). Specifically, "reflective practice [facilitated] the development of new knowledge, skills, and dispositions in the teacher candidates by fostering critical contemplation of actions in a real-world environment" (Slade et al., 2019, p. 2). Pre-service teachers who link fieldwork back to content are able to form deeper connections with what is being taught (Slade et al., 2019). Although teacher-directed instruction could be helpful in initial knowledge building, critical thinking relies on a student leading their own learning (Dewi & Primayana, 2019).

Willingham (2008) stated that teaching critical thinking relies upon enabling the necessary thinking at the appropriate time. Thereby, recruiting ambitious pre-service teachers who want to attain and transfer the critical thinking skills is imperative (Oyen & Schweinle, 2021), which proves challenging in a rural context. This challenge is further compounded by the issue that, in the rural U.S., teaching turnover is a struggle in schools (Nguyen, 2020).

Teaching in the Rural U.S.

Oyen and Schweinle (2021) point out that teaching in rural areas is less desirable to pre-service teachers as salaries are much lower than for their urban counterparts. Furthermore, geographical amenities such as housing and shopping are insufficient and less desirable for the new teacher workforce (Oyen & Schweinle, 2021). However,

although some challenges are present in rural schools for the workforce, learning to adapt a multiple-grade curriculum, not uncommon in a rural setting, is beneficial for all teachers (Jenkins & Cornish, 2015). Additionally, according to Tran et al. (2020), some benefits of rural schools include smaller classroom sizes, a family-like environment, and support from leadership/administration.

Given that a positive outlook towards content enhances teaching (Janssen et al., 2019), a positive work culture afforded by a rural environment could lead to a more open atmosphere to incorporate critical thinking in classrooms. Furthermore, pre-service teachers with a rural high school background are more likely to feel comfortable teaching critical thinking skills as they themselves have developed these skills (Oyen & Schweinle, 2021). Notably, embedding critical thinking into the classroom is the responsibility of the pre-service teacher, which constitutes the goal-driven component of self-directed learning (Karlen et al., 2023).

While many researchers emphasize the lack of preparation for rural teaching (Azano & Stewart, 2015; Versland et al., 2020), others highlight the unique benefits of rural environments, such as stronger community ties, smaller class sizes, and flexible, educational approaches (Tran et al., 2020; Jenkins & Cornish, 2015). This contrast suggests that rurality is not a deficit, but rather a complex setting where certain aspects of critical thinking might be enhanced (e.g., through mentorship), even as others are constrained (e.g., limited professional development). These opposing views highlight the importance of viewing rural settings not as static, but as situated learning environments, requiring a nuanced understanding of rurality, in accordance with situated learning theory, to understand how self-directed learning developed in rural pre-service teachers.

Theoretical Framework

Self-Directed Learning Theory and Situated Learning Theory

In self-directed learning, agency in the learning process occurs alongside reflection (Karlen et al., 2023). Here, an adult learner takes control over their learning and is inquisitive about the knowledge they want to learn (Knowles, 1980). Specifically, Knowles (1975) defined the concept of self-directed learning as a process in which individuals take initiative over their learning by: (a) setting learning needs; (b) arriving at learning aims; (c) recognizing resources to further learning; (d) implementing sound learning strategies; and (e) evaluating one's learning progress. In the workplace, such as a school, an employee with the characteristics of a self-directed learner, who is curious and able to solve problems, is an asset (Rios et al., 2020), which is particularly relevant to pre-service teachers, who must actively connect theoretical coursework with practical classroom teaching. Thus, self-directed learning offers a meaningful framework for examining how pre-service teachers navigate critical thinking practices before they transition into their own classroom teaching experiences, such as in rural contexts.

The level of self-directed learning depends on factors such as personal characteristics (e.g., maturity) along with sociodemographic factors (Loeng, 2020). According to Aşkın Tekkol and Demirel (2022), teacher candidates who encapsulate lifelong learning are apt to learn when they see a benefit to their development. Thus, agency over one's learning could help prompt the development of an effective teacher.

Self-directed learning is essential to pedagogy when engaging with younger minds (Evin Gencel & Saracaloğlu, 2018). If adult teachers have self-directed skills, they could be mentors to the children they teach, helping guide those students into becoming self-directed students (Nasri, 2019). Furthermore, the more ready a student is for self-directed learning, the more prepared they are for critical thinking (Turan & Koç, 2018). Additionally, self-directed learning relies on students connecting new and prior knowledge to eventually arrive at new ideas (Oyibe et al., 2015), which aligns with Magno's (2010) conception of critical thinking. However, while self-directed learning theory focuses on taking initiative over one's own learning that nurtures critical thinking, situated learning theory (Lave & Wenger, 1991) provides a complementary perspective by highlighting the contextual (e.g., rural) and social nature of learning. For pre-service teachers, especially in rural environments, learning is embedded within relationships and routines of their school community (Mazzuki, 2025). By integrating situational learning theory, this study recognized that critical thinking is nurtured by agency and developed through engagement with others in meaningful contexts.

In the present study, the perceived ability that rural pre-service teachers had in transferring critical thinking was studied along with how it was fostered in their students. Specifically, this study sought to understand pre-service teachers' perceived abilities to transfer critical thinking skills, and the means with which this was done, to the student teaching or practicum context. Given the emphasis on perception, data collection relied upon qualitative methods.

Methods

This study employed a basic qualitative research approach aimed at understanding how participants conceptualized, built, and made sense of meaning (Merriam & Tisdell, 2015). Unlike grounded theory, which seeks to build theory or case studies that focus on bounded systems, basic qualitative studies aim to understand meaning-making around a central phenomenon. This approach allowed a depth of understanding with respect to rural pre-service teachers' experiences. Specifically, rural pre-service teachers were asked about critical thinking skill transfer to their K–12 students. Namely, this study was interested in how pre-service teachers transferred critical thinking from their coursework to their student teaching/practica as well as what fostering critical thinking within their students encompassed.

This study involved interviews of pre-service teachers. A semi-structured interview approach allowed participants to describe their perceptions while permitting flexibility in

question order, allowing for probing (Merriam & Tisdell, 2015). Further, rubrics were collected from teachers to ascertain if/how critical thinking was embedded into assignments to ascertain the extent to which critical thinking was embedded within materials taught by pre-service teachers. As such, multiple data collection techniques were present in this study to help permit a more holistic view of the phenomenon undergoing examination (Merriam & Tisdell, 2015).

Sampling Criteria and Participant Selection

Students in elementary education programs at rural institutions were eligible to participate. Specifically, as the focus was on pre-service teachers' teaching experiences, participants needed to be eligible for field experiences, also known as the practicum/student teaching. In detail, field experiences were in the latter portion of teaching programs, requiring participants near the end of completing their programs. Student teaching, thus, was open to students who met degree requirements prior to junior year status. Pre-service teachers in the last two years in their courses applied learned teaching strategies in a real context, such as lesson planning and student teaching. A total of five participants were included in this study, allowing for rich, detailed descriptions of participants' experiences and perspectives, consistent with the goals of basic qualitative research (Merriam & Tisdell, 2015). Rather than aiming for broader transferability, the study prioritized a rich, detailed understanding of the process of critical thinking transfer. As Tight (2024) noted, the potential for variation in responses, even with the addition of a single participant, could vary. All participants herein attended institutions in rural portions of the Midwest.

Data Collection and Analysis

Prior to interviews, participants were asked to provide a rubric created to be used in the K–12 classroom setting. Two participants supplied their rubrics herein, limiting said analysis. Interviews then permitted the points of view of participants to be examined and understood by researchers (Patton, 2015). To help ensure participants' comfort, they were permitted to choose the locations of interviews on their side as they were conducted virtually via Zoom. Zoom was also the medium used to transcribe interviews. Upon completion of post-member checking, recordings were destroyed with pseudonyms being applied.

Data was analyzed through an inductive approach. Given this, participants' words and stories guided the eventual creation of themes (Patton, 1990). Once the data were collected, it was analyzed following thematic analysis. Specifically, Braun and Clarke's (2006) six steps of thematic analysis were followed. Familiarization with the data (step one) occurred through reading and re-reading with memoing to ensure a reflexive approach to analysis. Initial codes made by labeling phrases (step two) were then created before the search for themes, or where labels started to converge into larger patterns,

encompassed step three, which then moved to theme review (step four). Prior to arriving at themes (step five), they were also reviewed in a reflexive manner. Finally, a write-up of the findings was produced (step six), telling a larger story with the data. Beyond this, trustworthiness was embedded into the design of this study.

Trustworthiness

When considering trustworthiness, credibility, transferability, dependability, and conformability needed to be addressed (Lincoln & Guba, 1985). The data collected herein was made trustworthy using the aforementioned techniques. This process encompassed looking at the data reflexively to help ensure participants' voices were represented throughout, which was supported through credibility.

Credibility

Member checking was conducted with participants to aid in facilitating an accurate interpretation of participants' words. Lincoln and Guba (1985) remarked that member checking was "the most crucial technique for establishing credibility" (p. 314). Additionally, triangulation assists a qualitative study's credibility (Lincoln & Guba, 1986). In this study, data sources included both semi-structured interviews and rubrics, where quotes were richly incorporated.

Transferability

Geertz (1973) specified thick descriptions as a means of arriving at transferability. Thus, the data in this study provided contextual information and quotes from participants while respecting anonymity. The quotes herein allow the reader to assess additional context from participants' words, allowing further insight as to whether the researchers' findings would be applicable to a reader's context.

Dependability

Shenton (2004) remarked that dependability involved detailed reporting to help ensure that another researcher would arrive at similar results. Accordingly, an audit trail was kept throughout the research process (Lincoln & Guba, 1986). Within this audit trail, there were comments on the rationale underlying coding decisions. With memoing, reflexivity allowed for reflection on biases to help maintain a division of the researchers' and participants' voices.

Confirmability

Lincoln and Guba (1985) contend that confirmability is achieved when credibility, transferability, and dependability are embedded and realized within a line of qualitative inquiry. Collectively, this study employed layered member checks, triangulation, thick

description, an audit trail, and reflexivity. These techniques helped ensure the confirmability and the overall rigor of this study's results.

Findings

The qualitative research herein sought to understand how pre-service teachers from a rural context envisioned embedding critical thinking in their practica or student teaching. Collectively, through inductive coding, four themes were constructed. These themes encompassed: (a) modeling critical thinking; (b) active learning engagement; (c) real-world content application; and (d) cultivating human skills. The results begin with a discussion of how pre-service teachers employed critical thinking elicitation techniques that were modeled by other educators.

Modeling Critical Thinking

How pre-service teachers taught critical thinking to their students in practica was often modeled by other teachers and instructors. Morgan pointed out how modeling could occur across contexts, "I definitely have used some of the things that I have learned in my courses, in my, in my internships in the classroom now as a para [*sic*]." Notably, a few pre-service teachers provided specific examples of how they modeled their pedagogies and techniques. Here, Sam succinctly said, "I think some of the biggest ways that we've learned, and just personally, I've kind of collected observing other educators." Sam went on to give an example from an English professor, exhibiting situational learning theory:

> My English professors, they aren't really instructing how to teach at all, but because I know that's the avenue that I'm going down, I try to really take what they're doing, and say, "Okay, how could I apply this or try to observe it that way?" A big thing I've learned with those professors is that it really makes all the difference if you're excited about the material.

The emphasis on material excitement aligned with the core of self-directed learning.

Sidney had a similar example to Sam's in English, where an instructional strategy was modeled: "In our English class.... That we're in, we talk a lot about giving the students chances to think about it individually, think about it with a partner, and then actually talk... I personally use a lot of think-pair-share." A mentor teacher also shaped Jordan's teaching perspective and how that then changed the approach to critical thinking: "One of my mentor teachers...really put it in perspective for me. She helps those who help themselves first...make them think for themselves."

The effect that modeling could have on pre-service teachers was essentially captured by Sam, who articulated:

> Really good little phrases and concepts that I've held onto a lot, and I know I will use in the future from the professors. Depending on what area of the country you teach in, even the size of a town, all really impacts and contributes to the way students see the world.

In the rural context, this was especially evident because smaller schools promoted closer relationships between pre-service teachers and mentor educators, allowing for more consistent and individualized modeling of critical thinking strategies. Overall, the impact that other educators had on pre-service teachers came through in how they modeled their instruction, which Sam highlighted was especially key for rural educators to help ensure K–12 students become well-rounded. Similarly, Strasser and Bresson (2017) noted that teacher skill level affected critical thinking, facilitating skills across all age spans, particularly in the younger years. They further noted how these techniques could help students build their critical thinking and learn new perspectives. Pre-service teachers went beyond modeling to actively promote learning within their own students in the practicum.

Active Learning Engagement

Participants relayed that they employed multiple techniques to actively engage students in the learning process. Namely, pre-service teachers aimed to be student-centered, which then spurred critical thinking. In student-centered learning, students could perform individually; the teacher was more of a facilitator of the learning by coaching and consulting during the learning process (Dada et al., 2023). Sam made a point of this learning approach, “Recognizing the difference between just teaching or just instructing and then facilitating, trying to be more student-centered is really the bottom line.”

Morgan described how critical thinking was spurred in students by various interactive teaching techniques:

> I do a lot of open-ended and play-based stuff. That way they have the ability to learn more than just what I have set forth for them to learn. I ask a lot of unscripted questions when we’re doing the activities or the lessons to kind of generate some more critical thinking aspects to it.

Robin also adopted questioning techniques to facilitate deeper learning, detailing, “They have to find evidence from our examples from the book and justify their thinking why those examples fit that theme.” This was supported by Robin’s rubric, but not in a sense of deepening learning. The rubric was for a reading lesson where the maximum score of five points was awarded when students could accurately detail themes and then support that with evidence from the book being read. However, there was no deeper questioning to support the demonstration of factual evidence. This contrast between spoken intention and assessment practice suggested a gap between theoretical understanding and implementation. Dalim et al. (2022) stated that using questioning as a technique could foster critical thinking skills in learners. However, this would need to extend beyond recall, which was primarily what was occurring in Robin’s rubric. This misalignment pointed to a broader challenge among pre-service teachers: aligning instructional philosophy with practical tools like rubrics.

Additionally, Robin spoke abundantly of the need for “productive struggles” in a critical thinking environment. Robin further stressed that students needed to be provided with challenges to think and grow: “They learn more through when they find the answer themselves... If you’re just telling them...They’re not going to remember it as long as if they actually had to work it out for themselves.” Thus, it appeared that follow-up questioning took place beyond what was solely captured in the rubric. Similarly, Jordan expressed that students needed to experience frustration to learn, “It’s challenging the students to think for themselves.”

In-depth questioning could help create self-directed learners. Similarly, Dalim et al. (2022) pointed out that one of the most important aspects of critical thinking for adolescents was problem-solving, which was alluded to by Sam. Sam commented on the importance of building students’ comfort in becoming self-directed learners:

> ...[T]o me is student autonomy and student advocacy. On my side of things, trying to support them and give them a space where they can feel comfortable growing in all those ways, that takes a lot of hard work on their end. The end goal is for those students to be able to have agency over themselves and have the motivation and the good relationships with their own education and, with whatever their goals are, so that they can meet those goals.

Importantly, autonomy in learners was valued across all pre-service teachers, which aligned with self-directed learning. Independence in learning was promoted by adopting an active approach to engage students in the learning process. Thus, allowing students agency was seen as a means of building self-directed learners who would then be comfortable and confident to oversee their own learning. Ultimately, this was achieved through a student-centered approach to learning. Active learning could further be spurred by real-world content application to develop students’ critical thinking skills.

Real-World Content Application

Slade et al. (2019) articulated the importance of pre-service teachers’ real-world applications alongside their abilities to be reflective practitioners. Both rubric content and interview reflection emphasized how pre-service teachers were innovative in applying learned content to the real-world context. Jordan detailed how critical thinking was used to apply psychology coursework in teaching:

> As a para [*sic*] before I transferred to this college, psychology classes that I had to take really helped with some of my kiddos [*sic*]. I had one student that is schizophrenic, so the way that he sees the world is much different than you and I. Just the things that he would see, the hallucinations, and the voices... Really making sure and having how to guide him through the day as a third-grade boy that’s seeing and hearing stuff that’s not there, I took the strategies that I learned from my psychology class and tried it. And it worked. It was actually put in place with his [individualized education program (IEP)] teacher.

Jordan's ability to apply critical thinking centered on understanding the third-grader's unique needs, where there was a recognition of how previous content could guide an IEP. This supported how Jordan engaged in situated learning theory as similarly experienced by Sam.

Along with the classroom, Sam spoke how outside experiences helped shape her educational perspectives:

> I think I've had good professors that have taught me quite a few things, and then I think a lot of it has been, I've been very fortunate to have a lot of experience outside of my classes... The first year I was a general counselor and dropped into a whole new world I had never been in and did really well."

Sam went on to add how her perspective on educating evolved throughout experiences, "The second summer I came back as more of an administrative role where I was a program director, so I created a lot of the content and programming that we had for all of the kids...Okay, I can be a little bit more courageous, if you will, and I think it allows me to open up my view of how educating works."

Morgan detailed how coursework drove changes to how a student was completing an assignment, "In my internships, in the classroom, now as a para [*sic*]... [Who] I am working with has not tried a certain particular method." Morgan went on to detail a story to illustrate this scenario:

> I'm like, "Hey, let's give this a try, because I learned about it in school." Let's see if this is more helpful...We have a student that functions at a preschool level but is 14...We are working on letter identification with this student, and the teacher wanted to have him match the upper- and lower-case letters, but she used these [puzzle pieces]...I noticed he's not matching the letters at all...He just sees that this fits into this, and that's what makes them a match. So, I talk to my teacher about that we need to go back even earlier than this skill level, because he's not understanding that this is an upper case, this is a lower case...I was like, "We need to go back further, and there's more issues..." The teacher that I am referring to, she was going off what the teacher prior to her had first goals.

Just as pre-service teachers strived to build self-directed learners, they were able to display the same skills in their own application of content knowledge and across a myriad of situations. As Willingham (2008) remarked, timing was a key consideration for critical thinking. For pre-service teachers, whether it was knowing the right strategy to guide a student's learning or creating content, these pre-service teachers demonstrated how their own critical thinking drove their students to think critically. Thus, they were able to apply their learning to the real world. However, real-world thinking, though important, needed a complementary feature: human skills.

Cultivating Human Skills

Pre-service teachers were passionate about their craft. Jordan conveyed a joy for teaching, “I provide them opportunities to become better people. That’s like the whole reason why I wanted to teach.” These opportunities were often provided in the form of human skill development. Sam expressed how this was key throughout lesson design, “I think it’s really important to have that infused in every lesson and activity just because those more human skills are how students become better learners.” Thus, the cultivation of human skills could translate into a stronger ability to think critically. Jordan further commented on this notion:

> I hope that all the students have the ability to be kind to one another...Critical thinking is way high up there. I would maybe say that critical thinking maybe comes first, because if you or use critical thinking skills and social scenarios, it’s needed also...Social cues, body language.

Morgan expressed that while critical thinking was important, balancing this with social-emotional skills was crucial for success:

> Some major skills at that age are social emotional skills. Number one, in my opinion. Because you can be academically, the brightest person on the planet, but if you can’t get along with anyone else, that makes for a very difficult and challenging for you and everyone around you.

Sidney stressed how communication was a critical skill to develop in students, “I want them to have people skills, in general, be able to have a conversation with almost anybody. That’s something very important in life.” Nonetheless, Sidney also stressed critical thinking, “It’s definitely essential for them to become critical thinkers, cause [*sic*] it helps you later in life...Think about how you’re going to pay this next month’s bill. Paying a bill would rely on critical thinking and, potentially, communication skills.” In a similar vein, Robin saw value in problem solving, “To keep working through and persevering with problem-solving skills...Is something I would want to stress in the future.”

As a collective, though pre-service teachers valued critical thinking, they also wanted students to have human skills. Communication and interpersonal skills were needed to work well with other human beings. As Morgan noted, even the most intelligent individual would need to be able to get along with others to be successful in life. Thus, pre-service teachers majoring in working with younger students valued them becoming well-rounded adults.

Discussion

In a rural context, while relationships may be rich, other lacking resources could inhibit pre-service teachers’ development of instructional skills like critical thinking. Despite critical thinking often being a low instructional priority for teaching (Karlen et al., 2023), pre-service teachers studied actively engaged in incorporating critical thinking for their students during practicums within the rural setting, which aligned with situated

learning theory (Lave & Wenger, 1991). For example, after observing mentor teachers who modeled pedagogy that incorporated critical thinking, pre-service teachers become more intentional about engaging students in active learning. In rural classrooms, smaller class sizes further supported this approach by enabling more one-on-one questioning, which may enhance critical thinking. This further helped provide a well-rounded perspective for rural K–12 students. Given that pre-service teachers with increased confidence in teaching critical thinking skills are more apt to teach in rural areas (Oyen & Schweinle, 2021), this could support the transfer of critical thinking skills to rural students. These findings extend self-directed learning (Knowles, 1980) by illustrating how pre-service teachers, when placed in rural contexts, actively adapt and apply learned strategies through autonomy and reflection. The pre-service teachers further fostered this in their own students by encouraging struggling or autonomy.

Further, while Slade et al. (2019) noticed that pre-service teachers struggled to think beyond pedagogy, creative content application demonstrated that pre-service teachers were able to think of skillful and student-centered ways to spark critical thinking in K–12 classrooms. In this sense, they demonstrated both critical thinking and self-directed learning, taking ownership of their learning. Thus, as opposed to feeling burdened by critical thinking as was found in (Dalim et al., 2022), pre-service teachers actively promoted critical thinking for their students. Even though a rubric could be limited to recall, follow-up questions allowed K–12 students to gain critical thinking skills. Accordingly, it is important to note that rubrics might need to be enhanced to ensure assessment of mastery over critical thinking skills. Applying Jonsson and Svingby's (2007) findings on how authentic assessment could make real-world connections, this approach could be used to help guide rubric development for teacher candidates, especially those interested in the rural context.

Additionally, pre-service teachers were intentional about viewing their students as human beings, not just academic learners. As a result, they consciously designed lessons and activities that promoted the development of human skills. In rural, tight-knit communities where relationships are central, these human skills—such as communication and collaboration—are foundational to critical thinking, which supports Strasser and Bresson's (2017) findings on emotional learning and further aligns with the social participation emphasized in situated learning theory (Lave & Wenger, 1991). Pre-service teachers valued critical thinking and understood that critical thinking did not exist in isolation but was deeply connected to other skills needed to thrive as adults. Development of such personal characteristics, which mirrored Knowles' (1980) self-directed learning framework, could help drive the development of self-regulated learners (Loeng, 2020) within rural settings. Collectively, pre-service teachers spurred critical thinking in their rural students through their own self-directed learning.

Recommendations for Practice

Moffa and McHenry-Sorber (2018) stressed the need to recognize how rurality was not a singular, uniform concept. For pre-service teachers to be prepared to foster critical thinking in rural students, especially with features such as a lack of professional development (Tran et al., 2020), several considerations need to be made:

1. "Grow Your Own" programs should be conceptualized in a way that aligns with situated learning theory. In this sense, a specific rural context should be uniquely considered to foster pedagogy that aligns with students' contextual understanding and experiences. This could be supported by having students immersed in sustained practicum placements of a variety of rural settings to understand that *rural* is a rich construct.
2. Digital technologies can permit a rich variety of teaching experiences in practicums. For example, video conferencing can be used to see what rural teaching looks like in one subject in the Midwestern U.S. Then the Southern U.S., allowing more opportunities to see how educators promote critical thinking and self-directed learning in their students. This will allow further pre-service teachers to observe and engage in reflective dialogue with educators in different rural regions.
3. Recognize the importance of relationships for the rural context and integrate this skill development into teacher preparation coursework. This recognition can help move away from deficit thinking and allow pre-service teachers to cultivate communication and human skills alongside content pedagogy. This integration can further allow for a larger mindset of collaboration to allow resource leveraging across a rural community.

Limitations and Future Research

This study sought to understand the experiences of rural pre-service teachers. As such, other contexts and institutions might have different experiences with students. Further, only two of the participants provided rubrics for analysis. Future researchers could interview and examine the rubrics of students in other contexts to see what fostering and transferring critical thinking entails. Additionally, this research focused on those who were still pre-service teachers. Future researchers could longitudinally examine what critical thinking looks like throughout time as teachers progress from their practicum experiences throughout their teaching careers. Finally, in terms of adapting materials, future researchers could examine how artificial intelligence may affect student engagement when used by pre-service teachers, as well as the resulting effect on the ability to be a self-directed learner. Collectively, this would help guide how to foster critical thinking practices to ensure the successful transfer of these skills to K–12 students.

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Rural Teachers' Experiences with a Place-Based Gifted Curriculum: A Case Study

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This qualitative case study examined teachers' experiences with a language arts curriculum implemented with gifted students in a high-poverty rural school district. The study focused on one rural Appalachian school district where 16 elementary teachers working in eight schools implemented a place-based language arts curriculum designed for third- and fourth-grade students identified as gifted. Data sources included fidelity logs, classroom observations, questionnaires, and an interview. Drawn from analytic induction and thematic coding, findings suggest that existing barriers in rural schools can influence curricular implementation and can impede students from accessing the curriculum in its entirety. Insights from this case study offer implications for practitioners, administrators, policymakers, community members, and researchers to mitigate instructional challenges and increase students' access to place-based gifted curriculum.
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***Keywords*: rural, gifted, place-based, case study, rural gifted education, critical pedagogy of place**

Giftedness occurs across all populations, and gifted programs offer enrichment opportunities for students to develop skills and talents beyond what the general curriculum provides. However, rural students are often not provided gifted services because their school does not have funding or resources for gifted education, which is not bound by a federal mandate (Kuehl et al., 2022; A. Howley et al., 2003; Floyd et al., 2011; Lewis & Boswell, 2020; Miller & Brigandi, 2020). In fact, the 2023 *Why Rural Matters Report* highlighted the startling fact that "of the 24,736 public rural schools in the United States, 10,071 (40.7%) appear not to offer any program specific to gifted students" (Showalter et al., 2023, p. 4). Hence, many rural gifted students do not have access to curricular or enrichment opportunities typical of gifted programs elsewhere, either within

the classroom or outside it (e.g., field trips to art exhibits, music concerts, science museums, or theater performances).

While school funding priorities are typically beyond the purview of teachers, it is teachers who work to meet the needs of their students every day. Therefore, understandings about teachers' experiences with curriculum and instructional implementation are essential for informed decision-making about what works to support rural gifted students. In this article, we describe a bound qualitative case study conducted to bring about an understanding of teachers' experiences and interactions with a rural place-based language arts curriculum designed for gifted third- and fourth-grade students. The focus of the study was one rural Appalachian school district (Hutton County, a pseudonym) and 16 teachers across 8 schools within the district who implemented the curriculum. The following research questions were addressed:

- How did teachers in a high-poverty rural district experience and interact with a place-based language arts curriculum designed for gifted students?
- How do the teachers characterize these experiences?
- What can teachers' experiences and perceptions teach us about the place-based curriculum and opportunities for gifted learners in rural communities experiencing poverty?

Literature Review

Definitions of rural are complex, in flux, and variant (Grant et al., 2024; Longhurst, 2021). Rural understandings are more than geographic location, more than fictionalized idyllic living, and far more than disparaging stereotypes of countryfolk accustomed to rudimentary lifeways. Yet too often, rural representations in entertainment, news, and even government policies construct a monolith where degeneration and despair beget negative imaginings. As with other stereotypes, the images construed inaccurately portray the realities and complexities of all things rural—including the people who reside there. To counter these stereotypes and move toward positive change, Biddle and colleagues (2019) called for significant and just research in rural spaces to yield integrative and potentially transferable understandings of rural contexts for inclusive

contributions to the broader field of education, and the 2022–2027 National Rural Education Association Research Agenda (2022) echoes and affirms this call.

Rural salience in education research is more than geographical grid work where populations are sparse and locations remote; rather, understanding "the essence of rural" is necessary to find ways to effectively serve students in rural settings (Biddle et al., 2019; Coladarci, 2007; Richards & Stambaugh, 2015, p. 3). Educators, policymakers, and researchers who recognize these contextual differences are better positioned to realize specific supports for various unique rural needs (Azano et al., 2025; Hamilton et al., 2008) and to strive for equity in rural education and not just for alternatives to metrocentric educational programming and policies (Eppley et al., 2018).

Rural Gifted Education

Rural gifted programming is essential for fostering the potential of advanced students, yet due to funding constraints, many rural schools only test students who have been referred by parents or teachers (whereas more resource-rich districts often administer universal screenings for all students; Callahan et al., 2022; National Association for Gifted Children, n.d.; Plucker & Callahan, 2014; Plucker & Peters, 2018). Consequently, qualified students—particularly students of color and economically disadvantaged students—tend to be overlooked (Callahan, 2005; Card & Giuliano, 2016; C. Floyd, 2023; Gray & Gentry, 2024; Hemmler et al., 2022; Kuehl et al., 2025; Pendarvis & Wood, 2009; Peters, 2022; Peters & Engerrand, 2016; Showalter et al, 2023). Often, identification of gifted students is based on standardized test scores using national norms, resulting in few identified students in rural areas (Callahan et al., 2022; Rasheed, 2020; Renzulli, 2002a, 2002b). As Reis and Renzulli (1982) contended decades ago, "traditional identification procedures... are certainly excluding large numbers of above-average pupils who, given the opportunity, are [equally] capable" (p. 620).

Education researchers have illuminated a number of additional challenges hindering rural gifted students from reaching their full potential, including the difficulty of implementing gifted instruction in rural schools given limited resources and geographic complications (Job & Babchuk, 2022; Jung et al., 2022; Miller & Brigandi, 2020). Howley and colleagues (2009) examined years of research, finding that "declining population,

persistent poverty, changing demographics, and ongoing accountability requirements" (p. 515) were factors adversely affecting rural gifted education. In many places, rural gifted students are encouraged to seek "higher" aspirations outside of their rural communities and, ultimately, to leave for more urban or suburban areas (Carr & Kefalas, 2009; Corbett, 2007; A. Howley et al., 2003; Sherman & Sage, 2011). Yet the rural community as a whole stands to benefit when gifted students develop critical thinking skills that better position them for the viable alternative of "contributing as leaders to their own communities" (A. Howley et al., 2003, p. 515), which is made possible through gifted programming that attends to the unique contexts of rural communities.

Place in the Curriculum

Curriculum is a point of inquiry for scholars working to better serve rural gifted students (e.g., Azano et al., 2017; Azano & Callahan, 2021; Kuehl et al., 2020; Kuehl et al., 2022; Kuehl & Azano, 2023) and advance the specialized field. Place-based education is a forward-thinking approach that honors and incorporates elements of community, landscape, language, and lifeworlds (C. Howley, 2003). Here, *lifeworld* encompasses the multitude of influences and complexities which exist in rural communities. Place-based education has roots in environmental education with tenets of sustainability and community viability and can be applied across content areas and grade levels (Jacobs, 2011; Smith & Sobel, 2010). Place has the potential to garner students' attention in the classroom and make meaningful curricular connections to their lives outside of the classroom (Bass & Azano, 2024; Bangert & Brooke, 2003; Smith, 2002). Not only is it possible to make the curriculum more relevant to the students' past and present: when place is specifically part of the curricula, there are opportunities for connections between the students' futures and the future of their rural communities (Azano, 2011; Corbett, 2007; McInerney et al., 2011).

Theoretical Framework

The current educational era is dominated by standardized practices that allow for the quantification of learning in ways that make it possible to doling out rewards and punishments for schools and students who do and do not perform in expected ways (Au,

2023). “In place of actual experience with the phenomenal world, educators are handed, and largely accept, the mandates of a standardized, ‘placeless’ curriculum and settle for the abstractions and simulations of classroom learning…[that] limits, devalues, and distorts local geographic experience” (Greenwood[1], 2003, p. 8). Deconstructing the power and privilege of hierarchical, imposed standards-based curricula (e.g., Eppley, 2011; Eppley et al., 2018) through place-based initiatives allows for empowerment and sustainability of rural communities (Azano, 2011; Azano et al., 2019; Greenwood, 2003).

A critical pedagogy of place (Greenwood, 2003), which merges critical pedagogy (Freire, 1970) and place-based education (e.g., Smith, 2002; Smith & Sobel, 2012), serves as the theoretical framework for the case study. In his foundational article on the subject, Greenwood argued that place-based education in practice tended to neglect critical considerations such as interrogating educational power structures and the need for collective action towards positive change. Likewise, he posited that critical pedagogy failed to fully recognize the “spatial, geographical, and contextual dimension(s)” (p. 4) of learning, especially as they relate to rural and ecological challenges. As such, Greenwood offered a critical pedagogy of place to advocate for the grounding of instruction in local contexts while also helping students consider how places are historically, socially, politically, and culturally positioned in ways that marginalize and exploit vulnerable populations. “If place-based educators seek to connect place with self and community,” he wrote, “they must identify and confront the ways that power works through places to limit the possibilities for human and non-human others. Their place-based pedagogy must, in other words, be critical” (p. 7).

The curriculum examined in this study was designed to align with a critical pedagogy of place in the way it centered place-based learning and embedded frequent prompts for students to think critically about social justice issues related to rural stereotypes and opportunities (Azano & Callahan, 2021). Correspondingly, a critical pedagogy of place provided a viable platform to negotiate curricular access and equity for rural gifted students in this study. Specifically, the research methods and analysis conducted focused on “the lived experiences of place [which] puts culture in context,

[1] Previously used the last name Gruenewald.

demonstrates the interconnection of culture and environment, and provides a locally relevant pathway for multidisciplinary inquiry and democratic participation" (Greenwood & Smith, 2010, p. 148).

Methods

Promoting PLACE

The curriculum examined is part of Promoting PLACE (Place, Literacy, Achievement, Community, and Engagement) in Rural Schools, a six-year U.S. Department of Education grant funded through the Jacob K. Javits Foundation. Co-authors Carolyn and Amy created Promoting PLACE to increase access and opportunities for rural gifted students by (a) implementing a multiple-data-point identification process based on universal screening processes utilizing local norms to identify students with high ability in the domain of language arts and (b) creating and implementing a high-quality, place-based language arts enrichment curriculum. The larger sample for the Promoting PLACE grant included 14 rural districts (seven treatment and seven control) in Virginia and Kentucky. A total of 578 students and 144 teachers participated.

Place-Based Language Arts Enrichment Curriculum

The Challenge Leading to Engagement, Achievement, and Results (CLEAR) curriculum is a comprehensive approach to gifted instruction based on proven models of depth and complexity (Kaplan, 2005), differentiated instruction (Tomlinson, 2001), and the Schoolwide Enrichment Model (Renzulli & Reis, 1985). For the larger study (Azano et al., 2017; Azano & Callahan, 2021), researchers adapted the CLEAR curriculum (Callahan et al., 2015) to emphasize place and rurality with the aim of engaging students and providing local context for the learning objectives. The curriculum consisted of four units: Poetry and Folklore for third grade and Fiction and Research for fourth grade. Place connections were embedded using resources reflecting unique aspects of the region (e.g., districts located on the eastern shore of Virginia studied poems about the sea while those located in the Blue Ridge Mountains read and analyzed poems about mountains).

Some lessons focused specifically on challenging rural stereotypes and expanding students' notions about what it means to be part of a rural community.

Each unit consisted of 16 to 20 lessons (designed for 45-minute time blocks) to be implemented over the course of a semester. All four units aligned with state standards, allowing teachers to cover the expected grade level curriculum while providing increased rigor to meet the specific needs of advanced learners. Participating teachers in the treatment districts received professional development designed to explain the overarching goals of the grant; outline the curriculum background and research framework; review the content of the language arts units; demonstrate lessons; offer instructional guidance and support for implementation; and address concerns and questions. Because of the unique service delivery models of the gifted programs across the school districts, implementation of the curriculum varied greatly among treatment districts, with some teachers teaching 1–2 lessons weekly in pullout groups and others implementing daily with all students, including those who were not identified as gifted.

Case Study Context

Hutton County was selected as the purposeful research sample for this case study because of its unique geographic location and specific education challenges (e.g., high rate of poverty, population decline, and resource limitations). Boundedness of this case study was unique in that Hutton County is literally bound geographically as a narrow, low-lying valley spanning 466 square miles nestled between rivers and bookended by towering mountain peaks in excess of 4,000 feet above sea level. Traveling to the nearest city with a population over 10,000 requires an hour-long drive through national forests.

Just over 26,500 people lived in Hutton County in 2019, or roughly a third fewer than its 1940 population, when the coal mining industry provided ample opportunities for employment. Nearly 96% of Hutton's population self-identifies as White, 2% as Black, and 2% Hispanic/Latino or combined race. According to 2018 U.S. Census Bureau data, the median income for individual households in Hutton County was just above $24,000 (as compared with the national median of $68,000), with more than 41% of the total population living below the poverty level. Nearly one-third of Hutton County adults over age 25 did not graduate from high school. Underemployment, joblessness, opioid

addiction, and access to healthcare impact Hutton County, and their ripple effects are reflected in the schools and manifest as education challenges. Yet, even as the root causes of these pervasive concerns can be connected to oppressive state and federal policies across generations, few political resources are dedicated to reversing their deleterious impacts.

Hutton County is also a community where parents and teachers care deeply about students, with some teachers juggling multiple roles and others coming out of retirement to fill teaching gaps. School and community pride is evident through the district's recently built high school, where people gather for Friday night football games and seasonal theatre productions. Laden with history, the county is one where traditions of bootlegging, coal mining, folk music, poke sallet festivals, and sorghum stir-offs are rooted. Nestled deep in the Appalachian Mountains, amid rich cultural influences, Hutton County is a storied place, and it is *this* place, its past and present, which brought us to this research.

Curriculum Implementation

Hutton County teachers implemented the rural, place-based language arts curriculum with third- and fourth-graders over two consecutive years. In Hutton County, general education teachers (n = 16) implemented the curriculum with gifted students, primarily in heterogeneous (mixed ability) classrooms. This meant teachers used the place-based curriculum with all students or split their classes, separating those identified as gifted from those not identified as gifted, often teaching two entirely different lessons within one classroom space. A full-time gifted education coordinator supported teachers serving gifted students and acted as a liaison between the district and Promoting PLACE staff.

Researcher as Instrument

This study rested on the assumption inherent to qualitative case study research "that meaning is embedded in people's experiences and . . . mediated through the investigator's own perceptions" (Merriam, 1998, p. 6). As primary investigator for this study and member of the Promoting PLACE grant team for two years prior to the study, Michelle served as a "trusted broker" (Azano & Downey, in progress) in the researcher–

participant relationship. The level of relationship-building and trust needed for qualitative studies in general is particularly important in isolated rural spaces where people may feel more reserved about welcoming newcomers to observe and potentially critique their practices. Michelle came to this research from her own rural background, having been a first-generation college student from a farming community in rural Virginia. Throughout the process of data collection and analysis, Michelle received continual support and feedback from Amy and Carolyn, co-primary investigators of Promoting PLACE who were also raised in rural communities, and Rachelle, a fellow graduate assistant deeply familiar with the grant who served as a peer reviewer throughout the study.

Data Collection

In this descriptive, heuristic, and particularistic case study (Merriam, 1998), teachers' experiences and perceptions made up the "unit of analysis" within "one particular program" (Merriam, 2002, p. 8)—the Promoting PLACE curriculum. Table 1 illustrates the four phases of "rigorous data collection" (Creswell et al., 2007, p. 248) and describes the sources of evidence and methods of ensuring trustworthiness for each phase.

Table 1

Four Phases of Data Collection

	***N*=**	**Source of Evidence**	**Description**	**Method of Ensuring Trustworthiness**
Phase One	409	Fidelity Logs	For each lesson, teachers completed a checklist containing all instructional steps; they provided brief explanations for adaptations/omissions made	Analytic memos

Phase Two	12[2]	Observer Checklist and Notes	Observers used the same checklist of instructional steps; they noted adaptations/omissions and recorded field notes	Multiple observers/interviewers (Michelle and two colleagues); Member checks with teachers
		Debriefing Session Transcripts	10–20 minutes following observations; observers asked specific follow-up questions about students' prior knowledge, perceived strengths and weaknesses of the lesson, and specific challenges experienced	
Phase Three	9[3]	Online Questionnaires	Open-ended questions about teachers' experiences with the curriculum; emailed to all 16 participants	Questions reviewed by dissertation committee
Phase Four	1	Interview Transcript	Semi-structured cognitive interview (Bartlett & Vavrus, 2017; Deismone & Le Floch, 2004) with one participant (Ms. Ellis); conducted via telephone; recorded and transcribed	Pilot interviews conducted prior to this one; peer review of questions

We examined Hutton County teachers' experiences and interactions with the curriculum using two data sources from the original grant: teachers' self-reported fidelity logs (*n* = 409) and observation documents (observer logs, field notes, and debriefing session transcripts, *n* = 12), the majority of which Michelle collected in her role as research assistant. We collected additional data specific to this study: teacher

[2] Included three observations per semester across four semesters; not all teacher participants were observed, and some teachers were observed multiple times.
[3] The timing of our request (in 2020 at the height of the COVID-19 lockdown) likely contributed to our lower-than-expected response rate.

questionnaires (*n* = 9) and a subsequent teacher interview. The use of multiple data sources allowed for data triangulation, which "decreases, negates or counterbalances the deficiencies of a single strategy, thereby increasing the scope for interpreting the findings" (Cronin, 2014, p. 26).

Data Analysis

The four phases of inductive analysis (i.e., working "from the particular to the general," Merriam & Tisdell, 2015, p. 16) of multiple data sources offered opportunities for "contextualized deep understanding[s]" (Bloomberg & Volpe, 2019, p. 105) of teachers' experiences and interactions with a unique rural gifted curriculum. With continual feedback and support from each of her co-authors, Michelle read, reread, inferentially coded, and organized data in the process of analytic induction (Erickson, 1985), looking for recurring words or phrases to generate thematic findings, especially those that related to place and criticality, given the study's intention to examine "the relationship between education and the politics of economic development," which Greenwood (2003, p. 3) highlighted as a guiding principle of a critical pedagogy of place. She repeated the process through multiple iterations, then unified the themes that became our two assertions.

Trustworthiness

The interplay among content, context, social construction of realities, and meanings were dynamic and overlapping within this study. With support from our theoretical framework, Michelle described, analyzed, and interpreted understandings about teachers' experiences with the place-based language arts curriculum using member checks, reflexivity, and memos (Lincoln & Guba, 1985) to increase truth value (Krefting, 1991). She also used "peer review or debriefing" as a means for "review of the data and research process by someone who is familiar with the research or the phenomenon being explored" (Creswell & Miller, 2000, p. 129), in this case, Amy, Carolyn, and Rachelle.

Findings

The purpose of this study was to gain an in-depth understanding (Merriam, 2009) of teachers' experiences and interactions with a specially designed place-based curriculum for gifted learners in a unique rural context. This case study has "local relevance" (Vavrus & Bartlett, 2006, p. 101) and provides understandings about how rural gifted curriculum and instruction might mitigate opportunity gaps for gifted students in marginalized rural communities, as well as how, in some cases, entrenched geographic and socioeconomic challenges may continue to impede students' access to educational opportunities. In this section, we describe two key assertions (Erickson, 1985) that emerged from the data and describe how these assertions respond to our research questions. In this section, we show how multiple sources—labeled throughout as FL (fidelity logs), OD (observation documents), Q (questionnaires), and I (interview)—offer evidentiary warrants for each assertion.

Assertion 1: Structural Barriers Influence Teachers' Experiences with the Curriculum

Teachers' implementation of the curriculum was impeded by a variety of structural barriers, or "obstacles that collectively affect a group disproportionately and perpetuate or maintain stark disparities in outcomes" (Simms et al., 2015, p. v), such as time constraints, limited availability of instructional materials, and lack of suitable academic space. These challenges were associated with students' level of access to the curriculum in that when instructional activities were modified or omitted because of them, students' opportunities for enrichment were minimized or compromised altogether.

Teachers' self-reported fidelity logs showed that adaptations were made in 85% of the lessons across the four units, the majority of which were brought about because of time constraints, material shortages, physical environment constraints, and instructional support limitations, whereby teachers resorted to "skipp[ing] big chunks" and "picking and choosing" activities from the curriculum. Rationale for teachers' selections of which activities to include or exclude were not noted in the data sources, and while modifications to the curriculum could potentially have been for the better (e.g., if the teachers had shared an anecdote about an experience in the local community to help the students

make real-world connections), omissions of activities meant students missed out on needed enrichment and activities that would potentially have contributed to greater cohesion of learning and integration of place.

Time Constraints Prevent Teachers from Delivering the Full Curriculum

A prevalent sentiment about the challenges of time was evident across the district; accountability concerns imposed upon teachers through state and federal requirements compounded these challenges. During the Folklore unit, a teacher noted, "multiple interruptions and programs at school this time of year" (FL) in her explanation for having completed only 50% of the folklore lessons; of the eight implemented lessons, she cut seven short citing time infringements. Another teacher stated there was "not enough time to do it along with everything else we are required to teach with the . . . standards. I had to adjust most lessons" (Q).

Frequently, when teachers implemented the curriculum in a whole group setting, they scaffolded lessons by filling in gaps in background knowledge to support all students' understanding of concepts, including those not identified for gifted services. For example, when teaching abstract concepts such as rhythm, rhyme, and cliché in the Poetry unit, a teacher noted that "students really struggled" (FL), so she supplemented with videos and examples to increase their understanding of these unfamiliar concepts. Citing the time it took for scaffolding in the whole group setting, she did not complete lessons with her identified-gifted students.

Ms. Ellis, a general education teacher, delivered instruction to her gifted students while her other students worked on separate learning activities in the computer lab. Looping with her students for two sequential years, she taught the third-grade curriculum in Year One and the fourth-grade curriculum in Year Two. In our interview, when asked about the nature of modifications made to the curriculum, Ms. Ellis expressed concerns about time constraints. She stated, "I had to really take a lot of things out" (I). With "30 minutes once a week, maybe twice a week on a good week" designated for gifted instruction, the logistics of moving her general education students to the computer lab and then getting gifted "kids back to [her] room to do the curriculum" resulted in lost instruction time and omission of activities (I). Ms. Ellis expressed frustration with the

situation, stating, “I felt like I was doing [the students] an injustice by just breezing through whatever the lesson was for that day” (I).

Ms. Ellis’s fidelity logs indicated instruction time was lost because of infringements such as standardized testing preparation, evacuation drills, and inclement weather. During each instructional session, Ms. Ellis worked from the beginning of each lesson through as many of the activities as she could, then started at the beginning of the next lesson in her next convening with students. As a result, approximately one-third of each lesson was left incomplete (FL), with omitted activities situated near the end of each lesson, meaning that students often missed culminating activities (e.g., creating a poetry anthology with students’ original work). This was the case for the majority of teachers who reported cutting portions of activities out of instruction, and the same pattern continued with all of the units Ms. Ellis attempted to complete during the two years she worked with the same group of students (Poetry, Folklore, and Fiction; she was unable to get to the Research unit at all because of time constraints).

Resource Shortages Prevent Teachers from Delivering the Full Curriculum

Whether tangible or intangible, the unavailability of resources interfered with the implementation of the curriculum and students’ opportunities to access it. As is the case for many districts in rural areas experiencing poverty (Azano et al., 2017), resource limitations for instructional materials in Hutton County present a consistent challenge to instruction that their better-funded suburban counterparts are less likely to face. Across all eight schools, teachers noted resource shortages such as teaching supplies (e.g., books, folders, notebooks, maps) and instructional supports (e.g., computers, internet).

Resource Limitations with Basic Classroom Supplies. At the onset of each year of Promoting PLACE, teachers were supplied with instructional materials, including journals, notebooks, pens, sticky notes, and various other items for use in teaching the four units. Additional supplies were delivered by grant staff on visits to schools when teachers requested particular items, yet teachers still noted resource shortages beyond what the grant provided (FL). For example, when activities for the Poetry and Research units required additional materials, one teacher noted, “no magazines or newspapers

readily available," and marked incomplete for activities in both the Poetry and Research units (FL). In another instance, a teacher reported there was "no board in the room" to use for whole group activities, so students had to "write on tables" in small groups instead (FL). Another teacher cited resource limitations (FL) as reasons for cutting instructional steps in 13 out of 15 attempted Folklore lessons and omitting the last two lessons of the unit altogether. Additionally, half of the teachers in the study taught the curriculum to their entire classes, meaning they taught students at a variety of ability levels across general, special, and gifted education. The addition of students not identified by the grant often resulted in material resource limitations that affected implementation. These types of resource shortfalls were noted across all units and in each of the eight schools. (It is not clear whether the teachers who saw the lack of supplies as a barrier to instruction reached out to grant personnel for their specific needs, but it was our practice to provide supplies when teachers asked for them.)

Resource Limitations with Technologies. Some lessons required students to use computers, but computer labs, typically only one per school in the district, were often unavailable for gifted instruction because the lab schedule prioritized whole-class use. Additionally, outdated equipment, slow internet connections, marked interruptions with Wi-Fi services, absence of internet, and broken equipment (e.g., unusable keyboards, monitors, and smart boards) were consistent technological hurdles (FL, OD) that precluded students' full access to the curriculum.

Resource Limitations with Books. Several times in the Folklore unit, teachers are directed to visit the school library with their students to read supplemental folktales beyond those offered in the curriculum, which were to serve as models for students to write their own tales as the unit's culminating activity. In one instance, a teacher took her students to the school library as directed in the lesson, only to find there were no folktale books in the small library collection (FL). This scarcity of folktale books was consistent across the district, and while accessing folktales online may have been an option in some schools, other schools' internet connections were so inconsistent that e-books were only accessible for intermittent periods, if at all.

Resource Limitations of Physical Environment. The Fiction unit's Writing Retreats were specific place-based activities designed to provide students with authentic opportunities to write about the world around them, including their own rural communities. During the Writing Retreats, students were to examine pictures of their local communities, talk about sensory details evident in those familiar places, write about their places, and share those ideas with their peers, as writers do. Unfortunately, students were sometimes denied the opportunity to collaborate during the Writing Retreats because, according to one teacher, there was "a space issue that did not allow for this to happen" (FL); another teacher mentioned an inability to move desks for the retreats (teachers did not indicate whether they had considered gathering students together on the floor for these collaborative experiences). Similar incidents of students missing opportunities to interact with the curriculum and with each other because of spatial limitations were noted across the data. A few teachers taught in small, shared spaces or in the back quarter of a classroom, and other teachers borrowed their colleagues' classrooms for gifted instructional space. Dilemmas related to sharing classroom space were noted, such as when teachers could not build word walls meant to display newly learned vocabulary because the areas they taught in were too small or because the walls of the borrowed classrooms were already covered.

Insights About the Prioritization of Gifted Education in Rural Schools

Wanting to learn more about teachers' reasons for adaptations or omissions, we hoped that the teacher interview with Ms. Ellis[4] would yield insights pertaining to how (or if) teachers valued the curriculum as a whole, or particular aspects of it individually. In the interview, Michelle asked, "Do you think [the Promoting PLACE curriculum] contributes to . . . or provides opportunities for learners in the rural communities?" In response, Ms. Ellis stated:

> We just live in a district where it's the basics. We strictly have the basics in elementary. You know, this was a great thing for our elementary kids because this

[4] We had hoped to conduct interviews with several teachers, but the demands of online emergency teaching during the pandemic precluded other teachers from agreeing to participate.

> group [gifted students] they don't get the recognition and they don't get the special time just for them to have the enrichment. (I)

During the interview conversation, Ms. Ellis talked about her daughter's experiences with the Hutton County gifted program. She said, "I'd say she was pulled out less than ten times from the time she was in third grade to the time she was in ninth grade" (I). Ms. Ellis indicated that gifted services had been inconsistent historically and "a problem for sure…So, this [using the Promoting PLACE curriculum] was at least something" (I), even though the 30 minutes per week allotted for gifted instruction was not enough to implement the curriculum as designed.

Throughout the interview, Ms. Ellis demonstrated a strong commitment to providing gifted students with time, attention, and instruction. She considered the Promoting PLACE curriculum valuable because "it bumped it [teaching fairy tales] up to the next level" and "included things I would've never thought to teach" (I). However, she expressed concerns about the shortcomings of teaching the curriculum lessons in a "hit or miss" fashion (I), stating, "I feel like I did them an injustice by not being able to do it better with them, and they deserve, those kids deserve to have extra things" (I). When faced with implementation challenges, she said, "I just had to learn to pick and choose what I thought I could get in and what they could do by giving them a challenge. They needed the challenge for sure" (I).

The Promoting PLACE grant ended one year prior to the interview with Ms. Ellis, and when asked about whether gifted instruction had continued, she responded, "I'm not 100% sure . . . why we don't have the gifted and talented program like it was" (that is, like it was prior to or during the Promoting PLACE grant; I). When asked about administrative support for gifted services, Ms. Ellis said that "a gifted and talented curriculum coordinator [was appointed] at the school level, [but] I know personally in our school nothing was done . . . there wasn't anything really. If there was, it was hit or miss, here or there, few and far between" (I). Indicative of the structural challenges and need for support, Ms. Ellis posited, "There's been a breakdown in the district" around students' access to gifted instruction (I).

Assertion 2: Teachers' Efforts Influence Curriculum Accessibility

During visits to Hutton County, grant staff observed teachers offering verbal enthusiasm for the curriculum, as when they eagerly participated in discussions of folklore and local oral narratives with their students. Teachers encouraged and supported their students during implementation, bridging gaps by making adjustments to lessons when needed, such as when teachers prompted students to discuss ideas aloud when there wasn't enough time for them to respond in writing to a folktale. In this section, we provide evidence from multiple data sources to demonstrate how students' access to and experiences with the curriculum were contingent upon the extra initiative teachers took to ensure implementation.

Teachers Showed Ingenuity and Enthusiasm

Despite myriad challenges, teachers demonstrated investment in their students and buy-in to the curriculum through efforts such as using their home internet connections and public libraries to search for folktales when none could be found in the school's collection or stapling lined paper together when there weren't enough journals for the whole class. One teacher reported she had "been keeping the students after school to get all the lessons in" (FL), and an observer highlighted this same teacher's efforts to supplement instruction with online videos "to fill in [foundational knowledge] gaps" when her students "didn't have a clue" about the content being taught (OD).

Referencing a lesson in the Research unit, a teacher noted her own excitement for learning. She stated, "I didn't know there could be this much information on any topic ever!" (OD). Another example of teacher enthusiasm was observed when a teacher "[got] the students pumped up to write," by reminding them that the writing was "something that you have been chomping at the bit to do."

Teachers showed enthusiasm about the place-specific lessons, with one teacher incorporating "history books to connect to place" when teaching the Fiction unit (OD). Another teacher noted she and her students "loved" the discussion of stereotypes and slang terms like "hillbillies" and "rednecks" as part of a particular Fiction unit writing activity (FL). She expressed appreciation for a gifted curriculum that afforded her students opportunities to write with their own places and experiences in mind.

Teacher enthusiasm was evident during the Poetry unit as well, with one teacher bringing in her "most favorite poem" to read aloud in class (OD). She also encouraged students to collaborate—to intentionally help each other—when additional examples of abstract nouns were needed to support students' learning in one lesson. Instead of fostering competition among her students, she promoted problem-solving as an authentic, shared learning opportunity.

Teachers Appreciated the Place-Based Curriculum

In her responses to the questionnaire, one teacher expressed appreciation for the curricular tie-ins to the local region that were embedded in the curriculum. She stated,

> We knew from the beginning this would be something our teachers and students would like considering it focused on our hometown and the things that were important here. There was general sense of excitement about having an actual curriculum that teachers could go by and students could benefit from. (Q)

Another teacher valued the place connections: "The curriculum was innovative in that it included information related to the students' home…The students really enjoyed the curriculum and found it valuable. The work was engaging and rigorous in just the right way" (Q).

Teachers expressed enthusiasm for a "new" and "different" curriculum for gifted students, with one teacher remarking, "I am thankful we were allowed to participate in this project. It provided a much-needed re-start to our gifted program" (Q). Another teacher "loved the new material and upper-level skills" (Q), and a third teacher "hated that [the Promoting PLACE curriculum] ended" (Q). Although the Promoting PLACE grant ended after implementation Year Two, the curriculum and all resources provided by the grant remained with the Hutton County school district so that teachers could, if they chose and were allowed to do so by administrators, continue using it.

Challenges Mitigated Teachers' Enthusiasm

Although teacher enthusiasm was evident, teachers also expressed concerns and insights about curriculum challenges. One teacher stated, "I felt like it was good for the students once I had figured out how to manage the time" (Q). Similarly, another teacher

stated, “When I found out that others were having to cut parts of the curriculum out too, I felt better about it. [The curriculum] was great. It was just [a lot] in a short amount of time we have to do it” (Q). While time constraints infringed on students’ engagement with Promoting PLACE activities, teachers tried to implement the units and complete as many steps in the lessons as time permitted. One teacher even “Gave up [her] planning to teach this” (Q), demonstrating an exceptional commitment to the project.

Discussion

When teachers could not complete lessons in their entirety, they reported regret over shortchanging their gifted students. However, successful implementation of gifted programming requires tangible (e.g., materials and technologies) and intangible (e.g., administrative and community support) resources. Although resource challenges influenced curriculum delivery, the challenges themselves did not totally deter teachers of gifted students, who used ingenuity to deliver the lessons to the best of their ability under the specific circumstances in which they worked. In this section, we make sense of our findings in light of the need to strengthen and enhance gifted programming in rural schools.

Systemic Barriers Disadvantage Rural Students in Communities Experiencing Poverty

The Promoting PLACE curriculum was an adaptation of an evidence-based approach for gifted instruction that was “designed around learning goals that are meaningful, important, and clear” (Callahan et al., 2015, p. 144), with earlier reports documenting its success (Azano et al., 2017; Azano & Callahan, 2021; Azano et al., 2021; Bass et al., 2020; Callahan & Azano, 2021; Kuehl et al., 2020; Kuehl et al., 2020). Azano et al. (2017) found the Promoting PLACE curriculum afforded teachers “opportunities to see talent by challenging students to think and to create beyond the parameters of the standard classroom curriculum” (p. 74). Therefore, when instructional barriers caused omissions of activities and whole lessons in Hutton County, students were denied opportunities to be challenged in the same way—to see and experience how these discrete lessons were structured to create authentic student products connected to place,

such as poems, short stories, and research projects. In Hutton County, students missed out on purposeful activities because teachers were impeded from providing students with the full scope and sequence of the curriculum. With known opportunity gaps for rural gifted students (Azano, 2014; Azano et al., 2017; Azano et al., 2019; Callahan et al., 2022; Hemmler et al., 2022; Jung et al., 2022; Plucker, 2013; Rasheed, 2020; Stambaugh & Wood, 2015), students' inability to access the full gifted curriculum because of structural barriers is a matter of equity. Specifically, it denies rural students access to lessons crafted to "address the specificities of the experiences, problems, languages, and histories that communities rely upon to construct a narrative of collective identity and possible transformation" (Greenwood, 2003, pp. 9–10), thereby reinforcing the very inequities Promoting PLACE in Rural Schools aimed to reduce.

Teachers Omitted Lesson Components Placed Near the End of Lessons

Findings suggest that curricula designed for gifted education should be tailored to the specific needs of teachers and students in high-poverty rural communities. In this study, it was notable that teachers generally started at the beginning of a lesson and concluded when the class time ended, rather than reviewing the lessons ahead of time to select its most valuable components. Perhaps a future iteration of this project could offer more guidance for lesson modifications and/or abridged versions of the lessons focusing on the most essential components for teachers who are unable to see students for the length of time needed to complete the unit.

Teachers Lacked Understanding of Alignment with State Standards

Additionally, findings reveal the need to bring about deeper understandings among teachers and school leaders of how gifted instruction does not detract from students' mastery of basic learning standards. As one teacher stated, there was "not enough time to do it along with everything else we are required to teach with the…standards." In another Promoting PLACE case study, Matthews et al. (2021) noted similar resistance from general education teachers when students were pulled out for gifted instruction. The gifted teacher reported a continual need to convince classroom teachers that she was teaching the same skills but at a more advanced level. One classroom teacher was

concerned that the students' absence from regular instruction might reflect poorly on her later on, since her own professional evaluation would be based on her students' scores on the state's end-of-year proficiency exam. The gifted teacher expressed frustration, saying, "There has got to be a better way, because we should not have to sacrifice good [gifted] instruction [because of the] fear factor from the [classroom] teacher" (p. 197).

Although the Promoting PLACE grant team provided professional development illustrating the alignment to the standards, our data suggest that a stronger emphasis was needed to show that delivering the curriculum *was* teaching the standards, and that gifted instruction does not have to conflict with preparing students for standardized tests. While test preparation has been a preoccupation among U.S. schools for decades, it can have especially detrimental impacts for students attending schools at risk for not meeting strict scoring benchmarks, which tend to be located in places like Hutton County with high incidences of poverty (Au, 2023). According to Floyd et al. (2011), test preparation is overemphasized in rural schools, with "an already small pool of resources" (p. 29) being depleted in such efforts. Gifted curriculum is designed to meet a much higher bar than states' basic standards require, and gifted rural students should not be denied access to it because school personnel are worried about negative consequences when students "miss" regular instruction to attend gifted lessons. After all, the standards "serve as a foundation to meet each student's academic needs. They are not intended to limit any child's achievement" (Plucker, 2015, p. 6).

Targeted conversations with school leaders (i.e., gifted coordinators and principals) may be necessary to better equip them to alleviate the pressure teachers feel to forgo gifted lessons in favor of test preparation, because teachers who provide gifted instruction should not have to prove gifted students need high-quality, rigorous instruction. From practitioners to leaders in education, a mindset shift needs to occur in such a way that gifted instruction is prioritized, not relegated to merely an addendum or asterisk in a lesson plan.

Teachers Independently Sought Solutions to Resource Challenges

Teachers' efforts to implement the Promoting PLACE curriculum despite persistent challenges demonstrate how they valued the curriculum and their commitment to meeting

students' needs. These challenges might be mitigated in light of teachers' insights about their experiences. Teachers' perceptions and voices are invaluable resources to inform and shape instructional practices in rural gifted education.

Implications and Contributions to the Field of Rural Gifted Education

Framed by a critical pedagogy of place, which "foregrounds a narrative of local and regional politics that is attuned to the particularities of where people actually live" (Greenwood, 2003, p. 5), this case study centers on "social experience" and "human relationships" of teachers as they implemented a curriculum with their students. Greenwood's theory "challenges all educators to reflect on the relationship between the kind of education they pursue and the kind of places [they] inhabit and leave behind for future generations" (2003, p. 3). Azano & Biddle (2019) noted,

> The rural schoolteacher plays a varied, important, and socially constructed role in rural communities . . . They embody the histories and meanings of place, understand implicit culture and politics, and play a role in the very construction of schooling and influence the value of education. (p. 7)

While the teachers in this study demonstrated a commitment to the type of reflection Greenwood prescribes, it is our contention that administrators, policymakers, and researchers should likewise be tasked with the challenge. That is, while implementation barriers were observed on a local, individual teacher level, the challenges cannot be resolved by teachers alone, or even by the district. Instead, these challenges require a restructuring of how education is funded across the country. Informed policymakers can and should move beyond universal policymaking and, instead, "conceptualize rurality in policy implementation" (Sutherland and Seelig, 2021, p. 107), thereby promulgating institutional, systemic changes to benefit rural gifted students and, by extension, their communities.

Greenwood (2003) further encouraged individuals to "pursue the kind of social action that improves the social and ecological life of places, near and far, now and in the future" (p. 7). If we believe that every child deserves to grow at the rate they are able, it only makes sense to heed Hutton County teachers' understandings of the structural challenges to implementing gifted instruction in rural schools and to use their insights to inform curricular development and implementation. Teachers need support, professional

development (specifically, addressing modifications and omissions of activities in lessons), and, more broadly, training in the areas of gifted student needs as well as appropriate curriculum and instruction for gifted students. In Hutton County, only the gifted coordinator—and none of the 16 teachers—had training in providing gifted instruction prior to their participation in the Promoting PLACE grant.

This study demonstrates that the resource inequities rural schools face are undeniable. Over a two-year period, a team of grant researchers was focused on Hutton County to implement the place-based curriculum. The team provided resources, professional development, and step-by-step lesson plans, yet rural students still faced opportunity gaps because they did not have a deep source of library books, access to computer labs, adequate broadband services, and sufficient learning spaces. These inequities are not only unfair to individual students, but they also disadvantage rural communities. Howley et al. (2009) asserted the benefits of developing critical thinking skills in rural gifted programs as a means for students to better "understand the value of contributing as leaders to their own communities" (p. 515). If more Hutton County students received gifted instruction with full access to curricula centering critical thinking skills, curiosity about the world, and self-confidence, the community would surely benefit. Skills from the Promoting PLACE curriculum, for example, would prepare students to create viable ways to revitalize and sustain their rural communities, so they could choose to live, work, and raise families there.

These exponential benefits may best be realized when rural teachers are supported in their instruction with gifted students and when action is taken to address systemic barriers. The type of action needed is not simply monetary (although funding would be beneficial); it can also be a matter of educating the school community about the needs of gifted students and policies that adversely, even if unintentionally, affect them.

Future Research in Rural Gifted Education: Thoughts for the Field

We offer several observations informed by the Hutton County case study. First, in our work, we observed a fragile system in which gifted education services and programming were sporadic, deprioritized (even if by necessity, in some cases), and very often dependent on the out-of-school efforts of dedicated teachers. To reimagine its full

potential and possibility, gifted education in rural schools would need to be fortified and prioritized. Second, strengthening state mandates and increasing state funding for gifted education, with—perhaps—an eventual push towards instituting a federal mandate, might be natural next steps in the direction of serving the needs of rural students. Third, we observed a distinct need for teacher support through professional development and opportunities for rural teachers to earn certification in gifted instruction. Finally, we believe further studies in gifted education practices in other rural contexts are needed to yield additional understandings.

Conclusion

The Promoting PLACE grant allowed the district to implement a rural-specific gifted curriculum with their students, but in doing so, it revealed pronounced opportunity gaps in gifted services when students' access to the curriculum was compromised. This case study supports the literature about existing opportunity gaps (Azano, 2014; Azano et al., 2017; Azano et al., 2019; Callahan et al., 2023; Hemmler et al., 2022; Jung et al., 2022; Plucker, 2013; Rasheed, 2020; Stambaugh & Wood, 2015) and provides further reason to address needs in rural gifted education with action. Considerations such as time for gifted instruction, resources to complement the curriculum, and support for place-based curricula in the schools are worthwhile investments.

This exploration of teachers' experiences and perceptions responds to Coladarci's (2007) assertion that "assorted inferences about the participants' lives, values, and sense of community" are missing elements in rural research (p. 2). We feel this case study captures the "essence" (Richards & Stambaugh, 2015) of Hutton County's rural gifted classrooms from the perspective of the teachers. Hamilton et al. (2008) contended that each rural region has "specific issues . . . which call for different policies and solutions (pp. 3–4), but some of the challenges noted by Hutton County teachers likely exist in other rural places. Drawing attention to them may lead to collaborative efforts to respond to these challenges, which in turn may increase the likelihood of yielding viable solutions. Through this deep exploration, we have strengthened our resolve to advocate for equitable instruction for advanced students in rural regions, understanding all the more that doing so is imperative for the sustainability of rural communities.

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Rural High School Chemistry Teachers' Perceptions and Implementation of Inquiry-Based

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The foundation of inquiry-based instruction is constructivism; students must *do* science to understand it. Instruction using inquiry has been written into the Next Generation Science Standards along with many state standards, like the Georgia Standards of Excellence (GSE). Teaching inquiry within a rural public high school chemistry setting has its own set of challenges unique to the rural context. Research is needed to give those educators a voice regarding teaching inquiry. This study utilized a mixed-methods design of survey and interviews to allow these rural public high school chemistry teachers a platform to discuss the feasibility of teaching standards through inquiry, planning, and professional development required to teach an inquiry-based unit, including laboratory activities. Almost two-thirds of Georgia's rural public high schools had at least one participant who completed the survey. The survey data showed that most participants used inquiry in their classrooms in some form, but desired more time and resources to implement inquiry-based instruction. Methods used to integrate inquiry in the classroom and lab varied, as expected. Many interview participants seemed to perceive students planning and carrying out investigations as reserved for wet labs. Interview data also emphasized how much time and personal funds teachers spend on their classrooms for labs and professional development. A desire for chemistry-specific professional development resonated among survey and interview participants. The findings brought forth in this dissertation can be used to inform policies regarding professional development and continued support for rural public high school teachers.

Keywords: **inquiry-based instruction, chemistry education, next generation science, social cognitive theory, rural education**

The discussion, practice, and development of curricular standards is a relatively new phenomenon that has gained traction in the past fifty years (The National Commission on Excellence in Education [NCEE], 1983). As of 2023, all 50 states have science standards; six developed their own, 20 adopted NGSS, and 24 created standards based on NGSS (NSTA, 2014). The Next Generation Science Standards (NGSS) are the

most recent push toward STEM education that shifted from content-heavy standards to inquiry-based standards. In this study, inquiry is defined, based on the description throughout the *Framework* (National Resource Council [NRC], 2012), as instruction and activities that include students planning investigations; reviewing what is already known in light of experimental evidence; using tools to gather, analyze, and interpret data; and proposing answers, explanations, and predictions. This curricular shift requires designing and implementing laboratory experiences that include inquiry as stressed within the NGSS.

Statement of the Problem:

The shift toward inquiry requires professional development (PD), monetary resources, and planning time. Rural life has its own set of challenges (Corbett & Gereluk, 2020): lower education levels of parents of rural children when compared with nonrural parents (Byun et al., 2015); fewer high-paying careers in rural areas (Thiede et al., 2018); brain drain, or a departure of talented youth leaving rural areas for more opportunities in metropolitan ones (Carr & Kefalas, 2009); and higher rates of overall poverty, concentrated poverty, and poverty that persists through generations (Brown & Schafft, 2011; Schaefer et al., 2016). Teaching a course that is resource-heavy in a school that is small, rural, or a combination of the two can be particularly challenging due to less funding available to schools in rural areas than non-rural ones (Lichter et al., 2012). Additional issues that rural public chemistry educators face, especially at smaller schools, are loss of dedicated planning time due to multiple course preparations (Goodpaster, et al., 2012), isolation from others with specific content matter expertise and experience (Burton et al., 2013; Flinders, 1988; Hanushek, et al., 2005; Rockoff, 2004;), and inequitable funding due to the majority of rural areas that are socioeconomically depressed (Showalter et al., 2023). A lack of planning time, feeling of professional isolation, and inadequate funding would be particularly detrimental to a teacher of a course, such as chemistry, that requires resources, equipment, or time to adequately teach. The present study aims to highlight the voices of chemistry teachers who are implementing inquiry-based science teaching within their rural public high school classrooms to determine whether the issues of loss of planning time, professional isolation, and inequitable funding are pervasive or benign.

Literature Review

Application of NGSS to High School Chemistry

This study focuses on the laboratory practices within the NGSS in a high school chemistry class, which can be grouped into the categories as shown in Table 1 (McNeill et al., 2015; NRC, 2012, p. 42). The Science Georgia Standards of Excellence (GSE), include three practices embedded within 14 of 36 elements of the six main standards for high school chemistry: investigating, sensemaking, and critiquing (Georgia Department of Education [GaDOE], 2016). Even though Georgia was one of the lead partners in

developing the NGSS (NGSS Lead States, 2013), it is one of many states that chose to develop its own set of standards rather than to implement the NGSS (NSTA, 2014). Both the NGSS and the GSE are officially based on and informed by the *Benchmarks for Science Literacy* and the *Framework* (GaDOE, 2016).

Table 1

NGSS Science Practices

	Science Practices	
Investigating Practices	Sensemaking Practices	Critiquing Practices
Asking questions	Developing and using models	Engaging in an argument from evidence
Planning and carrying out investigations (PCOI)	Analyzing and interpreting data	Obtaining, evaluating, and communicating information
Using mathematical and computational thinking	Constructing explanations	

The science practice emphasized in this study will be "planning and carrying out investigations" (PCOI). PCOI is the crux of performing laboratory experiments, as anything less is simply following a set of prescribed instructions and getting an expected outcome. Students involved in genuine inquiry in the form of PCOI will employ the autonomy and analysis that could move to a higher level in Bloom's Taxonomy. Therefore, as students will be planning and carrying out investigations, resources and inquiry-based learning (IBL) are required. The Instructional Leadership for Science Practices (ISLP) has a rubric for evaluating teachers that contains the eight practices; the portion containing PCOI is shown in Table 2 (McNeill et al., 2015).

Table 2

Science Practices Continuum – Students' Performance

	NGSS Practice
Level	Planning and Carrying Out Investigations (PCOI)
1	Students do not design or conduct investigations
2	Students conduct investigations, but these opportunities are typically teacher-driven. Students do not make decisions about experimental variables or investigational methods (e.g., number of trials).
3	Students design or conduct investigations to gather data. Students make decisions about experimental variables or investigational method (e.g., number of trials)

4	Students design and conduct investigations to gather data. Students make decisions about experimental variables or investigational method (e.g., number of trials)

Note: Only the Investigative Practices listed for PCOI are included in this table

Considerations with changing standards

In Georgia, many of the demands of having students' PCOI were not required as part of the previous standards, the Georgia Performance Standards (GPS), which were developed in 2006 on the heels of the 2002 legislation, No Child Left Behind (NCLB), and focused almost exclusively on content readily tested. NCLB increased federal oversight in holding schools accountable primarily using test scores, while high schools also included graduation rate; each state retained control of its own testing, with science testing mandated in 2007 (Moore, 2005). NCLB also required schools to have “highly qualified” teachers in place; a demand that small, under-resourced rural schools had difficulty meeting (Eppley, 2009; Tieken, 2014; Tieken & San Antonio, 2016). The shift from GPS to GSE meant that teachers were to have students involved in actually *doing* science through PCOI (GaDOE, 2018). While IBL, such as PCOI, has been documented to be one of the best methods for teaching science to students, there may be teachers who have spent years developing practices with little attention to IBL (NRC, 2012). A continuum may be the best way to view IBL in the classroom to show that there are multiple methods of implementation in the classroom (Capps et al., 2012; Cullen, 2015).

Table 3

Inquiry Continuum

Essential Feature	More ß----------Amount of Learner Self-Direction ----------> Less Less ß----Amount of Direction: Teacher or Material Variations-->More			
1. Learner engages in scientifically oriented questions	Learner poses a question	Learner selects among questions, poses new questions	Learner sharpens or clarifies question provided by teacher, materials, or other source	Learner engages in question provided by teacher, materials, or other source

2.	Learner gives priority to evidence in responding to questions	Learner determines what constitutes evidence and collects it	Learner directed to collect certain data	Learner given data and asked to analyze	Learner give data and told how to analyze
3.	Learner formulates explanation(s) from evidence	Learner formulates explanation after summarizing evidence	Learner guided in process of formulating explanations from evidence	Learner given possible ways to use evidence to formulate explanation	Learner provided with evidence and how to use evidence to formulate explanation
4.	Learner connects explanation(s) to scientific knowledge	Learner independently examines other resources and forms the links to explanations	Learner directed toward areas and sources of scientific knowledge	Learner given possible connections	Learner given all connections*
5.	Learner communicates and justifies explanation(s)	Learner forms reasonable and logical argument to communicate explanations	Learner coached in development of communication	Learner provided broad guidelines to use to sharpen communication	Learner given steps and procedures for communication

**Statement not in original document. Adapted from page 29 of NRC (2000).*

Types of Inquiry

The inquiry continuum includes five essential features within variations of student autonomy, as shown in Table 3. The most self-directed version has the learner communicating and justifying explanations as opposed to the teacher giving the learner steps and procedures for communication (NRC, 2000, p. 29). Banchi and Bell (2008) agree and identified four levels of inquiry: confirmation, structured, guided, and open. Students become more self-directed the closer they get to open inquiry. While students

are responsible for research, the teacher acts as the facilitator, asking probing questions to spark curiosity among the learners.

Facilitating Inquiry

This curiosity can be fostered in students using virtual representations or models, thus facilitating inquiry (Davenport et al., 2018; Donnelly et al., 2013; Winberg & Berg, 2007; Yaron et al., 2010). Students have been shown to increase learning through inquiry and problem solving, as well as PCOI, in most computer simulations, but must work within the confines of the programming (Davenport et al., 2018). Virtual presentation of inquiry activities requires technology, which may be a barrier to some schools, particularly in a rural context. There are several reasons why virtual labs could be beneficial to rural schools: lack of resources/funding creates the need to find alternatives, simulations allow for less resource-intensive labs, can perform more dangerous labs virtually, and virtual labs allow for more trial and error. Even cheaper, less resource-heavy labs take time to purchase, set up, and break down. The benefits of virtual lab simulation do not matter if the technology is not in place or updated to be able to make use of these opportunities: computers, bandwidth/Internet, and possibly subscription services for the simulation. In this way, funding is needed for both resources for labs as well as for technology for virtual labs.

Another barrier to some rural chemistry classrooms is that textbooks are too old, or, more specifically, laboratory activities provided within those textbooks do not use IBL. One school's chemistry textbook, copyrighted in 2002, contained labs and hands-on activities, but only one lab had any element of PCOI or inquiry in it (Davis, 2002). The remainder of them were "cookbook" labs: laboratory activities with very prescribed procedures where all students should get the same results by properly following the procedure. Students completing the same procedures and getting the same results takes away any semblance of inquiry or autonomy students may have in constructing their understanding of the phenomena. A survey of 571 teachers found that 55% taught at least three inquiry labs per semester where students designed the procedure (Deters, 2006). Even that does not fully satisfy having at least a minimum amount of inquiry or PCOI required for the standards and elements in NGSS or GSE, since seven elements within the GSE explicitly state that students are to PCOI. In Georgia, chemistry is not a required course and, therefore, does not have a state-wide assessment; assessments administered in chemistry are at the district or school level, and most do not require inquiry. Courses that are not required are usually accompanied by a lack of guidance. While this does allow for teacher autonomy, it also means that the way the courses are taught, regarding inquiry and PCOI, can vary widely. Incorporating IBL into chemistry curricula could reduce the variance in how the course is taught, but it requires time outside of the classroom, even for experienced teachers. Leaders in education must respect this and make sure that teachers know how the program or innovation will fulfill the tasks they are trying to accomplish (Arnett, 2018).

Rurality

The National Center for Education Statistics (NCES) breaks down the "rural" designation down into the following three categories for funding under the Rural Education Achievement Program (REAP): 41 – Rural, Fringe, 42 – Rural, Distant, and 43 – Rural, Remote. These categories are defined by their distance from urban areas (Geverdt, 2015). Schools that are farther away from urban areas have trouble finding teachers, which is exasperated by a trend in gifted education to try to set the sights of motivated students toward getting out of the rural area they grew up in and to pursue careers elsewhere, or "brain drain" (Howley, 2009; Howley et al., 2009; Lawrence, 2009). Additional research has shown that rural students are at a distinct disadvantage because of the lack of proximity to corporations and large events that attract talent. Combine this with the brain drain (Carr & Kefalas, 2009) and the documented results that show teachers in rural areas teach more course preparations (Zost, 2010), have less specialized education (Cady & Rearden, 2009), and earn less money that their urban or suburban counterparts, and what remains may be a recipe for a diminished education on the part of the rural student (Deck, 2001; Rakes et al., 2006). Schafft (2016, p. 150) states that it is "unclear how effectively schools are educating students." This is supported by rural students who do continue to higher education being more likely to experience discontinuous enrollment or delay entry than non-rural students (Byun et al., 2015).

Assets of Rurality

While the present study does bring to light many issues associated with teaching in rural areas, it is important to keep in mind that many teachers have taught in rural areas for several years and may continue to do so. This may be in large part due to the rural cultural wealth (Crumb et al., 2023) present in many of these communities. Classifying rural areas as a homogenous mixture would be an overreach and does not do justice to the similarities and differences between communities and cultures in those areas (Flora et al., 2018). Showalter (2019) estimates that almost one in five students in America attends a rural school. When compared with urban students, rural students graduate from high school at higher rates (Dahill-Brown & Jochim, 2018). Teachers in rural areas can leverage this rural cultural wealth by building upon the social and cultural capital available, which can lead to student improvement in both educational achievement and attainment (Chambers & Crumb, 2020; Means et al.,2016).

Theoretical Framework

Constructivist theory holds that knowledge is not transmitted from the teacher to the learner in the same form but is constructed through active learning by the learner (Wheatley, 1991). As far as it relates to the cognitive capacity to learn and pedagogy, constructivism has its foundation in the works of Piaget, Bruner, von Glaserfeld, Dewey,

Stanley, Gesell, and Vygotsky (Stone, 1996; Vanderstraeten, 2002). Piaget (1972), regarding abstract thought or mental capacity, described how learners would pass through various stages in their lives; this is especially applicable when looking at children actively involved in science education (Shayer & Adey, 1981). Vygotsky (1929) emphasized the social aspect when constructing knowledge and implied that there was a connection between the psychological processes and the environment inhabited by humans. These tenets of constructivism can be found throughout the NGSS and *Framework* (Bell, et al., 1995; Railean, et al., 2016; Taber, 2010).

As a result of the IBL explicit in the GSE, this research espouses a social constructivist understanding of knowledge formation upon which the methodology and data analysis of this study is built. Teachers are charged with helping facilitate learning and understanding within and between their students. Content must be learned and constructed through experiences such as inquiry and laboratory activities in the classroom: actively engaging, building, observing, and sharing information, which allows students to construct the knowledge. This is even more effective when students have taken ownership of a concept or activity, whether alone or in a group.

Ownership does not come from simply engaging in an activity; rather, it is synthesized through students engaging in real-world experiences and existing knowledge, hypothesizing and testing those hypotheses, and then drawing conclusions from their findings. Jonassen (1994, p.35) describes the learning outcomes as not predictable and that “instruction should foster, not control, the processing of the learner.” Learning occurs when students tap into their curiosity about the world; they try to understand how it works (Olusegun, 2015). Curiosity is also piqued through reflection, which allows for self-regulation and abstraction (von Glasersfeld. 1995). Critical thinking is part of knowledge construction and interpretation within a community of learners (Confrey, 1995). This community of learners is built around the ways in which scientists use language, behave, and conduct investigations (Shotter, 1995). Driver (1994, p.5) stated that in order for students to learn science, they needed to be “initiated into the culture of science.” To do this, a student must value the same kinds of discourses as the classroom teacher, or the student may feel especially disenfranchised (Moje, 1997).

Conceptual Framework

This study is viewed through an equity lens, which the National Science Foundation (NSF) defines as the “reduction in attainment differences between those traditionally underserved and their peers” (Zucker et al., 1998, p. 37). The focus on rural education is not to exclude urban and suburban populations from any inequity that occurs within those areas, but to bring attention to a lack of equity or a need for social justice in rural areas (Eppley, 2017). While extensive research has been done looking at equity as it relates to gender (Campbell et al., 2000; Grigg et al., 2006; Haslanger, 2000; Maehr & Steinkamp, 1983; Scantlebury, 1994), ethnicity (Aikenhead, 1997; Chapin, 2006; Grigg

et al., 2006; Peng & Hill, 1995; Rakow, 1985; Rodriguez, 1998), and poverty (Arambula-Greenfield, 1999; Hewson et al., 2001; Lynch, 2000; O'Sullivan et al., 2003; Rodriguez, 1998), one area that remains less charted is the equity of place.

There is a failure to recognize spatial inequity, or equity of place, as a distinct disadvantage (Roberts & Green, 2013). "Simple", "redneck", or "backwoods" are terms used by the media to stereotype rural people. With former U.S. President Obama commenting about rural citizens being "bitter" about the loss of jobs and economic stimulus in their areas, it is no wonder that the stereotypes of rural people exist and are pervasive in today's society (Seelye & Zeleny, 2008). Students in rural areas have worth and require the just distribution of education resources, which includes teacher PD related to standards-based teaching, especially, for this study, as it relates to the teaching of chemistry standards in rural public high schools (Eppley, 2017).

Unlike some urban schools, rural schools have not typically been popular recipients of philanthropy (Beeson & Strange, 2000; Howley et al., 2009; Martin, 2010; Sherburne, 2016). A lack of philanthropy combined with the cuts that have occurred in the past two decades and a serious problem in the rural American education system is visible (Ansalone, 2004). NCLB did very little to advance and help rural districts and schools (Jimerson, 2005). The Every Student Succeeds Act (ESSA) has made significant strides in ensuring that states incorporate rural funding initiatives, studies, and formulas into their plans; however, much more needs to be done, as the equity gap has existed for a long time (Brenner, 2016).

There is a vital need to look at whether the required standards are inequitable (Roberts & Green, 2013). It could also be that teachers are misinterpreting the standards. Eppley (2015) describes an instance where teachers attempting to implement Common Core State Standards exhibited what Pearson (2013, p.55) describes as a "fundamental misunderstanding of the comprehension process." While the standards being described are ELA ones, a comparison can still be made with those in science as misunderstandings of the comprehension could happen in any subject. Students who would be taught chemistry from teachers with these misconceptions may test lower on assessments and have an overall skewed view of science, in general. If teachers have a misconception in how the standards should be implemented and assessed, then this could be overcome through PD or collaboration with other teachers of the same course at the school or nearby schools. Regarding collaboration, rural schools are often small or located a distance from other schools by the very nature of being rural. Also, PD is often lacking in quantity or quality in these rural districts because of a lack of money to pay for substitutes, ability to attract people who really grab attention, or those working on cutting-edge pedagogy or technology (Dunac & Demir, 2017; Reese & Miller, 2017). More research is needed to determine teacher views of the standards themselves, along with what they feel is necessary to teach those standards, particularly from a rural public high school viewpoint in a specific field like chemistry.

Purpose and Research Question

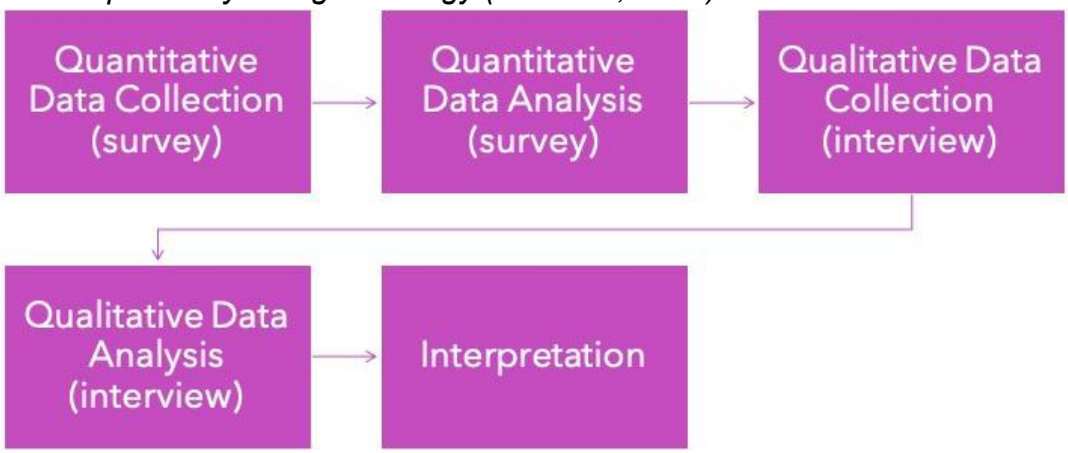
The purpose of this research is to give a voice to rural high school chemistry teachers using a curriculum with PCOI standards embedded throughout. It also to determine whether IBL, as described in the NGSS and earlier documents, is being utilized in rural public high school chemistry classrooms. The research question guiding this study is: *What are the views of rural Georgia public high school chemistry teachers regarding the feasibility of teaching GSE High School Chemistry through inquiry?*

Methodology

The ultimate goal of this study is to accurately understand and voice the views of the participants. A mixed-method design was utilized for this study for a more complete analysis of the phenomenon (Creswell, 2005; Tashakkori & Teddlie, 2003). Neither approach was dominant; both provided equal contributions in the present study. A semi-concurrent implementation of a sequential explanatory design strategy was utilized, as shown in Figure 1 (Creswell, 2003).

Figure 1

Sequential Explanatory Design Strategy (Creswell, 2003)



The design allowed the interview guide to become dynamic in response to changes in data from the survey, resulting in more in-depth analysis and questioning based on the closed-ended survey responses. Interviews expanded the breadth and depth of the survey (Towns, 2008). Surveys are best used if the data cannot be observed directly or is not available in previous research literature, and are most effective in investigating opinions and emotions, or human phenomena (Artino et al., 2014; Jann & Hinz, 2016, p. 105; Phillips, 2017). A cross-sectional design was used for the clearly defined population of rural public high school chemistry teachers in Georgia and only occurred once at a specific point in time, and the design allowed the researcher to explore potential causal

relationships, which could not be done if a descriptive design was used (Jann & Hinz, 2016, p. 112-113).

Face-to-face interviews are considered to be the most flexible in terms of complexity of the questionnaire, coverage, and even assistance of the interviewer (Leeuw & Berzelak, 2016, p. 144). A mixed-methods approach, with most data being qualitative from the interviews, interspersed with quantitative data from the survey, helped answer the research question appropriately, particularly for participants in rural schools throughout Georgia.

Survey Instrument

Several of Ladd's (2011) 5-point Likert-style questions were selected for the survey instrument to probe teacher perceptions of their resources, support, and access to resources. Questions were added regarding the use of a constructivist mindset in the participants' classroom and lab supplies. The entire survey by Ladd was not used, particularly the questions relating to teacher job satisfaction with retention. The research question was addressed using questions taken and modified or condensed from the survey *Inquiry Beliefs and Practices* used by Jeanpierre (2006), which was modeled after Burry-Stock's (1999) expert science teaching educational evaluation model (ESTEEM) survey.

Questions were used to determine the degree to which the participants utilized inquiry labs and labs in general. Those who reported not completing labs on a regular basis were asked to discuss this during the interview phase. Participants who utilized a large percentage of inquiry labs were also sought after to discuss the topic during interviews. Basic demographic information was collected during the survey to determine eligibility based on the requirements for participation. Other questions involved the schedule of classes, perceived location of school (rural, suburban, or urban), courses taught by the participant, and years taught, with the level of education. The perceived location of the school was checked after the survey to determine whether the school truly was rural, and was added to determine if there was a difference in participant response based on the perception.

Data collection of surveys was completed using Qualtrics, and quantitative data analysis using SPSS. A link, or QR code, was provided to educators via business card, photo, social media post, or email. The cards were distributed at the Annual Conference for the Georgia Science Teachers Association (GSTA). Regional Educational Service Agency (RESA) representatives in the various areas in Georgia were asked to distribute to rural schools in their areas. All information involved the adult participant(s) and their views of teaching the chemistry standards, which meant that IRB approval for each individual district was not necessary.

Context of Study & Participants

The sample for this study consisted of rural public high school chemistry teachers in Georgia who were currently teaching, or had taught, high school chemistry within three years from the date of the survey, allowing for schools with a high turnover in rural areas the ability to participate (Ansalone, 2004; Deck, 2001; Monk, 2007). The time window of three years also means teachers may have taught under the previous GPS standards before the state began rolling over to the GSE. The participants varied in terms of gender, race, and years of experience, but all were at least 18 years old to legally consent to participate in the study and held a valid teaching license from the State of Georgia. All rural schools in Georgia were invited to participate in hopes that themes of shared rural experiences might be evident. The school's demographics were checked using the NCES database of schools in Georgia (NCES, 2018). While the most used definition of rural within rural education research comes from the NCES (Thier et al., 2021), for the purposes of this study, town and rural areas were grouped together as they face similar challenges.

Survey Sample

A total of 171 participants began the survey instrument, of which only *N*=153 were deemed as eligible participants and completed the survey. One hundred twenty-eight unique rural public high schools were represented out of the 202 total that fit the research parameters in Georgia. From this population, eight participants consented to an interview during the survey portion of the study and gave pertinent contact information to accompany their response. All participants' identities remained confidential, and pseudonyms were given to each to avoid identification and possible fear of retribution for their comments.

The education level of the participants varied, as shown in Table 4, with 47.7% of survey participants holding a master's degree compared to 44% of teachers in the state of Georgia (GOSA, 2020, p. 2). Even though only 12.4% of participants indicated a doctorate or equivalent degree, 83.0% had a degree beyond a four-year bachelor's degree.

Table 4

Education Level of Survey Participants

Factor	Total Sample	Percent
Education		
n	153	n/a
Bachelor's degree	26	17.0
Master's degree	73	47.7
Specialist degree	35	22.9
Doctorate degree	19	12.4

Total	**153**	**100**

A bit more information about the survey participants that helps to add to the context is the years of chemistry teaching experience due to teaching chemistry under both the GPS and GSE. Table 5 lists the frequency and percentages of the groupings of experience.

Table 5

Survey Participants Years of Chemistry Experience

Years of Experience	Frequency	Percent
1 – 5 Years	60	39.2
6 – 10 Years	40	26.1
11 – 20 Years	33	21.6
More than 20 Years	20	13.1
Total	**153**	**100**

Most survey participants, 65.3% (*N*=100), were in their first 10 years of chemistry teaching experience, and 86.9% (*N*=133) of participants had 20 years or less of chemistry teaching experience. While the percentages of participants in their first 10 years of chemistry teaching experience is close to the percentage who held a bachelor's or master's degree, 65.3% and 64.7%, respectively, they cannot be assumed as being the same individuals; for example, one of the interview participants, Eleanor, had more than 20 years of experience while holding a bachelor's degree as her highest level of education.

Participant Selection

Purposeful sampling was used to select participants. As a result, the participants were chosen in order to maximize the variety of answers and to highlight teacher voices as to whether inquiry was taught, the percentage of labs that were inquiry, and the number of labs in general, with regard to high school chemistry. The interviewed population is described in Table 6. The survey did not measure gender as part of the demographic information, but gender determination by names traditionally associated with gender showed that less than 20% of participants had a traditionally male name, which is contrary to data that shows that 75% of STEM teachers identified as male (National Science Board, 2018). Greater gender diversity in the interview participants was desired, but attempts to bring in more male participants were not successful.

Table 6

Interview Participant Information

Pseudonym	**Gender**	**Reason for Selection**

Alice	Female	Expressed interest in helping, smaller rural school, low lab number, 10% inquiry
Bridgette	Female	Low labs; lots of commentary; pros and cons
Cathryn	Female	90% inquiry; only 4 labs
Daisy	Female	Block schedule, interesting clarification statements, low lab numbers, 20% inquiry, struggled with low-income multiple preps
Eleanor	Female	Disagrees with the way the State is mandating PLCs and how district and school are implementing them.
Felicia	Female	Rural; 80% inquiry; trouble with students planning investigations.
Gladys	Female	Low lab numbers; poor school; isolation
Hugh	Male	Male; no other chemistry teachers; new teacher; second career; low inquiry on survey; no PCOI

Participant Context

The interview participants had an average of 9.6 years of experience, with three having 15 years or more and one having more than 25 years. Comparatively, three participants only had either one or two years of experience, and five out of the eight had between one and ten years.

Four participants held a bachelor's degree, two held a master's degree, and two reported holding a specialist degree. Only one of the participants went to college intending to teach and held the only bachelor's degree in education. The other seven participants held at least a Bachelor of Science in a scientific discipline.

The interviews were recorded using Zoom Pro and then transcribed and coded using Atlas.ti (Barry, 1998). Due to the shelter-in-place order during the 2020 COVID-19 pandemic, in-person interviews were not possible (Exec. Order No. 04.01.20.01, 2020). However, Zoom interviews have been shown to yield similar results as in-person (Handgraaf, et al., 2012). The combination of teachers already being comfortable with video conferencing, along with the amount of time they spent checking email and being available online, led to a greater willingness to participate in both the survey and interviews.

The survey included an optional incentive drawing for one of ten $25 Amazon gift certificates for completing. An online random number generator was used to determine the ten winners. In addition, each interview participant was given a $25 Amazon gift certificate as compensation for their valuable time.

Data Analysis

Analyzing the data involved using open, axial, and selective coding. Codes were assigned while analysis was being done, which aimed at answering questions regarding the underlying issues, main actors involved, and roles being played, context of place, intention or purpose, and how the phenomenon occurs in the first place. After these codes were identified, axial coding was used to group them together into larger groups. Finally, selective coding was used to gather the themes and data synthesis.

Quantitative survey data was analyzed using descriptive statistics. Frequencies of participants' answers for each question were combined and analyzed using the 5-point Likert-style questions. For analysis purposes, the answers to the Likert scale questions were combined into three main categories: agree, disagree, or neutral. These ordinal data that resulted from the answers on the survey required non-parametric tests (Cooper & Johnson, 2016). A Chi-Square Test was used to analyze the quantitative data and determine the likelihood of the data resulting from chance. The majority of the quantitative data was used to determine frequencies that impacted and influenced the larger qualitative interview instrument and analysis.

Informed Consent

Informed consent for the survey was obtained digitally; it was electronically signed and dated. The survey through Qualtrics was programmed with skip logic to ensure that only those providing informed consent were able to take the survey (Swanson et al., 2014). To ensure trust and freedom to speak the truth about their workplaces, all teachers were given a pseudonym from a random name generator easily accessible online. Identifiable information such as district and school were not provided in the results of this study.

Findings

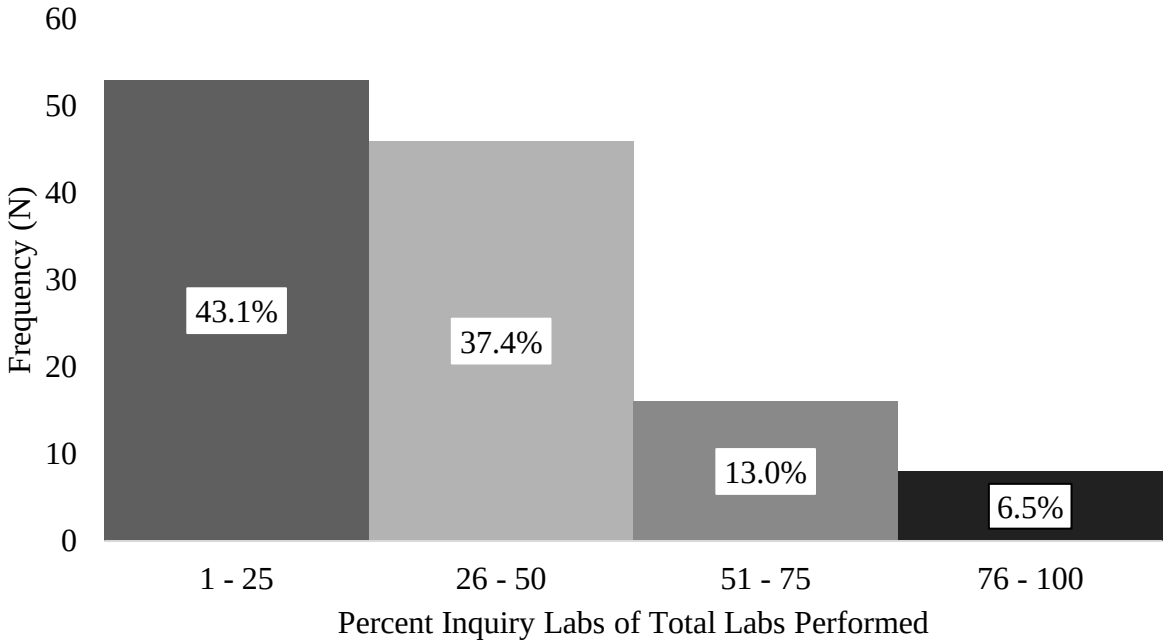
The question driving the research was as follows: *What are the views of rural Georgia public high school chemistry teachers regarding the feasibility of teaching GSE High School Chemistry through inquiry?* 80.4% (*N*=123) of participants indicated using inquiry labs in their general chemistry classroom, as opposed to AP or Honors. However, one participant stated, "I love the idea/concept of inquiry but find it's neither practical nor safe in my reality…We have limited lab facilities, lab equipment, and lab consumables,

and the third-person method of requesting supplies really slows down the materials pipeline…[inquiry] requires planning weeks ahead of time, and that just doesn't happen."

Data revealed that inquiry labs, in some form, are being utilized in the rural public high school chemistry classroom, but are perceived to make up less than half of the overall labs in the majority of participants' classrooms. Answers ranged from a minimum of 3% to a maximum of 90%, and Figure 2 shows that 43.1% (*N*=53) of participants use inquiry for between 1-25% of their labs, while 37.4% (*N*=46) of participants utilize inquiry as part of 26-50% of their overall labs. This indicates that of the participants who admitted to using inquiry in the general chemistry classroom, 80.5% (*N*=99) of those used it in half of their labs or less. Moreover, a very small percentage of teachers, 6.5% (*N*=8), indicated utilizing inquiry labs in some form in over 75% of their labs performed for the chemistry course.

Figure 2

Inquiry Labs as a Percentage of Total Labs Performed



Some participants chose to comment regarding IBL indicating that they used it most often in AP courses or honors courses, while others stated that "student to teacher ratio makes inquiry difficult." Several participants also cited lack of time as a reason why they did not engage students in as much inquiry in that "52 minutes a class is an extremely short period of time to get full lab experiences in" or that "my biggest barrier is the time constraint of grading in a timely way" and "there just isn't the kind of time I would want for more fully or even semi-fully inquiry-based labs." These quotes imply that teachers want to use IBL in chemistry, but some feel that they cannot do so within the bounds of their classroom environments.

Number of Labs Performed Per Semester

Participants were asked about the number of student labs performed during a semester. Table 7 lays out the entire data set of participants as well as splits them up into inquiry or no inquiry based on their answer to a previous question on the survey instrument. On average, teachers implemented 13.6 labs with a minimum of 2 and a maximum of 30 (Table 7).

Table 7

Number of Student Labs Performed Per Semester

Factor	Frequency	Mean	Standard Deviation	Minimum	Maximum	Mode
No Inquiry	30	11.3	6.67	3	27	4 (*N*=6)
Inquiry	123	13.6	6.29	2	30	20 (*N*=16)
Total	153	13.6	6.29	2	30	20 (*N*=17)

There was also a difference in the mean number of labs performed per semester in those who performed inquiry (13.6) and those who did not (11.3). Even though comments mentioned not having enough time to complete IBL labs, the teachers utilizing IBL labs performed, on average, 2.3 more labs per semester than those who did not utilize it. The time issue was further examined through a comparison of the schedules implemented at each school and the use of IBL labs.

School Schedules

Data concerning school schedules versus use of inquiry labs, as reported by the participants on the survey instrument, is detailed in Table 8. The majority of teachers (*N*=92) reported being on a semester long block schedule, followed by those on a traditional schedule (*N*=46).

Table 8

School Schedule vs. Use of Inquiry Labs

Schedule	Self-Reported Use of Inquiry Labs					
	Frequency			Percent		
	No	Yes	Total	No	Yes	Total
Traditional (Period)	10	36	46	21.74%	78.26	100
Block (Full Year)	1	6	7	14.29%	85.71%	100

Block (Semester)	19	73	92	20.65%	79.35%	100
Hybrid	0	8	8	0%	100%	100
All Block	20	79	99	20.20%	79.80%	100
All Non-Traditional	20	87	107	18.69%	81.31%	100

Inquiry labs were reported in 78.26% of participants on traditional schedules versus 79.35% of on a block semester schedule, revealing very little difference in inquiry usage between these two subgroups. Those on a hybrid schedule reported a 100% inquiry usage, although the sample size of *N*=8 is not large enough to make an overall conclusion, and 85.71% of participants on a year-long block schedule (*N*=8) reported using inquiry. Schedule, combined with the number of different or unique course preparations (preps), was cited by participants as a hindrance in completing laboratory experiments.

School schedules were mentioned during the interviews as possibly impacting the types and number of labs performed by students in a high school chemistry course. Alice had the following to say about inquiry labs and scheduling:

> *I have them for one semester, which is 18 weeks. And even if I were to teach, you know, give every substandard a week, it's not going to work out. So, a lot of times what we do with those "plan and carry outs [standards]' is I find a PhET, because then…they have those limitations already set.*

Eleanor stated that she did not complete inquiry labs but did complete 14 labs with her students in some form per semester. She also explained that her school recently underwent a change in schedule from traditional to block due to the vision of a new superintendent. When asked whether she noticed a difference between the two schedules in the number of labs she was able to do, she stated the following:

> *[The] only positive is lab time. And again, when the state went through such financial hardships, one of the things our county did was ask for a variance so that we could have larger classes. This past semester, I had 32 students in a gifted class and 34 in a regular chemistry class. And it would, it would give me heart palpitations, to think about lighting Bunsen burners. And, you know, having them do acid-base titrations because it's almost impossible to stand guard over 34 kids in a classroom. So, block was good, only that sometimes I could divide the labs up where half the class was doing the lab. The other half was doing something else. But then it just, you know, it dragged out forever.*

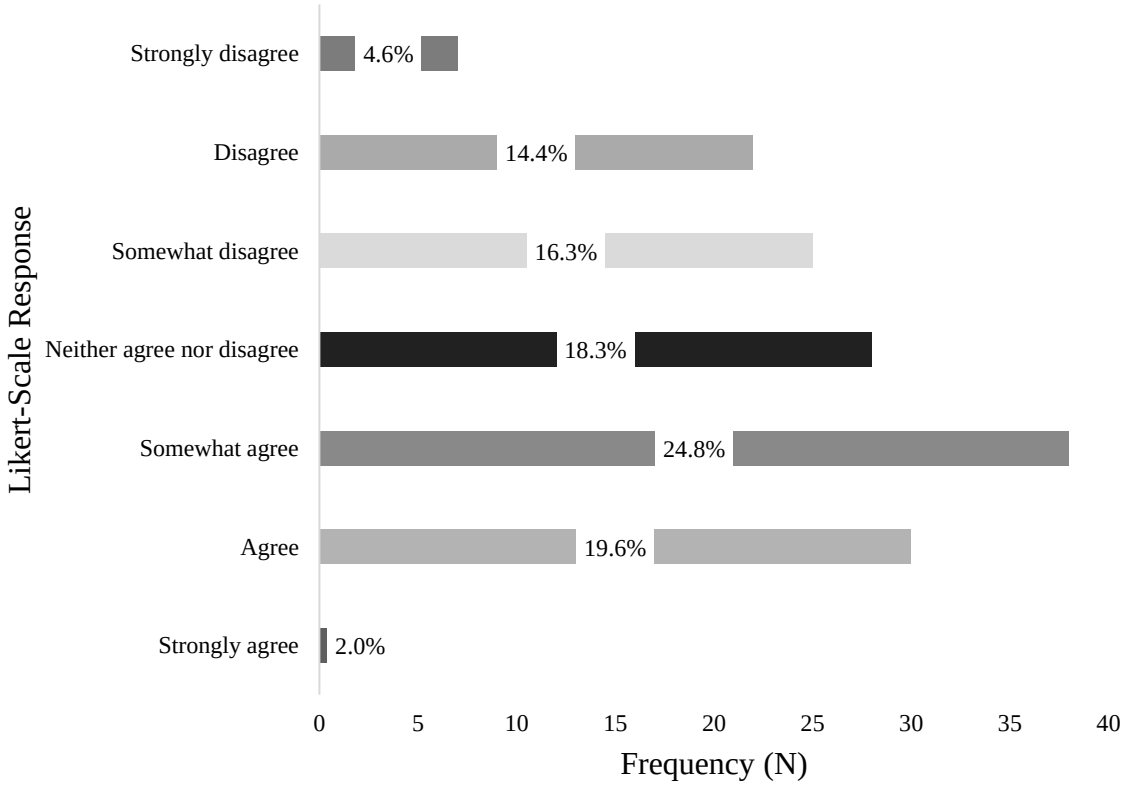
She recalled how an increased class size, combined with a changing schedule, resulted in increased teacher anxiety and stress. Her “heart palpitations” when thinking about that number of students in lab, “lighting Bunsen burners,” or “standing guard over 34 kids in a classroom” involved in labs with a significant risk, as in acid-base titrations, indicate that inquiry can be stressful. Modifications were made regarding lab instruction, but these changes were not without extra work on the teacher to overcome challenges faced regarding schedules and the number of students.

Teacher Views of Inquiry

Because the GSE explicitly states that students are to PCOI without explaining how this could be done or what this might look like in a classroom, the first portion of this section investigates participants’ views on whether students designing their own laboratory investigations is a critical component in the high school chemistry course. The views are especially critical when examining schools with a single chemistry teacher. The data for this is presented in Figure 3.

Figure 3

Students Designing Labs as Critical to the Course



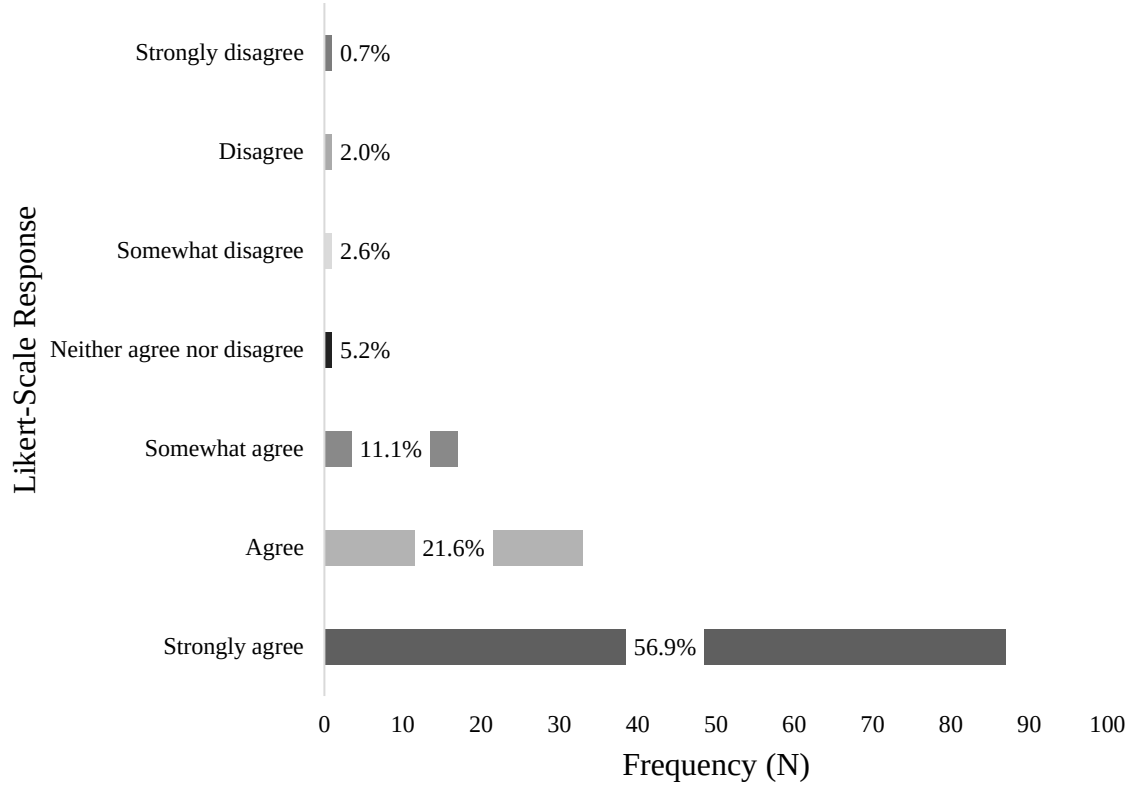
Note: The figure presents the data associated with participants' answers to the Likert-style question that began with "Please use the rating which best describes your inquiry teaching and learning beliefs for the following statements…"

46.4% (*N*=71) of participants agreed that students designing their own investigations is critical to the general chemistry course. Of note is that even though the data were grouped into three main subgroups, the extremes of "strongly agree" and "strongly disagree" did not gather many responses, with 2.0% (*N*=3) and 4.6% (*N*=7). respectively. Essentially, participants were relatively split on the importance of students devising their own laboratory investigations, with just over 10% more on the affirmative side than the negative side.

According to Figure 4, 89.6% (*N*=137) of the participants agree that student investigations are critical to chemistry. Unlike Figure 3, which shows that students coming up with their own labs had no extremes, Figure 4 reveals that 56.9% (*N*=87) strongly agreed that students carrying out investigations were critical to chemistry. Teachers in the study agree that students should carry out investigations, but have mixed opinions as to how much of the experiment students should plan.

Figure 4

Student Investigations as Critical to the Course

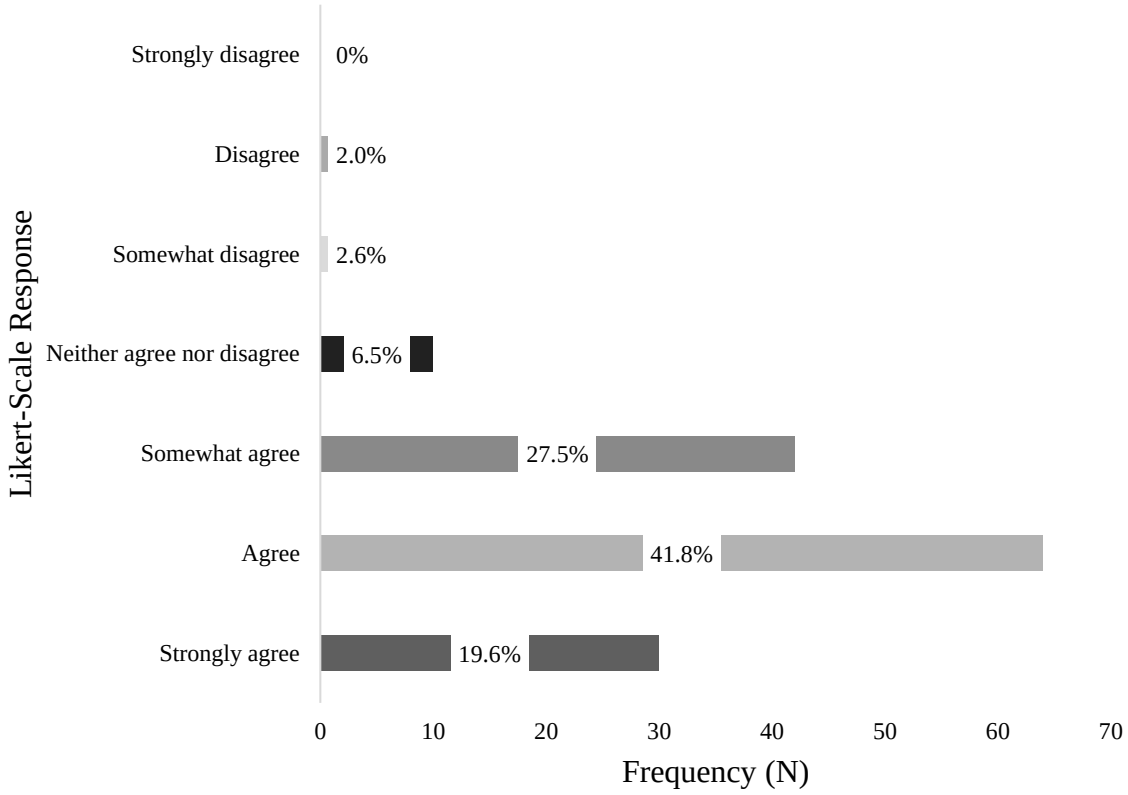


Note: The figure presents the data associated with participants' answers to the Likert-style question that began with "Please use the rating which best describes your inquiry teaching and learning beliefs for the following statements…"

Participants were asked about the time required for labs. One participant stated that students conducting their own labs took more time, but did not necessarily have to take more money if a teacher is creative. Figure 5 reveals that 88.9% (*N*=136) of participants believe that students conducting their own labs require more time and resources than regular labs.

Figure 5

Time and Resources for Inquiry vs. Regular Labs



Note: The figure presents the data associated with participants' answers to the Likert-style question that began with "Please use the rating which best describes your inquiry teaching and learning beliefs for the following statements…"

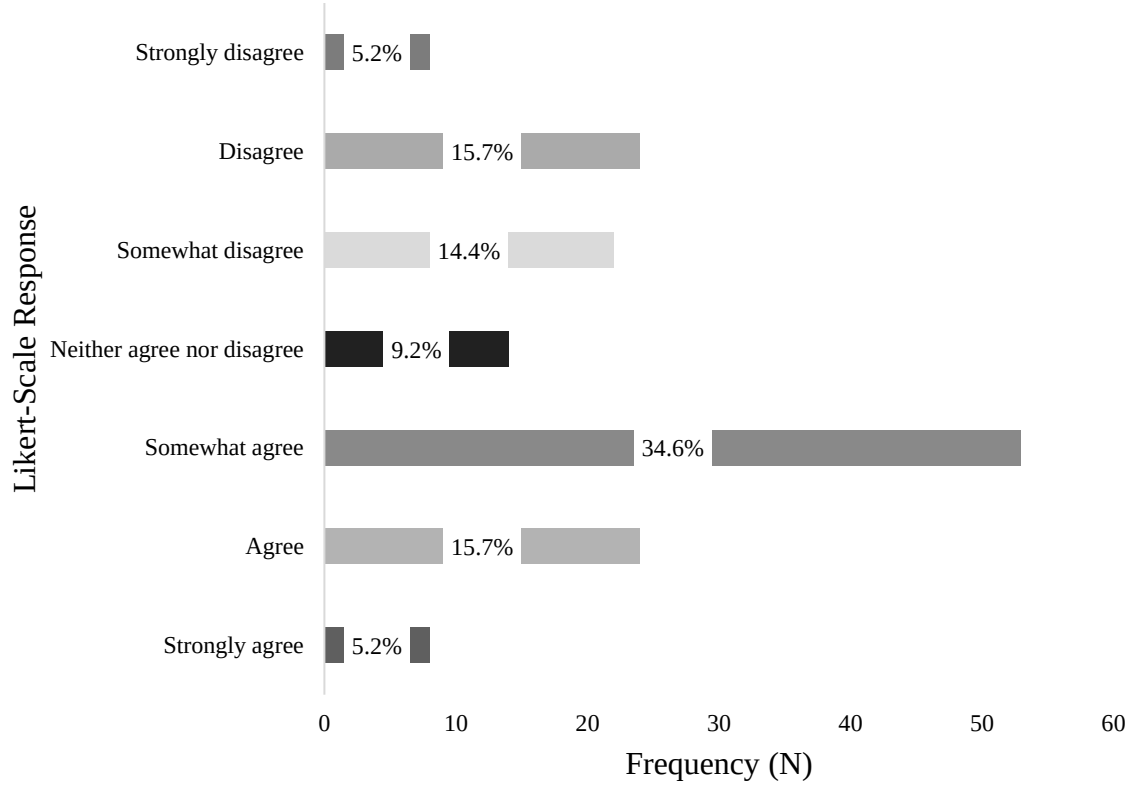
Most teacher participants believe labs are a critical component in the course, and that students conducting their own experiments require more time and resources than regular labs. Thus, the question that must be asked is whether students coming up with their own labs or learning through IBL is too time-consuming for the course? Responses were compiled in Figure 6, with 55.5% (*N*=85) participants agreeing that inquiry labs were too time-consuming for the course, while 35.3% (*N*=54) disagreed. Based on the

comments after this section, participants interpreted “inquiry” in the question prompt as open inquiry, or the type that has the greatest amount of student autonomy and the lowest amount of teacher guidance on the continuum in Table 3. One participant stated that the time constraint of teaching requires labs to “be more teacher-led” and that the teacher must “stay on task” to complete labs within the time allotted. This was echoed as another participant thought that “inquiry labs take more time and more resources,” but that the “time is better spent with more of a guided inquiry experience.”

Comments on the feasibility of teaching GSE High School Chemistry through inquiry included concerns over various issues, such as lack of time, supplies, equipment, time to grade, planning or preparation time, and student apathy. Even though these hindrances were brought up, comments also included that students are involved in some guided inquiry. One participant added that “I do a lab almost every week…for on-level” chemistry courses. Adding these comments to the quantitative data from the survey shows that most participants viewed teaching the GSE High School Chemistry through an inquiry-based approach as at least feasible.

Figure 6

Perspectives on Inquiry Labs Being Too Time-Consuming for the Constraints of the Course



Note: The figure presents the data associated with participants' answers to the Likert-style question that began with "Please use the rating which best describes your inquiry teaching and learning beliefs for the following statements…"

Even with the time constraints, Alice reported completing 12 labs per semester, of which 10% she classified as inquiry labs, which indicated an assumption that inquiry labs must be wet labs, or labs requiring chemicals within the classroom. The language of the standard does not indicate that the labs should be wet labs. Cathryn, who had the highest inquiry percentage of labs at 90% and reported having completed four inquiry labs per semester, agreed that inquiry labs were time-consuming and had the following to say when asked how long they took:

> *Well, one, what if it takes a week? One of them takes, and that's five days at one and a half hours apiece. By the time they get in there and they get their head around, it takes some [time] for them to get their head around the question.*

She described how strongly she felt about making her students think and struggle with problems and then find solutions to them, indicating that though the inquiry process is time-consuming, it leads to critical thinking and problem-solving.

Synopsis

The research question asked about Georgia rural public high school chemistry teachers' views of the feasibility of teaching GSE High School Chemistry through inquiry. The survey data show that 79.49% of participants used inquiry in their labs. However, this did not measure the frequency of the inquiry alone, and it also did not measure this against the seven PCOI standards/elements. Those who answered yes on the survey to using inquiry in their courses reported an average of 35.94% of their labs as involving inquiry. Interviews further explored the use of inquiry labs, and participant responses revealed that while each of the eight participants admitted to commonly implementing guided inquiry during their lab instruction of the seven PCOI standards/elements, only one participant utilized PCOI during chemistry labs. Even that one participant only used PCOI during four out of the seven incidents of PCOI in the GSE.

Conclusion

Data from the survey and interviews revealed that teachers are somewhat divided on whether IBL of the GSE is feasible. 80.4% of survey participants stated that they used inquiry in their classrooms, indicating that IBL in high school chemistry using the GSE is feasible. Interestingly, when the answers were cross-referenced to participants' scheduling, there was very little difference in inquiry percentages between traditional schedules and block schedules.

Several participants stated that they use Physics Education Technology (PhET) simulations to teach the standards, but the teachers also stated that students are not planning investigations, even though these online simulations can be set up in a way that

students must PCOI. However, creating the assignment and rubric for grading takes planning time before and after the activity, and adequate planning time is a resource that 46.4% of participants reported not having. This indicates that though teachers may be willing to implement PCOI more, they do not feel they have the time to do so.

Further, responses indicated that while teachers do not have adequate planning, they also do not feel they have adequate training for implementing true inquiry in their chemistry classrooms. One participant stated that the planning time was taken up by general school-mandated PD that was not content-specific. The participant's frustration with losing time for PD that was not seen as being relevant highlights an additional need for teacher autonomy in PD choice. Only 23.5% of participants received PD that they chose and for which the district paid. This is not because teachers do not want to be involved, as 90.2% of participants reported being involved or a member of a professional or teacher organization. Ultimately, PD, planning time, and autonomy in PD may all be seen as equity issues or a lack of access.

The overwhelming majority of participants indicated that they used inquiry, as defined on the survey instrument and in the *Frameworks*, within their classrooms, and they believed that students need to PCOI to get the most out of the course and to address the standards. A need to address all PCOI standards was expressed, but most teachers cited lack of time as a reason why inquiry was not completed in all the standards or elements within the GSE. An overabundance of preps can lead to less time per course, which is often found at smaller rural schools where there are fewer sections of courses to be taught, so teachers find themselves teaching multiple preps. Other factors that participants stated played a role in the lack of inquiry or students involved with PCOI included money or resources, equipment, and student apathy. While these factors can also be present in large urban schools and would not be rural-specific, rural schools were described by participants as having a number of these issues all at once. Any teacher at a small school will have to deal with multiple preps, but the lack of resources and colleagues to bounce ideas off of is compounded by the distance between schools in a rural area.

Limitations

Instrument Limitations

Using only a portion of the original survey instrument is a limitation in the study as it draws into question the integrity of the modified instrument. This could be remedied in the future by either establishing a more reliable instrument upon which multiple quantitative analysis techniques could be performed or by using an already established instrument. However, the use of in-depth narratives from participants adds reliability and validity to the current study's findings.

Definition of Inquiry as a Limitation

While the survey instrument included a definition of inquiry from *A Framework for K-12 Science Education* (NRC, 2012), there were no further questions that determined participants' own definitions of inquiry. The interview guide did not include questions regarding participant or researcher definitions of inquiry. The lack of presenting or asking for a common definition as a point of symmetry in both instruments is a point of limitation within the current study. Without the common definition being stated or asked for, the questions involving inquiry could have been interpreted in various ways regarding the survey.

Implications

Findings from this study indicate that most public high school chemistry teachers in rural Georgia report using IBL, especially when it comes to laboratory investigations. Interview responses indicate that many teachers interpret PCOI as something implemented only during wet labs. Though wet labs are one method of implementing inquiry via PCOI, they are not the only type of laboratory investigations or inquiry activities available to teachers. Online simulations are available and allow students an element of PCOI. However, even these can be as teacher-directed as a cookbook lab. The instructor is responsible for determining the desired level of inquiry using the inquiry continuum (Table 3) and can turn any cookbook lab into an inquiry lab to some degree with the appropriate amount of editing.

Scheduling and education do not have a significant influence on the use of inquiry in the classroom or for labs. Additionally, 83% of participants earned a degree greater than a four-year degree, which shows that education regarding degrees conferred upon instructors is not a limitation in the incorporation of IBL by chemistry teachers in rural areas. However, education level does not necessarily equate to dedicated PD in chemistry pedagogy. One major finding of the study is that the majority of teachers, 80.4%, report using inquiry labs in the general chemistry classroom. The issue is that there are still approximately 20% of chemistry classrooms that are not using inquiry labs, even though inquiry is written into the Science Georgia Standards of Excellence. The present study cannot say for sure in each case whether it is a lack of understanding into what inquiry is or a deficit in how to prepare labs using inquiry; either of these can be solved utilizing PD, but the PD plan must diagnose whether the issue is one or both of the deficiencies causing the lack of teachers' utilization of PCOI within the chemistry classroom.

Professional Development

PD was the focus of several survey questions to understand its impact on the implementation of inquiry in rural high school chemistry classrooms; participants in the interviews also expressed a desire to have chemistry-specific PD. Specifically, teachers

want PD to be centered around laboratory experiments that are cost-effective as well as efficient to allow students to construct their knowledge of the concepts. One potential option is for the state to provide content-specific training free of charge, made available through a virtual format; this would also allow teachers in rural areas to participate, which is something that 15.7% of survey participants and 100% of interview participants indicated they wish for. The lack of general PD, chemistry-specific PD, as well as the lack of funding all contribute to the low number of teachers who are in self-reported compliance with the PCOI wording within the standards/elements of the GSE. Changing standards without proper implementation through PD of the teachers who will be using those standards has led to the problems highlighted within the current study.

Funding

This study also revealed that schools and districts are not doing enough to provide teachers with resources for implementing chemistry-specific lab activities, as almost one-third of participants felt that outside sources of funding were required to have enough lab supplies to adequately teach the class. One participant remarked that a resourceful teacher can make it work with less, but the participant only knew this from years of experience working in a school where teachers worked together to formulate a plan for implementing more labs with fewer resources. At least two participants described fund-raising efforts through optional lab fees, while another detailed an elaborate science department candy fundraiser that stocked the labs with updated equipment and chemicals, which removes that as a barrier to inquiry.

Future Work

The current study investigated the perceptions of public high school chemistry teachers from rural areas in the state of Georgia. Participants expressed a desire to have more chemistry-specific PD on the topic of facilitating laboratory investigations, particularly for students' PCOI. These teachers would also benefit from chemistry-specific pedagogy in the areas of inquiry and facilitating students' PCOI. PD needs to be enacted in Georgia to provide these rural public high school chemistry teachers with the training that the data showed is needed for effective implementation of the GSE.

This study could be replicated throughout the United States to determine the perceptions of rural teachers from around the country; rural chemistry education could be better informed by examining possible commonalities and differences from all states in a study such as this. Future research could also include private, urban, and suburban schools in different states. Additional studies into teachers' definitions of inquiry and what is required for students to PCOI would be beneficial to those looking to provide reliable and effective PD. NGSS and states incorporating NGSS-like standards would also benefit from determining teacher perceptions of inquiry. The researcher did not look at degree level or education when considering whether to interview survey participants, but it would

be interesting to see how background or degrees impact the teaching of chemistry and other laboratory sciences.

Data from the current study shows that over 80% of participants using inquiry in the classroom is encouraging, but that excitement must be tempered when thinking about how that leaves almost 20% of participants who are not using inquiry in their classrooms. In addition, the 80% using inquiry may have different definitions of inquiry, even though a definition was provided in the survey. Discovering how teachers define inquiry would be a pivotal finding for future research. Without a standardized test in chemistry in Georgia, studies, like the present one, are needed to check in on the teachers and to give them a voice. Understanding what is truly being done in the classroom through the words of the teachers themselves is important, and identifying the needs of teachers in rural areas is part of the overall mission of providing equitable and adequate education to all students in the United States.

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Sustaining Engineering Education for Rural Contexts: Implications from a Multi-year Study

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We studied how three rural teachers continued to apply locally relevant engineering practices after a five-year nationally funded project ended, despite lacking formal support. Our research aimed to identify key factors that either aided or hindered the ongoing use of these practices in their classrooms. While the initial adoption of the practices was successful, sustaining them without formal support proved challenging. Our findings highlight that administrative support, teacher agency, and resource availability were essential factors. Furthermore, the specific rural contexts of each teacher presented unique obstacles to maintaining the benefits gained during the project. We conclude that achieving sustainable change in engineering teaching practices requires a collaborative approach that considers the differences across school and classroom environments.
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***Keywords*: rural, STEM education, professional development, locally relevant engineering education practices**

Rural communities hold many assets that can enhance STEM learning. Children come into the classroom with a wealth of knowledge accumulated from their day-to-day lives. These funds of knowledge, or FoK (Moll et al., 1992), develop through activities such as outdoor exploration, tinkering on farm equipment, and building forts, and FoK can have direct parallels with science and engineering concepts taught in the classroom (Avery & Kassam, 2011). Leveraging these funds of knowledge and connecting classroom learning to local contexts can increase academic success, while simultaneously contributing to community vitality (Sobel, 2004) and support STEM course

perseverance (Sprowls et al., 2019). Despite the positive outcomes of connecting STEM instruction to local contexts, students will only have access to these types of learning experiences if their teachers know how to develop and implement them. To support effective STEM instruction, K-12 teachers must be provided with professional development on how to connect STEM instructional materials to local contexts (NASEM, 2024). Numerous efforts exist to provide high-quality STEM-focused professional development (PD) to teachers, yet little is known about the long-term effects of these PD efforts on their teaching practices (Shume et al., 2022; Kennedy, 2016). Further, even less is known about the effects of these efforts on rural STEM teachers.

Research highlights that achieving lasting changes in teaching practices is a significant challenge in education (Coburn et al., 2012). Studies show that changes made by teachers toward specific practices through PD programs or policy requirements often diminish over time, or teachers revert to their old practice once external funding and support are withdrawn (Hubers, 2020). Furthermore, as suggested by Drits-Esser et al. (2017), many PD programs intended to facilitate necessary changes in teacher practices often lack funding for prolonged engagement, “putting into question the sustainability of the teacher learning that occurs during the course of the program” (p. 377). These issues highlight a significant problem in sustaining the impact of innovations or well-intended changes on teacher behaviors, classroom practices, and student learning (El-Hamamsy et al., 2024).

The literature also indicates that new practices or innovations are generally examined in the initial stages of implementation, with less follow-up on how these changes are sustained over time (Howard et al., 2021; Sandholtz & Ringstaff, 2016). This is especially true for local changes or those resulting from PD programs. While many studies investigate how nationwide, statewide, or even organizational policies and changes are implemented (e.g., Rigby et al., 2016), the literature does not offer much on the long-term effects of PD programs despite the increasing demand to understand what happens after a PD program or when funding for PD programs is withdrawn (Hubers, 2020). Teacher educators need to understand the trajectories of teacher changes or how and why changes are or are not sustained over time to better design and deliver

professional development opportunities that have long-lasting positive effects on teachers' practice

A limited number of studies list contextual factors involved in sustaining changes in teacher practices. For example, Sandholtz and Ringstaff (2016) found that contextual elements affecting changes in teachers' inquiry-based science instruction following PD include support from administration, support from colleagues, and available resources. Rural teachers often face professional isolation due to low school populations and large geographic distances between schools (NASEM, 2024) which can limit the follow up support from colleagues described by Sandholtz and Ringstaff (2016). Additional studies are needed to examine how teachers implement and sustain practices, in particular in relation to the subjects that have only recently entered the spheres of elementary schooling, such as engineering or computer science. Understanding how changes are sustained in rural districts where teachers already face a lack of support in introducing these subject areas into their elementary classrooms or lack extended PD opportunities in these areas, is especially warranted (Inouye et al., 2024).

Therefore, in this paper, we investigate the perspectives of three rural teachers on what enables sustaining locally relevant engineering practices after the conclusion of a five-year nationally funded project in the absence of formal support. In particular, we explore the following research question:

> *What elements do rural teachers identify as significant for the sustainability of engineering practices in elementary classrooms after the conclusion of a five-year nationally funded project?*

Theoretical Framework: Cultural Historical Activity Theory

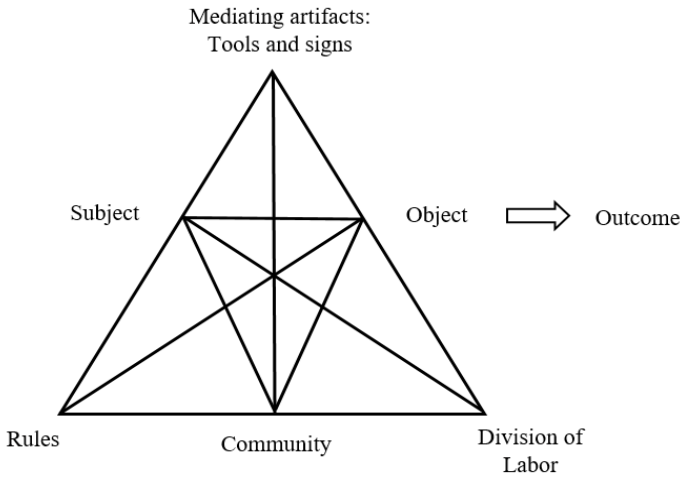
Cultural Historical Activity Theory (CHAT) aims to understand human actions and behaviors in their social and cultural contexts. Originally developed by Vygotsky (1978), CHAT provides a robust theoretical framework that emphasizes the role of *mediation* in human actions. According to Vygotsky, individuals internalize cultural tools and signs to interact with their environment and each other. These tools and signs, or mediating artifacts as Vygotsky called them, can be intangible tools such as language or cognitive processes (memory and attention) or technical tools that include physical objects used to

manipulate the environment. Vygotsky posited that these tools do more than extend human capabilities—they transform the psychological processes they mediate. When children learn to write, for instance, it is not merely the act of learning to form letters on a page; it is the internalization of a cultural practice that shapes how they think, plan, and even remember information. Vygotsky's student, Leointiev (1982), built on Vygotsky's concept of mediating tools and signs or artifacts and claimed that mediation is *collective* in nature, and "the activity of the human individual is a system that obeys the system of relations of society. Outside these relations human activity does not exist" (p. 397). Leontiev (1982) argued human activities are object-oriented (see Figure 1). *Object* in CHAT means "the true motive" which gives meaning to individuals' actions as embedded in social and cultural practices (Leontiev, 1978; Kaptelinin, 2005). Cole and The Distributed Literacy Consortium (2006) described this process as,

> Educational activities and cultural practices need to be conceptualized as social systems with several elements: the interplay among persons as active subjects, their competing or complementary objectives, the tools (mediational artifacts) they deploy; the social rules they formulate and debate, the communities they formulate and inhabit, and the divisions of labor that govern the configurations of their joint actions. (p. 15)

Figure 1

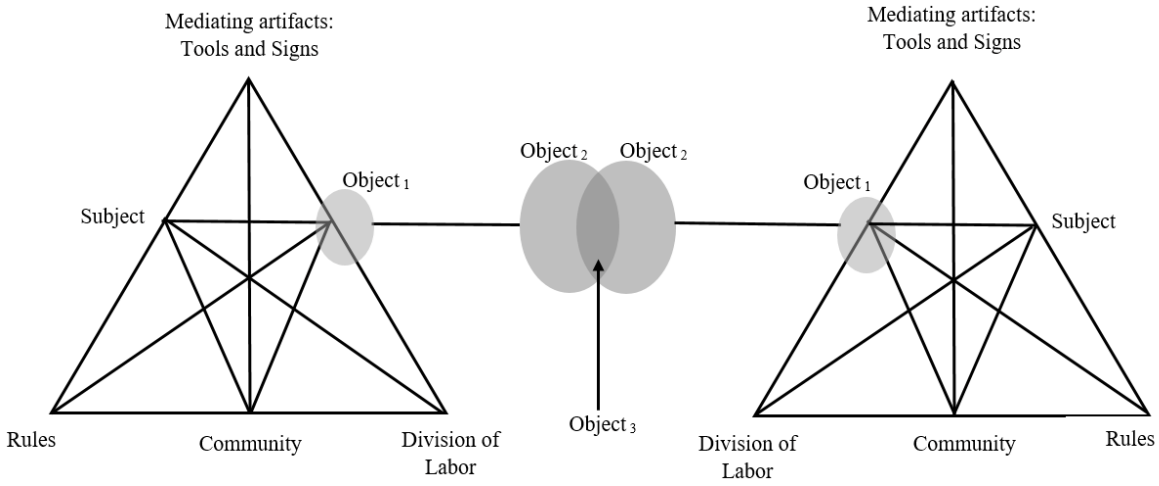
Triangle of Activity



Elaborating on Leontiev's model, Engeström emphasized individuals and collectves' change within activity systems (Engeström, 1999; Roth & Lee, 2007). Engeström developed what is now referred to as third-generation Activity Theory and visualized this expanded theory using a model of interacting activity systems. In this expanded theory, multiple systems–such as teachers, students, administrators, policymakers–simultaneously shape and reshape each other through their interactions (Figure 2). This approach highlights the interconnectedness of different groups or communities, each with their own tools, rules, and divisions of labor. Furthermore, Engeström's model is particularly insightful because it incorporates the concept of contradictions as central drivers of change within and between activity systems (Engeström, 1999, 2001). Engeström suggests that these contradictions—misalignments or conflicts between different components of an activity system (such as between the tools used and the norms governing their use) or between different activity systems—can serve as catalysts for change.

Figure 2

Interacting Activity Systems (Engeström, 2001, p. 136) (permission obtained)



The recent literature shows that CHAT helps understand how new knowledge or pedagogies in STEM are integrated into the rural teachers' existing "activity system" of teaching (Boz & Allexshat-Snider, 2024; Mendenhall et al., 2022) and how rural schools

leverage local resources and traditions as assets for curriculum (Moreno, 2022). In this paper, we used CHAT to understand activity systems that mediate or conflict with the sustainability of locally relevant engineering education in rural contexts. CHAT is particularly useful to analyze complex social phenomena. The application of CHAT allowed us to capture the interacting and evolving activity systems involved in sustaining locally relevant engineering in rural settings. Furthermore, we employed CHAT to identify tensions and contradictions within activity systems that may hinder the full utilization of rural teachers' and students' assets, as well as to understand how these assets serve as powerful mediating elements in sustaining engineering education in rural contexts. Finally, we discussed possible interventions that would align with the needs and realities of rural schools in teaching and expanding their engineering education practices.

Methods

We used a single case study design (Yin, 2018). The case focused on the sustainability of using locally relevant engineering practices in rural elementary classrooms which was the goal of a multi-year federally funded project that took place in the US mountain west. The case study draws on the experiences of three rural elementary teachers who were engaged in the project.

Yin (2018) views a case study as an empirical approach focused on a contemporary phenomenon known as the "case." It acknowledges the real-life context, particularly when the boundaries between the "case" and its context are not clearly defined. The project aimed at increasing rural and Indigenous youths' awareness of engineering and engineering related careers, with the goal of developing their identities as engineering learners. We worked with rural elementary teachers for a period of four years to develop classroom engineering activities that connected to students' funds of knowledge (Moll et al., 1992). In the first year of the grant, we collaborated with elementary teachers to learn more about students' cultures and knowledge and introduced teachers to engineering design-based teaching (Hammack et al., 2021). We also provided a workshop on how to use microcomputing technology to support engineering instruction in the classroom and provided teachers with curriculum and materials to adapt for use in their classrooms. After participating teachers suggested that

water use was a central issue each of their communities faced in agriculture operations in their contexts, teachers guided their students through the use of the microcomputers to design and build a self-monitoring water system for a garden. In the second and third years of the grant, we supported teachers in applying and refining the engineering lessons and instruction and developing additional lessons more precisely connected to their unique local contexts. We encouraged teachers to integrate local funds of knowledge in their lesson designs and identify specific community problems or needs to address through their locally relevant engineering lessons (Inouye et al., 2024; Dalvi et al., 2016; Tan et al., 2019). We provided teachers with financial support to purchase supplies as well as classroom implementation support by visiting their classrooms face to face and virtually during the first three years of the project; additional detail about classroom support is included in the next section. During the fourth year of the grant, the research team did not visit the classrooms but still provided financial support for teaching supplies needed to teach engineering lessons connected to the local context.

Participants

The participants in this study included three fourth and fifth grade elementary teachers working in different rural communities in the US mountain west. Each participant was provided a pseudonym (see Table 1). Courtney is a white female with more than 33 years of classroom teaching experience. During this study, she taught 5th grade at a rural school located on a Native American Reservation, approximately 60 miles from the small city where she lived. All students at the school were classified as low socioeconomic status. Access to clean water was a concern on the reservation due to drought as well as water pollution, and Courtney chose to focus her lesson on irrigation systems designed to conserve water, while meeting the water needs of the community's citizens as well as plant and animal stock of local farms and ranches. Students worked through a number of activities including moving water from place to place by designing water irrigations systems using cups and straws. The research team visited Courtney's classroom and taught the students how to use Micro:bit (a single board computer, for more information please see https://microbit.org/) and sensors to monitor water quality in soil. Later, the students used the sensors to build a model self-watering garden. Members of the

research team also joined the class via zoom to help support students as they began using Micro:bits and sensors to build their model gardens. Taking what they learned from the model self-watering garden, students built a larger self-watering garden that they used to start seeds inside their classroom to later transplant into the school's garden. Finally, the students worked to design and install an irrigation system to water the school's garden to ensure the plants received the needed water requirements during weekends and when school was out for the summer.

Holly is a white female with 18 years of classroom teaching experience and taught 4th grade in a small town located approximately 10 miles from the large town where she lived. Approximately 30% of the students at the school were classified as low socioeconomic status. Holly's class focused on two locally relevant engineering design tasks. The first was related to wildfires. The students designed and built box fan air filters to deliver to the residents of a neighboring town who were experiencing unhealthy air quality due to a wildfire. Wildfire induced air quality was something the students had personally experienced recently when a fire was active on their mountain and they wanted to help the nearby community that was now experiencing a similar issue. The second was a building design plan that would help reduce the impacts of ice-jam related flooding along their local river. At the time of the lesson, the local river was experiencing an ice-jam flooding warning. Students spoke with a flood plan engineer and conducted simulations to learn about different remediation methods (e.g., levee, fill, stilts). Then, they were given maps of the river with building sites along the river and asked to propose a plan for how to use the building sites given their knowledge of different flood remediation methods. A member of the research team helped Courtney with delivery of both lessons, co-teaching approximately 75% of the lessons.

Jennifer is a white female with 10 years of classroom teaching experience and taught 5th grade in the same small town where she lived. Approximately 48% of the students at the school were classified as low socioeconomic status. Jennifer designed and implemented a lesson connected to the school's partnership with a local composting company as part of a farm to table program. The students learned that most of the compostable material collected from their cafeteria had to be thrown away because it was contaminated with non-compostable materials. They interviewed cafeteria workers,

compost experts, administration, teachers, and students to gain a better understanding of the problem. Then, they developed a lunch room plan that included moving locations of trash and compost bins, specific lunch room routines for emptying trays, and a messaging campaign to inform the student body about composting. The research team worked with Jennifer during the initial planning of the lesson as well as visiting the classroom to support the students during their lunch room solution planning.

Table 1

Participant Background

Teachers	Years of Teaching Experience	School Context	Grade	Enrolment by Race and Ethnicity*
Courtney (White)	33	Reservation and rural, remote	5th Grade	97% Native American, 2% Hispanic, 1% more than one race
Holly (White)	18	Rural, fringe	4th Grade	87% White, 7% Hispanic, 6% more than one race, less than 1% Black
Jennifer (White)	10	Town, distant	5th Grade	91% White 4% Hispanic, 4% more than one race, less than 1% Native American, Asian

Note. *Information about demographics was retrieved from the National Center for Education Statistics (NCES). While Jennifer's school was classified as Town, her community shared many characteristics with the rural, fringe school where Holly worked, and many of Jennifer's students came from outlying ranching communities. As described by NASEM (2024), categorization systems such as NCES do not adequately capture the rural nature of some schools.

Data Collection and Analysis

For this study, we collected data from teachers through semi-structured interviews (individual and focus group interviews) at the conclusion of year four of the project after teachers had spent the academic year without direct support for the design and delivery of the locally-connected engineering lessons First, teachers participated in a focus group session with members of the research team to share their experiences teaching engineering during the prior academic year (grant year 4). The focus group session lasted approximately 90 minutes. Rural teachers are often professionally isolated and value time to interact with peers (Bowen et al., 2021; Gallagher & Woolard, 2022). Over the course of the project, we found this to be true for our participants as well, with rich conversations taking place about their teaching practices every time the teachers interacted with each other. For this reason, we chose to hold a group interview to explore participants' joint experiences as well as honor their desire to debrief with each other.

Within the two weeks after the group interview, each teacher participated in an individual interview during which they shared additional thoughts about their year and plans for teaching engineering in the future. The individual interviews allowed the research team to collect more in-depth data from our participating teachers. Individual interviews lasted between 35 and 45 minutes. During the interviews, we focused on the teachers' experiences of teaching engineering in their classrooms. Specifically, we wanted to identify if their approaches to teaching engineering had changed during year 4 when they did not receive in-classroom support from the research team when compared to previous years when the research team provided in-class support. We also wanted to learn about their future plans for teaching engineering now that the grant had ended and they would no longer receive financial or classroom implementation support. We asked questions about their current engineering teaching practices, the challenges they faced in sustaining their gains from the project, what helped them sustain—or not sustain—engineering education in their classrooms, and any strategies they employed to continue incorporating engineering into their curriculum.

All teacher interviews (individual and focus group) were transcribed for data analysis. We employed thematic analysis (Braun & Clarke, 2006) to uncover key mechanisms behind teachers' implementation of locally relevant engineering education.

In doing so, we used open coding (Strauss & Corbin, 1998) to identify recurring themes and patterns across the interviews. These codes included categories such as access to materials, administrative support or teacher agency. From these codes, we constructed broader themes aligned with key CHAT elements (in particular, tools, community, and rules) to trace elements that enabled or conflicted with teachers' efforts to sustain locally relevant engineering lessons in their classrooms. Our analysis moved iteratively between transcripts, codes, and key CHAT elements to ensure themes were grounded in participants' voices and experiences.

Researcher Positionalities in Relation to Rural Education

Our international research team consists of scholars with diverse backgrounds related to rural education, resulting in deep knowledge and expertise working with rural teachers. We each have more than a decade of experience living and working in rural areas, including the Northeast, Southeast, Southwest, Midwest, Intermountain West, and Appalachian regions of the United States. Further, multiple members of the research team are former rural K-12 teachers, and our team has more than 40 years of cumulative experience providing professional learning and instructional support to teachers in rural areas. We all view rural spaces and schools as assets filled, and value the professional expertise that rural teachers bring to our project and our understanding of sustainability in education. We acknowledge that our shared commitment to rural education may have influenced our data collection and analysis. To account for this, we held a two-hour structured reflection session as a research team to examine the overall successes and challenges encountered in sustaining engineering education in rural school contexts. This session provided opportunities for ongoing reflexive practices and helped guide data collection and analysis. Additionally, we center the voices of our participating teachers in this case study and ensure that data analysis and sense-making were grounded in participants' voices rather than our own expectations.

Findings

From the perspective of the Cultural Historical Activity Theory (CHAT), we approached the case of engineering education in rural elementary schools as an activity

system where students, teachers, and communities interacted through mediations and contradictions (conflicts) that mediated or conflicted with teachers' actions of sustaining engineering in their classrooms.

Below we described the mediations teachers expressed in their teaching of engineering and contradictions (conflicts) in sustaining these practices in their classrooms.

Mediations

Student Engagement

All three teachers emphasized that engineering lessons offered hands-on and real world problem solving opportunities for their students, which in turn cultivated persistence, problem solving skills, and creativity in their students. Observing student enthusiasm in engineering classrooms and the role of engineering in developing students' soft skills (or essential life skills) drove teachers to advocate for and implement engineering-focused activities in their classes during and after the project.

For example, Jennifer indicated that engineering education in elementary classrooms is essential for fostering grit, persistence, and creative problem solving in students. She noticed that engineering activities engage all students with open-ended problems that require active, hands-on solutions. Jennifer explained:

> It's so good for them to have an open-ended question and they have to try and solve it. It's just like the teacher is not teaching. There's no right or wrong answer. You have to figure it out. And I just love to watch kids struggle through that.

Holly saw engineering education as a transformative tool for elementary students to engage actively in solving real-world problems and gaining a strong sense of identity as problem solvers. During the project, in her classroom she often discussed engineering concepts, and her classroom frequently hosted various engineers. She designed engineering lessons that addressed community needs. For example, as described above under participants, in a notable engineering lesson, her students addressed local wildfires by creating products to filter smoke and donated those to staff, families, and community members: "The kids just every time we do that, they're so excited that they're helping people." By engaging students in solving real, immediate problems, Holly fostered a

sense of civic agency in students and encouraged them to use engineering along with local assets and knowledge to address community issues.

Courtney valued the creativity and problem-solving aspects of engineering education and her students' high engagement with engineering lessons:

> The kids relate to it so they have enthusiasm for it and just the way that they engage in the activities, it just makes it more enjoyable as a teacher. It makes the kids more engaged, more willing to do the work.

Figure 3

Pictures from Holly's (left) and Courtney's (right) Classrooms

Access to Funding and Materials for Engineering Integration

Access to continuous funding and materials that allowed the integration of engineering into other subject areas enabled Courtney and Jennifer to sustain engineering lessons in their classrooms. Courtney indicated that she did not have any issues accessing resources once the project finished, and she did not encounter difficulties in finding funding to purchase materials for teaching engineering in her classroom:

> I worked with the Air and Space Museum last summer and so then they gave me money for materials…So if you are willing to give up some time and make some effort, it's not too difficult to get some materials. Same with a lot of donors.

This excerpt exemplifies how Courtney leveraged community connections to access resources and how her proactive engagement with local networks and supports

helped her sustain engineering integration. Furthermore, the support and the resources Jennifer received through the project such as literacy books helped her to integrate engineering into her English Language Arts classes. Courtney also indicated that she saw engineering education as integral to teaching a variety of subjects. Therefore, she was able to include engineering in various subject areas

> I was able to incorporate literacy into the science and math, into the science, social studies, into the science and find some, there's a reading series that uses a lot of the same ideas on engineering and water and they use a book called One Well and then really leads into the styrofoam cup activity that we do.

Contradictions

Declining Autonomy and Decreasing Emphasis on Science and Engineering

Jennifer and Holly emphasized that they experienced declining autonomy and decreasing emphasis on science and engineering in their school and district administration, which conflicted with their efforts to sustain engineering in their classrooms. For example, after the project concluded, Jennifer could not integrate engineering as much as she did during the project time. She listed declining teacher autonomy and decreasing emphasis on science in her school district and differing job expectations as primary obstacles: “We are getting to the point that teachers have lost enough autonomy of their day…We are really losing our individual discretion in the classroom.” She prioritized engineering and science lessons in her classroom; however, as the current school administration did not value these subjects, she struggled to teach engineering after the project ceased: “I know kids love it [engineering]. I know it's good for kids, and yet I can't justify taking the time away from the students in my classroom and those other content areas I'm expected to teach.”

Holly had support from her administration, and her school and district administration valued her engineering lessons; however, she believed that this support alone was not sufficient. Holly expressed her frustration with administrators who verbally approve initiatives like engineering without tangible support, such as professional development or allocated time within the school day. Furthermore, Holly highlighted challenges with the rigid scheduling enforced by her district, which introduced new

programs that heavily structured classroom time, leaving little flexibility for integrating engineering or other initiatives into her classroom: "Our district purchased programs, new programs, and unfortunately, it has gotten very regimented in our schedule. This is your math time; this is intervention time. This is ELA."

Limited Resources and Materials

Once the project ceased, Holly had challenges implementing as many engineering lessons as she had in the previous years. She needed support to come up with engineering lessons that would target community issues that are changing. She noted:

> There's not a bank of resources that you can find because you have to know the community and it's always changing. And so, I think that those things for teachers… It's just difficult. And the resources, I know in my district, they're supportive of it, but they don't provide us any resources to do it either.

Limited access to some resources and materials was another obstacle Jennifer identified for teaching engineering this year. Ready-to-go engineering kits that would target school or community-specific problems and needs were among the resources Jennifer wished she had more access to. Jennifer's experiences also highlight the importance of treating the community as a living curriculum—one that offers evolving local problems and knowledge systems for students to engage with in engineering lessons.

Community Issues

Courtney noted that her students were well aware of community issues, which helped them develop targeted engineering projects to address these concerns effectively. However, sustaining community-focused engineering practices in her classroom posed challenges due to her unique context. Courtney preferred engineering projects that resulted in real-world impacts, similar to those Holly implemented. She expressed concerns with engineering lessons with no tangible community improvements. She was worried that such engineering lessons would affect her students adversely as in their community, "people have ideas, and nothing ever gets

solved. Historically, that's just how things are, and it's a horrible way for kids to grow up thinking that their ideas will never lead to change."

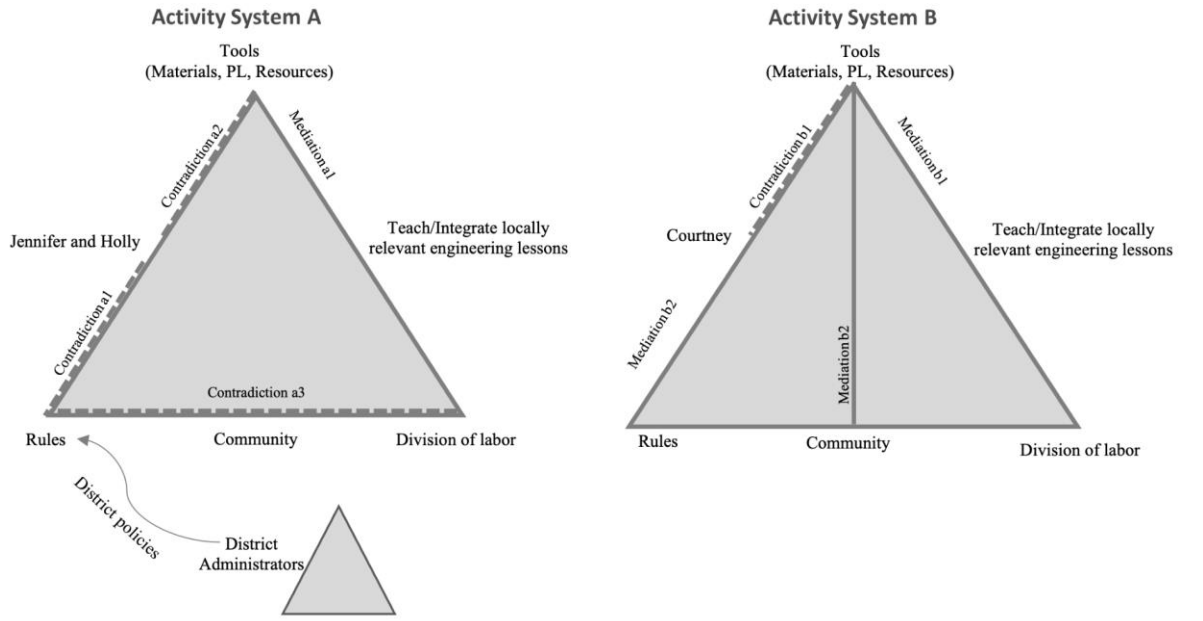
Discussion and Implications

In this paper, we explored how rural elementary school teachers sustain the implementation of locally relevant engineering lessons after the conclusion of a five-year nationally funded project. This project aimed to enhance rural and Indigenous students' awareness of engineering and related careers. It provided teachers with professional development, resources, and support to design and implement engineering lessons and curricula by incorporating their students' local and cultural contexts into their engineering teaching practices to increase engineering relevance and a sense of belonging for their students.

The sustainability of innovative teaching practices, such as engineering education in rural elementary schools, is a complex issue, and the differences in teachers' specific rural contexts posed different challenges for them to sustain the gains they received during the project. Teachers had varying levels of teacher autonomy and administrative support, and the availability of these alone did not ensure smooth implementation due to varied contextual differences. Therefore, based on the mediations and contradictions discussed above, we can claim that teachers belonged to different activity systems, and teacher agency and resource availability seemed to be the primary catalysts to mediate or contradict their unique activity systems (see Figure 4).

Figure 4

Triads for Activity Systems A and B



Note. Dashed lines indicate contradictions across elements of activity systems.

Jennnifer and Holly were part of Activity System A where administrative support for engineering education was inconsistent and, at times, even discouraging. On the other hand, Courtney operated within Activity System B, where she had greater autonomy to decide how frequently and in what ways to incorporate engineering lessons into her classroom.

In both activity systems (Tools: mediation a1 and b1), student engagement and enthusiasm pushed teachers to sustain the integration of locally relevant engineering lessons in their classrooms.

In Activity System A, Jennifer and Holly faced multiple conflicts which decreased the amount of engineering they taught after the cease of the project. One major challenge was the decline of teacher agency due to changing and evolving district policies and scheduling constraints, which resulted in less flexibility for them to integrate engineering into their classrooms (Rules: contradiction a1). They also indicated that after the project ended, they had misalignment between available engineering resources and their community problems. For example, Jennifer taught in a rapidly growing rural

area with community problems changing fast, and it was a challenge for her to be aware of these problems and find relevant engineering resources that would tackle these community problems (Materials: contradiction a2). Furthermore, administrative decisions often deprioritized science and engineering in favor of core curriculum areas such as math or English language arts (ELA). Even though Jennifer was able to teach some engineering in her ELA classes using the resources she obtained through the project, teachers were also forced to restrict their engineering lessons and adapt their roles to fit within the evolving expectations of their schools and school districts (Division of labor: contradiction a3).

On the other hand, in Activity System B, Courtney did not face many contradictions, and she was more optimistic about sustaining engineering lessons in her classroom. She had access to funding through her community partnerships (Community: mediation b2). Her major obstacle to the sustainability of engineering integration was the inconsistent availability of materials, which would enable Holly to directly target their community problems and help her students experience the tangible impact of locally relevant engineering lessons, reinforcing their roles in solving real-world community challenges and their engineering identities.

In the literature, it is well known that rural is multidimensional, encompassing a wide range of social, economic, and cultural contexts that vary significantly from one community to another (Inouye et al., 2024; Hargreaves et al., 2009). Our analysis showed us that rural areas are not static places; rather, they are dynamic environments where community needs, resources, and educational priorities continuously evolve. Therefore, in providing professional learning in engineering, or any STEM field, that builds on local knowledge and targets rural teachers, we have concluded that it is significant to consider that teachers in these settings need to adapt to shifting policies, availability of resources, or growing communities with evolving community problems. In particular, our study showed that engineering education in rural schools is shaped by complex interactions between teacher agency and autonomy, administrative expectations and schedule constraints, and community engagement and resources. Understanding these dynamics is significant to design and develop targeted and context-specific professional learning opportunities to meet the unique needs of rural

teachers and support them in sustaining professional development gains. We should also add that even though the literature using Activity theory (e.g., Cole, 2016) or focusing on education changes (e.g., Nocon, 2004) discusses these dynamics broadly–often without making any distinction between urban or rural contexts, our study provides a nuanced perspective specific to rural settings. Our study also contributes to the literature by emphasizing unique challenges rural schools face (e.g., rapidly shifting community needs and evolving administrative expectations) and unique opportunities rural schools offer (e.g., for community engagement and contextually/locally relevant engineering) and suggesting that these challenges and opportunities play a critical role in shaping the sustainability of engineering learning practices in rural schools.

Conclusion and Limitations

We conclude that achieving sustainable change in engineering teaching practices is not merely a consequence of initial training or projects but requires a collective effort that addresses variations across school/classroom contexts (e.g., Sandholtz & Ringstaff, 2016). We should also note that the implications of this study extend beyond engineering education and deepen our understanding of the complexities involved in sustaining teacher professional learning outcomes in rural school districts. This study calls for a multifaceted approach that involves teachers, administrators, and the broader community in fostering an environment that supports lasting educational change. To sustain teacher gains from STEM professional development programs in rural areas, we recommend that these programs should account for fluctuating levels of teacher autonomy/agency and the shifting administrative expectations, and can explicitly build on ongoing community engagement, funding pathways (using local partnerships), and adaptable materials to evolving community needs and local problems.

In terms of the limitations of the study, our primary data sources were teacher interviews, and we did not collect data from administrators (principals or district administrators); therefore, administrators' activity systems were missing in our study. Future research could benefit from field observations, administrator perspectives, and a wider range of rural schools.

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Conflicts of Interest

The authors declare that they have no conflict of interest.

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Teaching Principals in Rural, Remote, and Northern Schools in Canada: An Empirical Analysis of Workload, Roles, and Instructional Leadership

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This paper reports on findings of a study that examined the role of teaching principals in rural, remote, and northern schools in Canada. A teaching principal is a principal who has a “double load” or dual roles in teaching and administration. The objectives of this study are: 1) to describe the role of the teaching principal in northern, rural, and remote school districts in the prairie provinces of Manitoba, Saskatchewan, and Alberta, Canada; 2) to characterize the practices of teaching principals in rural, remote and northern school contexts in terms; and 3) to delineate implications of the above findings for leadership theory, practice and preparation. As part of a larger multi-methods study, we conducted a survey of 70 teaching principals in the prairie provinces related to school and community contexts, workloads, and leadership, administrative, and teaching responsibilities. This paper reports on the findings of the survey that demonstrate:1) difficulties that teaching principals face with respect to balancing administrative, teaching, and personal responsibilities; 2) a belief that holding a teaching role while serving as a principal improves leadership capabilities; and 3) instructional leadership practices for teaching principals that may be significantly different from those identified in the literature on instructional leadership.

***Keywords*: critical thinking, pre-service teachers, student teaching, practicum, higher education**

This paper reports on the findings of one phase of a research study that examines the roles and leadership practices of teaching principals in northern, rural, and remote schools in the prairie provinces of Manitoba, Saskatchewan, and Alberta, Canada. A teaching principal is a principal who has a “double load” or dual roles in teaching and administration (Clarke & Stevens, 2009; Pendola & Fuller, 2018; Wallin et al., 2019). Literature on principal leadership practices, and often on the rural principalship itself, presupposes that principals hold full-time administrative appointments (Hallinger, 2018; Leithwood & Louis, 2011). Yet due to constraints

of declining enrolments and/or remote access, many rural/northern/remote principals spend a significant percentage of their time teaching (Jutras et al., 2020; Wallin et al., 2019). Our research is based on two gaps noted in the literatures on leadership and rural education: (a) teaching principals engage in a distinct set of practices not described in the leadership literature or provincial policies, and; (b) the teaching principalship is common in rural, northern, remote contexts in Canada that suffer from lower educational outcomes, but we do not know enough about their role and the supports they need to adequately bolster their efforts towards improving educational outcomes.

Research on Canadian rural education reports that there is a significant rural-urban gap in educational outcomes for rural students, educators and communities based on a number of educational indicators such as breadth and quality of programs, specialized support programs, teacher and leader qualifications, classroom learning environment, student achievement data, student and employee attrition rates, persistence in post-secondary education, and poverty (Van Maarseveen, 2021; Wood, 2023; Zahl-Thanem & Rye, 2024, Zarifa et al., 2019). In Canada, there is still a large proportion of rural students who are negatively affected by these indicators. Given the high proportion of rural students in the prairie provinces (49% in Alberta, 54% in Saskatchewan, and 45% in Manitoba in the 2023-2024 school year), it is crucial that these jurisdictions ensure that students are provided with a quality educational experience. Given the importance of the school leadership effect on student outcomes (Leithwood & Louis, 2011; Robinson, 2010; Robinson & Gray, 2019), it is essential that research focus on the improvement of the practices of school leaders who work in contexts that are known to suffer from lower student outcomes. The objectives of the research study include the following: (1) to describe the role of the teaching principal in northern, rural, and remote school districts in the prairie provinces by outlining: a) local frameworks within which the role is constituted; b) community contexts; (c) school contexts; and d) working conditions; (2) to describe the nature of teaching principals' practice in rural, remote and northern school contexts with respect to: a) management and leadership activity; (c) instructional responsibilities; (c) impact on student outcomes; and (d) the negotiation of roles and implications for self, staff, home life, and community; (3) to develop recommendations from cross-case and cross-context analyses for leadership theory, policy, practice, and preparation, and; (4) to contribute to the improvement of practice for participants and for teaching principals generally. The purpose of this paper is to present the findings of one

phase of this study based on an online survey that gathered data on principals' community contexts, school contexts, working conditions, and individual experiences.

Context

Research on student outcomes suggests that the school principal has an indirect, but significant effect on educational outcomes, second only to the classroom teacher (Hallinger, 2018; Leithwood & Jantzi, 2008; Robinson & Gray, 2019). As a consequence, ministries and professional associations have worked to develop principal standards of practice to ensure that principals are equipped to effectively lead the schools they serve. In the prairie provinces, this has led to a number of initiatives, including the development of Principal Quality Practice Guidelines (2009) and the Leadership Quality Standard (2023) in Alberta, and school leadership certification requirements in Manitoba (2025). The research and literature upon which the principal practice guidelines and leadership standards are based presume that the school principal *does not teach*. The practices for which they advocate presume that principals are full-time administrators who do not attend to unique practices or concerns that may develop for those who work directly as teachers. This gap in knowledge prompts us to ask how local contexts and the dual role of teacher and administrator impact the role of teaching principals and how their leadership practice may be similar to or different from the literature and policy on effective school leadership. Other than our pilot study that preceded this larger research project (Newton & Wallin, 2013; Wallin & Newton, 2013), little Canadian research has explored the work of teaching principals. We do not know whether, or to what extent, teaching principals contribute to, or help offset, the rural-urban gap in educational outcomes. We also do not know what supports could benefit teaching principals in their efforts to improve educational outcomes in these contexts.

While principals are expected to focus on teaching and learning, they are also working in environments of increasing accountability and managerial imperatives (Newton et al., 2010; Dolan, 2020; Heffernan, 2017; Zuckerman et al., 2018). Principals are experiencing increasing (and often competing) demands related to workload intensification, and school systems are facing growing concerns with principal recruitment, retention, and stress (Jutras et al., 2020; Hansen, 2018; Pannell & McBrayer, 2022; Yan, 2020). In many northern, rural, and remote school jurisdictions, it has become increasingly difficult to recruit and retain qualified personnel

to assume administrative roles (Hansen, 2018) because the “traditional” workload is also combined with higher expectations for community involvement (Preston & Barnes, 2017; Wieczorek & Manard, 2018).

Workload issues are exacerbated for teaching principals. In addition to having reduced formal administrative time allotments, there is little in the way of (and sometimes no) administrative support (Pendola & Fuller, 2018) to help teaching principals manage their day due to budget restrictions (Jutras et al., 2020; Klocko & Justis, 2019; Newton & Wallin, 2013). In addition, rural/northern/remote principals face significant public expectations to contribute to community life (Wallin, 2001; 2005; Jutras et al., 2020; Pendola & Fuller, 2018). In some cases, teaching principals face tensions between the need to be involved in community matters while trying to maintain an appropriate professional distance (Clarke et al., 2006; Wallin & Newton, 2014). As a consequence, principals find themselves torn between the priorities and expectations of community members and those of the district or province (Hicks & Wallin, 2013; Sutherland, 2023; Wallin, 2008).

Teaching principals are faced with unique professional concerns. The conflicting role demands of teacher and principal “create tensions, and [principals] feel stretched to the limits by myriad roles that cannot be executed thoroughly due to a lack of time for any particular task” (Starr & White, 2008, p. 6). In our own research, we have found that teaching principals were anxious and overwhelmed by heavy workloads and unrealistic professional responsibilities (Jutras et al., 2020; Newton & Wallin, 2013; Wallin & Newton, 2013). They also identified a sense of guilt and dissatisfaction over the frequent need to be taken away from their classrooms (Newton & Wallin, 2013; Wallin et al., 2019). Many teaching principals feel that they are not prepared to deal with the resulting tensions and dilemmas that are associated with their multiple roles (Ewington et al., 2008; Klocko & Justis, 2019; Wallin et al., 2019). This occurs because the professional learning of teaching principals comes mostly from informal activities, on-the-job experiences, and trial and error, as opposed to formal professional development opportunities or leadership training specific to their unique role, often due to limited access to universities or colleges (Pendola & Fuller, 2018; Wallin, 2008; Wells et al., 2021). Given their tendency to be found in sparsely populated or northern/remote areas, teaching principals have limited opportunities to be mentored or to acquire the career visibility they need for career advancement (Wallin, 2001; Partin & Hayes, 2024; Wells et al., 2021). They often struggle to find a balance

between their personal and professional lives, and prioritize their work obligations at the expense of their personal lives and families (Clarke & Stevens, 2009; Wallin & Newton, 2014).

However, the literature is also replete with positive attributes of the role of the teaching principal. Collins (2004) found that successful teaching principals worked hard, emphasized collaborative work amongst staff, and demonstrated emotional intelligence in their relationships. Other studies found that teaching principals enjoyed being able to work closely with community members, parents, staff, and particularly students (Jutras et al., 2020; Wallin & Newton, 2014). Teaching principals consistently rate their experiences positively despite heavy workloads (Berndt & Fasciglione, 2015; Collins, 2004; Wallin & Newton, 2014; Wallin et al. 2019). They also acknowledge feelings of accomplishment and confidence as they "cope and survive the trials and challenges of being a leader of a small school [which] developed their self-esteem" (Ewington et al., 2008, p. 546).

Bouchamma (2006) found that teaching principals have a stronger sense of personal efficacy than principals who do not teach. Our findings suggest the specific nature of the teaching assignment may be a significant variable in principals' perceptions of efficacy (Newton & Wallin, 2013; Wallin et al., 2019). Principals who taught in their areas of expertise suggested that their teaching role contributed to their effectiveness as principals. Other participants worked outside of their specializations to "fill gaps in the timetable," or they took on assignments in which they might not have specialized training (i.e., special education) to provide them with more office "flex time." Principals' sense of efficacy appeared to be lower in scenarios where they felt less confident in their teaching roles.

Murdoch and Schiller (2002) found that teaching principals felt "their credibility as a teacher strengthened their position as an instructional leader" (para. 1). The assumption exists that this "grounding" in teaching: (a) improves administrative practice; (b) fosters teacher faith in the principal as one who "understands" their issues; and, (c) builds stronger relationships with students, leading to fewer discipline issues and a stronger school culture. Boyd (1996) concurred with these findings and suggested that the joy principals received from teaching "might even be a means for preventing principal burnout" (p. 69). Findings from our pilot study suggest that teaching principals are uniquely positioned to contribute to the discourse on educational leadership practices because they directly teach students and also indirectly affect the learning

environment through setting directions, managing people, redesigning the organization, and managing the instructional program (Leithwood & Louis, 2011).

Methodology

In order to create a context for our work, and to describe the prevalence of the teaching principalship, we requested that an anonymous online survey be distributed by superintendents of rural public-school divisions to teaching principals (n=29 Manitoba divisions, n=22 Saskatchewan divisions, n=54 Alberta divisions). Part one of the survey gathered data on principals' community contexts, school contexts, and individual teaching and educational backgrounds. Part two of the survey asked teaching principals to indicate how many hours per week they spent on a number of areas of focus linked to teaching, leading, and personal engagements. Part three of the survey asked teaching principals to rank a number of statements that have been commonly noted in the research literature on the teaching principalship related to four areas of concern: (a) teaching, (b) leadership and administration, (c) balancing the dual role, and (d) wellbeing. Part four of the study included open-ended questions that asked teaching principals to indicate what they believed to be three significant benefits of being a teaching principal, three challenges of the role, how they balance the dual role, and recommendations for those who may wish to serve as a teaching principal. Since the number of teaching principal positions is not reported directly in these school divisions, nor could we guarantee that superintendents forwarded our request, we are unable to provide a confirmed response rate. However, the findings are based on 70 completed surveys from teaching principals who elected to participate. Descriptive and inferential statistical analyses were conducted using the statistical software analysis package SPSS. Data analysis searched for differences by province and context (northern, rural, remote).

Findings

The findings of this paper are organized according to the sections of the survey: (a) community and educational content; (b) time spent on teaching, leading and personal engagements; (c) ranking common research findings related to teaching, leading and administration, balancing the dual role, and wellness; and, (d) challenges and benefits of being a teaching principal.

Community and Educational Context

One of the fascinating discussions always considered by rural researchers is how we define what it means to be rural. Part One of our survey asked participants to respond in a drop-down list that included all the combinations possible of “Rural”, “Northern”, and “Remote”, but also allowed participants to self-characterize their communities. Of the total 70 returned surveys, the vast majority (83%) were returned by Saskatchewan teaching principals, followed by those from Manitoba (9%) and Alberta (9%). Most respondents characterized their communities as Rural (75%), with equal proportions (3.2%) describing their communities as Rural/Remote, Rural/Northern, or Northern. Another 15% characterized their communities as “other”, offering a number of interesting descriptions: Low Income/Poverty; Bedroom Community; Rural/Remote/Hutterian; Rural Hutterian; Small City; Semi-remote, and Rural, but close to Remote. The majority of respondents (78%) served in communities that had a population of fewer than 1000 people. The primary industries of the communities were noted to be agriculture (n=56), natural resources (n=26), and education (n=11), with most respondents suggesting there were two primary industries in the area (44.4%) or only one primary industry in the area (33.3%). In addition, most of the schools in which the teaching principals worked (47.6%) were serving two to five other communities, or they served a single community (39.7%).

In terms of the educational context, 95.2% of the respondents worked in the public education system, followed by the publicly funded Catholic/Separate system (3.2%). The majority of respondents (56%) worked in school divisions with enrolments between 2501-5000 students (22.2%) or 5001-7500 students (23.8%). Over three-quarters (77.7%) of the teaching principals worked in schools with enrolments of fewer than 250 students. The majority of schools reported on were either K-12 composite schools (39.7%) or elementary/middle years schools (30.2%). Over two-thirds of the school sites reported on were staffed with five or fewer full-time equivalent (FTE) non-teaching staff (65.2%), with 10 or fewer FTE teachers (63.5%). Included in non-teaching staff were descriptions of positions such as custodians, administrative assistants, librarians/library technicians, educational assistants, bus drivers, counsellors, and maintenance staff. Some of these staff had combined responsibilities (i.e., administrative assistant/librarian). Teaching staff included itinerant teachers (often band teachers) or combined positions (teacher/principal).

The backgrounds of teaching principals were also described. The average years of teaching experience held by teaching principals was 18.2 years, with an average of 7 years of experience as a principal. Almost half (47.6%) of the respondents held Master's degrees as their highest level of education, followed by a Bachelor's degree (36.5%), or a certificate/diploma (1.6%). None of the respondents noted that they held a doctoral degree, though one respondent noted current enrolment in a doctoral program. Almost 29% of the teaching principals had teaching responsibilities for a proportion of 41%-55% of their full-time equivalent (FTE) workload. Another 30% of the group had teaching responsibilities that were more than 55% of their FTE: 56-70% FTE (11.1%); 71-85% FTE (7.9%); 86-99% FTE (7.9%), and 100% FTE (3.2%). On average, teaching principals who responded to the survey taught 2.5 different subjects, with the top three subjects being English Language Arts (n=20), Mathematics (n=18), and Social Studies (n=15). Teaching responsibilities other than traditional subjects included student services, locally developed special projects, senior high flex programming, dual credit programs, and workplace supervision. A number of respondents noted that they taught “all subjects” and multi-age, multi-graded programming.

Time Commitments

Part Two of the survey presented respondents with a list of 32 items related to teaching, leading, and personal engagements. Examples included preparing for instruction, school/team staff meetings, and family time. Respondents were asked to report on how many hours per week (Monday to Sunday) they spent on the listed items. The mean score for the hours per week for each item was calculated to determine the issues upon which teaching principals spent the most of their time. The 10 items upon which teaching principals spent most of their time are listed in Table 1. In addition to the statistical information gathered, some teaching principals added comments that provided clarification for their responses. The items with the highest average of time spent per week included: spending time with family (17.63 hrs/week); direct instruction (14.68 hrs/week); office work/paperwork/reports (12.55 hrs/week); preparing for instruction (6.88 hrs/week), and extra-curricular activities (4.22 hrs/week).

Table 1

Hourly Review of Areas of Focus Per Week: Most Time Spent

Area of Focus	N	Mean Hrs/ Week	Median	Minimum Noted Hrs/Week	Maximum Noted Hrs/Week	Qualifying Comments Related to Item
Time with family	48	17.63	13.5	0	60	"weekends—some time during the week"; "evenings, 4 nights a week"; "3-5 hours per day and Sat and Sun about 12 hours each day"; "limited"
Direct instruction of students	52	14.68	13.75	3	30	
Administrative office work/paper work/reports	51	12.55	10	1	54	"as able"
Preparing for instruction	53	6.13	5	0	20	
Extracurricular activities	48	4.22	3	0	16	"depends upon the season"; "varies"
Student discipline	51	4.09	2	0	30	"with social media this can spill into Saturday and Sunday really quickly"
Student assessment	48	4.08	3	0	30	"ongoing daily" "limited (varies per week)
Responding to school division requests	50	3.52	2	0.5	20	"sometimes—varies per week"
Travel for school-related purposes	50	3.23	2	0	13	"does commute time count?"; "varies"; "last year

						I logged almost 80 hours of unpaid travel”
Personal wellness	49	3.19	2	0	20	“reading, exercise”; “not near enough”; “not much”; “not a lot of time for this”; “very little”

Table 2 outlines the 10 items upon which teaching principals spend the least of their time. The items upon which teaching principals spent the least amount of their time included: school maintenance (1.25 hrs/week); health and safety (1.22 hrs/week); substitutes (0.91 hrs/week); building/infrastructure (0.88 hrs/week); and bussing (0.56 hrs/week).

Table 2

Hourly Review of Areas of Focus Per Week: Least Time Spent

Area of Focus	**N**	**Mean Hrs/ Week**	**Median**	**Minimum Noted Hrs/Week**	**Maximum Noted Hrs/Week**	**Qualifying Comments Related to Item**
Administrative meetings	49	1.92	1	0	10	“varies”
Professional growth of staff	49	1.87	1	0	10	“limited-varies per week”
Technology / Distance Education	47	1.84	1	0	15	“rarely”
Community engagement	49	1.82	1	0	10	“I live in the community so this never ends”
Personnel/HR concerns	49	1.36	1	0	10	“limited-varies per week”
School maintenance	49	1.25	1	0	5	“limited-varies per week”

Health and safety concerns	48	1.22	0.75	0	15	
Substitutes	46	0.91	1	0	3	“rarely”; “not very much time spent on this”
Building/infrastructure issues	46	0.88	1	0	5	“depends”; “rarely”
Bussing	45	0.56	0.5	0	3	“only with concerns”; “rarely”

Rankings of Research Findings

Part Three of the online survey provided a list of findings from previous research studies related to the role of the teaching principal. This part of the survey was designed to explore the extent to which participants affirmed the findings of previous research with respect to the nature of the teaching principal role. These items were categorized into four categories: (a) teaching statements (7 statements); (b) leadership and administrative statements (8 statements); (c) balancing the dual role statements (5 statements); and (d) wellbeing statements (5 statements). Respondents were asked to rank the items for each category based on what they perceived to be the level of relevance/importance of each statement for teaching principals. Table 3 presents the top two ranked statements for each category.

Table 3

Top-Ranked Research Statements Per Item Category

Category	**Rank**	**Statement**	**Mean Rank**
Teaching	1	Teaching principals gain credibility from other teachers because they remain grounded in the concerns of teaching and learning.	2.78
	2	Teaching principals understand the complex educational and social needs of students better than non-teaching principals.	3.4

Leadership and Administration	1	The role of teaching principal in rural, remote and northern communities has been created primarily due to budget constraints and low student enrolment rather than a philosophy that supports the leader as teacher and learner.	2.96
	2	The leadership style of teaching principals in rural, remote and northern schools tends to be more collegial, dialogic and relational, rather than hierarchical and managerial.	3.06
Balancing the Dual Role	1	The instructional and administrative expectations on teaching principals make it difficult for them to balance their dual roles.	2
	2	Teaching principals develop multiple time management strategies to ensure that they can attend to teaching, administrative and personal activities.	2.32
Wellbeing	1	Work-life balance is difficult to achieve for teaching principals.	2.22
	2	Teaching principals experience guilt over the frequent need to be away from their classrooms.	2.76

In addition to asking teaching principals to rank the statements overall, they were asked to consider the statements that most affect their work with respect to: (a) issues of which teaching principals should be aware prior to making the decision to take on the role of the teaching principal; (b) issues that have the most impact on the daily work of the teaching principal; (c) issues that have the most impact on the quality of learning that occurs in the school; (d) issues that have the most impact (positive or negative) on the teaching principal's senses of self-efficacy and effectiveness, and; (e) issues that have the most impact on their personal lives. Table 4 provides the most often chosen statements related to each of these categories. Three of the 25 statements were consistently listed as one of the top three impacts on the work of the teaching principal. One statement, "the instructional and administrative expectations on teaching principals make it difficult for them to balance their dual roles," was found to be listed in the top three impacts of four of the five areas of concern. Two statements, "work-life balance is difficult to achieve for teaching principals" and "taking care of one's physical and mental health is often overlooked by teaching principals as they focus on accomplishing their teaching and administrative duties," were in the top three impacts on three of the five areas of focus.

Table 4

Research Statements Impacting Teaching, Leading and Personal Lives

Statement	**Prior to Taking On Role**	**Impact on Daily Work**	**Impact on Quality of Learning**	**Impact on Self-Efficacy and Effectiveness**	**Impact on Personal Life**
The instructional and administrative expectations on teaching principals make it difficult for them to balance their dual roles.	X Rank 1	X Rank 1	X Rank 3	X Rank 1	
Work-life balance is difficult to achieve for teaching principals.	X Rank 2	X Rank 2			X Rank 1
Taking care of one's physical and mental health is often overlooked by teaching principals as they focus on accomplishing their teaching and administrative duties.	X Rank 3			X Rank 3	X Rank 2
Teaching principals regularly are called away from their classrooms to deal with administrative issues		X Rank 3	X Rank 1		
The leadership style of teaching principals in rural, remote and northern schools tends to be more collegial, dialogic and relational, rather than hierarchical and managerial.			X Rank 2		

Teaching principals develop multiple time management strategies to ensure that they can attend to teaching, administrative and personal activities.				X Rank 2	
Teaching principals experience guilt over the frequent need to be away from their classrooms					X Rank 3

Benefits, Challenges, and Recommendations

The final section of the survey offered teaching principals the opportunity to speak about the benefits and challenges of the dual role of the teaching principal in rural, remote and northern contexts. They were also asked to offer recommendations to other educators who might be interested in this work.

Benefits

Table 5 provides the primary benefits of the teaching principalship acknowledged by respondents. Overall, being in touch with classroom realities, having the opportunity to build relationships with students, building credibility for their efforts, and developing strong relationships with teachers were mentioned most often as the primary benefits that accrued with the role.

Table 5

Benefits of the Teaching Principalship

Benefit	**N**
In touch with classroom realities	46
Relationships with students	24
Credibility	12
Relationships with teachers	11
Enjoyment of teaching	8

Influence on vision/direction	6
Learn to see the “big picture”	5
Impact	5
Instructional leadership	3
Relationships with families/communities	3

Teaching principals qualified being in touch with classroom realities by talking about their increased ability to understand the demands that teachers face, having immediate knowledge of curricula and assessment, the value of having insider perspectives on how initiatives affect the classroom, and having intimate knowledge of students’ learning needs. One teaching principal noted, “remaining connected to the realities teachers and students face in classrooms helps keep expectations realistic.” Another suggested that “being in tune with division/provincial initiatives…creates an atmosphere of ‘we are in this together and I have to do this too’. This makes new initiatives and change easier to implement.” A third teaching principal suggested, “you know the students well and have often taught them or been around them for multiple years - you get to see their growth and success over many years.”

Relationships with students were important to teaching principals, noted by a respondent who suggested that the role enabled him/her to have a “greater connection to students - you gain a greater insight into the students in the school by making stronger social connections with them and their families.” The importance of developing credibility that motivated other staff was evidenced by a teaching principal who suggested that “in a small school the rest of the staff and teachers see me in the field daily doing my best teaching just like them, they see me give it my all, so do they. I am not just sitting behind my desk.” The ability to develop strong professional relationships with teachers (Hohner & Riveros, 2017) was also important to a teaching principal who suggested that “continuous growth professionally and collegially with teachers - this strengthens the entire learning community in a school when leaders can demonstrate their own learning, as well as learn from others openly and transparently.” The satisfaction of being able to influence the teaching and learning vision of the school was mentioned by one respondent who was happy that “I get to wear both hats and have influence and say about direction of the school but still have direct involvement and impact on students.” Finally, the dual role was satisfying to some teaching principals who maintain a passion for teaching: “it keeps me doing

my first love--teaching (I don't think I would really want to do the admin if I was not still able to teach)."

Challenges

Table 6 provides the primary challenges of the teaching principalship acknowledged by respondents. The major challenges noted by teaching principals included the difficulties associated with balancing the dual role of teaching and administration, adverse effects on the classroom, the heavy workload of the position, and difficulties associated with maintaining positive relationships.

Table 6

Challenges of the Teaching Principalship

Challenges	**N**
Imbalance of the dual role	33
Adverse effects on the classroom	14
Workload	12
Relationships	11
Meeting expectations	10
Work-life balance	9
Personal wellness	7
Feeling compelled to take on more for the "greater good"	6
Leadership suffers	6
Professional growth suffers	2

When teaching principals spoke about the imbalance of the role, they most often spoke of time management issues that affected their ability to manage the dual role, or they spoke about the lack of balance inherent in the role expectations. As one participant noted, there are "too many forks in the fire and knowing which one needs attention now! It's a constant juggling act - when should admin duties trump planning for the classroom? When do I focus on issues in

other classrooms and when do I focus on issues in my own classroom?" Others spoke of the adverse effects their role often had on the classroom when they were pulled out of the class to deal with administrative or student discipline issues. Teaching principals noted that being pulled away from the classroom affected their ability to be present with students and prevented them from putting their best effort into teaching. This was mentioned by a teaching principal who suggested, "being away from the class for meetings - planned or unexpected means a lot of time planning for subs and trying to ensure the students don't lose out on instructional time." Many teaching principals spoke of the challenges associated with maintaining positive relationships (Preston & Barnes, 2017) with staff, family and community because of the "blurred lines between teachers, parents, friends...confidentiality and friendships...all those professional lines are totally blurred and coming into that situation is very difficult."

A number of teaching principals spoke to work-life balance issues related to the heavy workloads of the teaching principalship along with their high visibility in communities. As one teaching principal noted, "in rural communities, you are the principal wherever you go, whether that be the rink or church or whatever, so you can never escape from the expectations of the public." Another teaching principal suggested that this overbalance meant that there was little quality time with family where s/he could completely disconnect from work: "Time - enough time to be at home with family and to have quality time without thinking about work." Another spoke of the potential for the development of health concerns given the never-ending responsibilities of the role for teaching principals:

> I was spread too thin. Home life suffers or health suffers. After ten years in a teaching principal role, I retired because I was too sick and exhausted to keep going and felt that was my only way out. After a year of rest and regaining some of my health back, I accepted another teaching principal position in a very small school which is much less stressful. So the size of the school is an important factor.

Some of the teaching principals spoke of the additional pressures that they experienced working as a teaching principal in a small rural school. One teaching principal suggested that one of the drawbacks was "taking on too many responsibilities because you are scared of losing teachers or burning out your teachers." Another spoke of how s/he questioned their ability to provide effective leadership for the school.

There is no time for educational leadership, although you are instructed that "this is

> your number one job," but you can't find time between paperwork, parental concerns, discipline, staff concerns, and ALL the other administrative duties to do in half day, and that is not counting prep for your class and marking/assessment. Sometimes there is not even enough time to do a walkthrough of classrooms or support teachers.

Perhaps the greatest worry of teaching principals was the effect this role could have on their self-efficacy: "when you become a teaching principal, you have to come to terms with not being great in either role. Both the teaching and the administrative duties suffer because you don't have time to be great at both. Feels like you do a half-hearted job of both." Recognizing that they would not be able to live up to their vision of what it meant to be a good teacher and a good leader was significantly damaging to the self-esteem of these individuals who were generally high achievers highly committed to students, teachers, and communities.

Recommendations

Table 7 lists the recommendations offered by teaching principals for educators who are interested in pursuing this role. The top three recommendations noted by teaching principals advocated that individuals interested in the role must find ways to manage their own expectations of the role, they must focus from the beginning on finding ways to achieve work-life balance, and they must work hard to develop positive, professional relationships with staff, students, parents, and communities.

Table 7

Recommendations

Recommendations	**N**
Role expectations	13
Work-life balance	12
Relationships with staff, students, parents and communities	12
Organization	10
Teaching	9
Administration	6
Be thoughtfully cautious	6

Just do it!	3

Because of their disappointment in their lack of ability to accomplish all they hoped to achieve in their roles, teaching principals recommended that those interested in the role go into the position with realistic expectations of what they are going to be able to accomplish. A teaching principal spoke directly to this point when s/he noted: “You can't solve all the issues every day when you are jumping between admin and teaching, at some point in the day, you have to be willing to close the door and start fresh in the morning.” These individuals suggested that in order to do the work, interested aspirants must be prepared to work hard, be willing to ask for support, and “be kind to themselves” when they realize that they cannot accomplish all that they hoped to do for each aspect of the dual role. They were also adamant that the family needed to remain a priority, even though the role expectations are never-ending. One teaching principal affirmed this point by suggesting, “Remember that it will be your family at your deathbed, not your staff and students.” The need to focus on relationships with staff, students, parents, and community was stressed by another teaching principal who noted, “managing all the personalities on staff while dealing with difficult parents and students can seem overbearing at times because of the immense closeness within the community.” Another reminded aspirants to “be prepared to be asked by the community to represent the school in the community.”

In terms of recommendations for teaching and administration, teaching principals were adamant that being as pre-planned as possible was absolutely necessary, but that aspirants had to be prepared to veer off-schedule on a regular basis. One teaching principal focused on teaching when s/he suggested, “Be very well planned for your classes, and you must have good management and set up routines that the kids know well. There will be times you have to leave the classroom, and they need to be able to keep working with supervision of someone who is not their teacher.” Another suggested that teaching principals needed to “protect administrative time and learn to delegate.” A third advocated that teaching principals needed to be strategic about creating networks of professional and personal support.

> Create a small network (3 or 4 of you) of like thinking administrators in similar roles/school formations that you can network with. See who you click with and start a little email group to be able to talk with them to ask what they do in certain situations, if you need help finding a form, how to do something, what their school policies are, etc. I network with two others, and we help each other out all of the time, even though we rarely see each other in person. But, it needs to be someone you click with. We even crack jokes at each other through email when we are stressed!

Some teaching principals recommended that those who aspire to the role think strategically about whether or not they choose to live in the community in which they work, given the expectations placed upon teaching principals to be engaged in the community and yet maintain some semblance of objective distance. Others spoke of the need to engage wholeheartedly with the community in order to build the relationships necessary to be effective. As noted by one respondent, “you have to really love your school and community to do this job because that is the reason for this job. If you don't have a connection to both, the job will be harder because you are under much greater scrutiny.” Regardless of the challenges and cautions in the recommendations, however, most of the teaching principals suggested that they enjoyed their role, the relationships they created, and the professional learning inherent in the role: “My advice is...do it. Take the risk. You will be amazed at the journey of self-discovery. It will make you a stronger manager in your classroom as well.”

Discussion

The findings of the online survey offer valuable information regarding the community context and how it shapes the work of the teaching principal. As we thought about how we would categorize what constituted “rural, remote and northern” sites as constructs, members of the research team determined that we would list the terms as descriptors, include a category of “other”, and allow respondents to describe their contexts in ways that reflected their own sense of identity. The various ways in which respondents described their contexts demonstrate a type of resistance against categorizations that prescribe the identities of rural people “for” them. The rural identity is as much about the perceived sense of self based on lived understandings of the context as it is about an external definition based on population size, density, and geography.

The respondent group of this survey lived primarily in small communities of fewer than

1000 people, and they tend to work in schools of around 250 students with small staff complements. The most common school compositions were K-12 composite schools or early/middle years' schools, which is reflective of the centralizing public policies that have significantly affected the prairie provinces subsequent to the 1980s (Haynes, 2022; Newton et al., 2010). The loss of high schools in particular, and/or their regionalization in central communities, has been a common method of rationalizing services in rural school divisions, given the higher costs of high school programming and staffing specialization areas. There was also a need to be cognizant of multi-age/multi-grade or alternative programming that is commonly found in these schools, and the differential effects these alternative scheduling/programming forms have on teaching, learning, and administration. Most leadership programs do not emphasize that there are differences in how administration and teaching occur in these contexts, yet multi-age/multi-grade contexts are very common in rural, remote, and northern schools (Jenkins & Cornish, 2015; Morton & Harmon, 2018; Smit et al., 2015).

Given that significant numbers of teaching principals reported teaching more than 55% of their full-time equivalent loads, it may be that the teaching principals who self-selected to respond to the invitation are those who were facing significant worries about the nature of the position and their ability to effectively lead schools that may be in danger of school closure. Certainly, there were grave concerns about the sustainability of this model of administration over time given the very real effects this position was having on the ability of teaching principals to be effective in both roles, to achieve work-life balance, and to maintain personal wellness (Newton & Wallin, 2013; Jutras et al., 2020).

It was heartening to learn that personal time with family remained prominent in teaching principals' weekly time management of engagements. However, given that weekends were included as part of the time commitment from Monday to Sunday, there is some concern that respondents were spending fewer than 20 hours per week with family. Attention to work-life balance and personal wellness must be taken into consideration in determining how the role might be more appropriately shaped to make the role manageable for potential aspirants (Clarke & Stevens, 2009; Wallin, 2005; Wallin & Newton, 2013; Jutras et al., 2020). Interestingly, dealing with office work was the only administrative item on which teaching principals spent a significant number of hours. The remaining items dealt directly with classroom teaching or working with students. This finding likely speaks to the importance that teaching principals in this study placed

on teaching, learning, and relationships. It appears that they were more likely to put their administrative duties aside to focus on learning and relationships first. Curiously, many of the teaching principals suggested that they were unable to be instructional leaders because they had no time to do this work. In actual fact, the findings suggest that teaching principals were exemplifying instructional leadership in their daily practice, through their daily organization of the teaching context and student learning with attention to the professional and personal relationships they fostered with staff, students, and parents/community. It may be that teaching principals' understandings of the construct of instructional leadership are limited to traditional ideas around classroom visits and clinical supervision, most often purported in leadership training programs (Leithwood & Jantzi, 2008; Leithwood & Louis, 2011), and is not reflective of what they were actually doing each day that fostered good teaching and student learning. This finding support the assertion that "how principals enact leadership for learning is contextually relevant" (Wieczorek & Manard, 2018, p. 5).

It is perhaps not surprising that the fewest weekly hours was spent on areas of concern that were peripheral to their emphasis on the immediacy of the classroom context (facilities and bussing). The one area of focus that was somewhat surprising in this regard was the reported lack of time spent on securing substitute teachers. It may be that some divisions had centralized their substitute call list, and this was no longer the responsibility of local principals. It may also be that most of these communities were distant from each other, and therefore, teaching principals already knew who, and how many, substitute teachers were actually available. It may also be that these schools were small and that the principals had figured out ways to "cover" classes if staff were away (using teacher preparation periods or their own administrative time, for example), and were therefore less reliant on substitute teachers.

Three commonly noted research findings were consistently affirmed as significant impacts on the teaching, leading, and personal lives of teaching principals, and four others were acknowledged as being significant. The common finding that instructional and administrative expectations make balancing the role difficult (Parsons & Hunter, 2019; Jutras et al., 2020; Wallin et al., 2019) was consistently ranked as a primary influence on the daily work of the teaching principal, the quality of learning that takes place in the school, the sense of self-efficacy and effectiveness of the teaching principal, and something that must be considered prior to assuming the role. The difficulty in achieving work-life balance (Clarke & Stevens, 2009; Newton

& Wallin, 2013; Jutras et al., 2020) was noted to have a significant impact on the daily work and personal life of the teaching principal. The common finding that teaching principals often overlook their physical and mental health was considered to have significant impact on the personal life of teaching principals, and their sense of self-efficacy and efficiency.

In addition to affirming the significant impact of these three findings across three or more of the provided areas of focus, the fact that teaching principals were often called away from their classrooms was noted to impact the daily work of teaching principals and the quality of learning that occurred in schools. Teaching principals also affirmed that the leadership style of teaching principals in rural, remote, and northern schools tends to be more collegial and relational, which, in their view, significantly impacts the quality of learning in the school. The fact that teaching principals learn to develop multiple time management strategies was noted to have a significant impact on their sense of self-efficacy and effectiveness. However, they also acknowledged that they felt guilt over the frequent need to be away from their classrooms, and this sense of guilt had an impact on their personal lives as they had difficulties trying to disconnect from work.

Perhaps not surprisingly, given the discussion regarding the average hours per week spent on teaching, learning, and relationships, the benefits that teaching principals discussed were related to their enjoyment of the nature of the work in the classroom, the credibility that being a teacher provided them in their administrative role, and the relationships they created with students and teachers. Clearly, the respondents of this study privileged the microcosm of the classroom and the relationships that developed within it. The benefits about which they spoke then moved away from the classroom to the level of influencing the direction of the school, and eventually outwards to the value they placed on the family and community. Interestingly, there was not much emphasis in the discourse on the benefits that accrued for teaching principals at the system level of the division/district. These findings may suggest that teaching principals were most heavily invested in their local communities and therefore did not see beyond the immediacy of their daily work. However, the findings may also suggest that teaching principals in small schools often find that they are professionally isolated from other administrative colleagues in larger centers/schools who are often working at 100% administrative time, who are remunerated more highly, and whose “issues” are often considered to be more important (Newton & Wallin, 2013; Wallin & Newton, 2013). If this is the case, the finding may suggest that the role of the teaching principal may be marginalized within many school systems, and that more attention

should be paid to the nature of the work and the unique leadership skills and talents teaching principals have to offer. Otherwise, there may be little systemic incentive to apply for these positions, which could in fact add to the difficulties associated with attracting and recruiting principals in rural, remote, and northern contexts.

The challenges of the position affirmed common findings in the literature that suggest that teaching principals have difficulties finding the time to manage the dual expectations of the role (Parsons & Hunter, 2019; Starr & White, 2008; Jutras et al., 2020; Wallin et al., 2019). The volume of the workload expectations, and the need to "put out fires" or be engaged in meetings, etcetera, led to the perception that their classroom responsibilities and the need to be present with students were often adversely affected. It was not surprising that these findings surfaced given that large numbers of respondents noted they were teaching more than 55% of their full-time equivalent time allotment. Also, not surprisingly, these findings were linked to the inability to maintain work-life balance and personal wellness, with some respondents becoming very worried about their inability to disconnect from work, given the expectations placed upon them (Newton & Wallin, 2013; Jutras et al., 2020). Challenges related to maintaining professional and personal relationships in small communities (Clarke et al., 2017; Clarke et al., 2006; Hicks & Wallin, 2013; Wieczorek & Manard, 2018), where lines of authority were blurred but public scrutiny remained high, was a constant concern in rural, remote and northern communities, to the extent that many teaching principals questioned whether they wished to live in the communities where they worked.

Survey findings confirmed findings in our pilot study that indicated that many teaching principals take on much additional responsibility (extra-curricular, professional development planning, etcetera) as a means of offloading some of the responsibilities for staff members who are themselves coming close to burning out (Newton & Wallin, 2013; Wallin & Newton, 2014). Because of the ever-present threat of school closure, or calls for efficiency that tend to be "code words" for cuts to programs or staffing, teaching principals find themselves taking on more responsibility that often takes away from their ability to be effective in the dual role. As a consequence, many teaching principals spoke of the fact that they were not meeting their own personal expectations of themselves, causing them much stress and diminishing their sense of self-efficacy in the role. Many came to believe that they were not being effective in either role because the expectations were too demanding for any one person to be able to achieve. If such

is the case, then more attention must be paid to how the role is prescribed, both for the sake of recruiting and retaining principals in these schools, but also to ensure that the quality of teaching and leading is maintained.

Likely because many of the teaching principals who responded to the survey struggled with their sense of self-efficacy in their ability to do well in the role, their recommendations cautioned others who were interested in the role not to set up expectations of themselves that were impossible to meet. They also focused on the need to maintain work-life balance, and to keep at the forefront the necessity of forming positive professional relationships with staff, students, parents, and community members. And yet, similar to the findings of other researchers who have focused on teaching principals (Berndt & Fasciglione, 2015; Bouchamma, 2006; Boyd, 1996; Grady, 1990; Murdoch & Schiller, 2002; Wallin & Newton, 2014), the majority of respondents who responded to the survey enjoyed their roles, spoke of the value of the professional and personal learning that came out of their experiences, and advocated that others make the leap to take on these rewarding roles.

Given that respondents had taught on average for 18 years and had been a principal on average for seven years, their struggle to be effective in the role and to maintain work-life balance ought to be considered significant. For the most part, the respondents of this study were experienced educators who were not new to teaching, leading, or living in rural communities. To that end, we argue that it is the nature of the role itself, and how it is conceived in rural, remote, and northern schools, that must be reconsidered and redesigned. It is not sustainable to require teaching principals to teach more than 55% of their full-time allotment and expect that they will be able to be instructional role models for others, that they will be able to improve the teaching and learning outcomes of their schools, and that they will be responsible for all of the legal and administrative expectations of leadership. In fact, such expectations are likely to diminish the capacity of rural leaders to meet instructional improvement targets, and minimize the desire of others to apply for leadership positions. In no way does this improve the circumstances for rural, remote, and northern schools. Rather, such expectations will provide fodder for deficit thinking around rural education, and support the continued collapse and centralization of rural schools. The role needs to be reconceptualized to include realistic expectations that provide teaching principals with opportunities to be instructional role models, to lead with vision, and to lead healthy and happy personal lives.

Conclusion

This paper reports on only one phase of the larger study described at the outset of this paper, and therefore provides only a snapshot of the findings that we hope to disseminate as the study progresses. We believe that this examination of the role and practices of the teaching principalship extends understandings of effective school leadership and has implications for leadership development, school effectiveness, school system governance, and educational outcomes. A deeper understanding of the challenges, as well as the positive contributions, of the teaching principalship may provide policy makers with the tools to create relevant policy and facilitate effective school leadership practices in rural, remote, and northern contexts in which the teaching principalship is the norm. School divisions must learn to structure school governance roles in ways that recruit and retain school leaders, and support them in their efforts to improve student outcomes. We believe that the findings of this study can lead to the improvement of teaching and leadership practice for teaching principals in rural, remote, and northern contexts, if employers, policy makers, ministries of education, and post-secondary institutions pay attention to them. In particular, the way in which the role of the teaching principal is conceived, and the expectations of those who take on the role, have to be carefully crafted by local school divisions, and not based on rational economic models that may not support quality teaching, leading, and learning. In addition, the findings should be incorporated into leadership programs so that they become more responsive to the educational contexts within which rural, remote, and northern teaching principals work (McConnell et al., 2021; Pendola & Fuller, 2018). We also suggest that teaching principals should intentionally create professional networks that help to offset professional isolation and that allow them to co-construct understandings of what constitutes effective practice. By extension, improved teaching and leadership practices will positively affect student outcomes and help to reduce the educational outcome gaps experienced by rural, remote, and northern students.

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The Invisible Aches of Being a Black Rural Principal in a Predominantly White School

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This autoethnographic study addresses a critical gap in research regarding the experiences of Black principals, particularly those operating outside of urban settings. While there is extensive literature on Black urban principals, their counterparts in rural areas remain strikingly understudied. In response to this absence of scholarship, this autoethnographic research, grounded in W.E.B. DuBois's double consciousness, served two purposes: (a) to understand my experiences as a rural principal in a predominantly White school and (b) to understand how those experiences informed my leadership practices and self-view. Through personal vignettes, I provide a glimpse into and an examination of pivotal moments of how I experienced rural principalship by shedding light on the intersection of race, locale, and leadership. I provide a voice to the lived experiences of rural principalship, which contributes to a more comprehensive understanding of educational leadership. From this (re)examination, I illuminate how those experiences created a template for my work as a principal beyond a rural context.
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***Keywords*: African American/Black principal; rural principal; autoethnography; double consciousness**

The route to the school district administration building was drenched in two-way lanes, trees, and farmlands (pastures, tobacco, and corn mostly) on both sides, signage informing travelers to be aware of deer and farm equipment, and houses that sat in the middle of acres of land that sometimes bordered self-made car mechanic shops. Approximately forty-five miles from the interstate and with frequent moments of sketchy mobile service, I finally entered the township. It mirrored my hometown, often likened to Mayberry, the fictional town in *The Andy Griffith Show*. I made two turns from the main street to get to my destination. While I heavily depended on my car navigation system for directions, I remember no visible signs indicating the board of education building until I had arrived.

I remember entering the district administration building and being directed to head down a long and desolate hallway towards the last room on the right. With each step, my heart raced faster, pounding against my chest as if it were trying to escape my body. I wondered if I had made the right decision; however, it was too late. As I entered the room, I was greeted warmly by the administrative assistant, who informed me that the Superintendent would be with me shortly. Although I am sure my wait lasted less than two minutes, it felt as if thirty minutes had passed before the Superintendent invited me into her office. We conversed; I took copious notes and listened. Towards the end of our conversation, she reemphasized her excitement to have me as one of her principals and looked forward to working with me. However, it was her next two statements that would shed light on my future experiences and tenure in this school district.

She informed me that I was the third Black principal to work in this school district since desegregation, and the first to lead Danemead[1] Middle School is the most predominantly White middle school. She noted that Black, Hispanic, and socio-economically disadvantaged White students tend to academically underperform, particularly in English/Language Arts. Paralyzed with shock and anxiety, I managed a smile and a nod.

In this manuscript, I examine the complex realities of Black rural principals leading predominantly White schools, highlighting the inherent tensions and identity negotiations they navigate. To contextualize the urgency of this exploration, I open with this autobiographical sketch that continues throughout as vignettes, illustrating these leaders' unique experiences. Grounded in W.E.B. DuBois's double consciousness theory, I offer an autoethnographic response to the internal struggle of operating in multiple worlds. This study is set against key sociopolitical contexts from 2015 to 2021 and contributes to broader conversations about Black educational leadership beyond urban settings.

Rejecting the ubiquitous representations of Black principals as barbarians, authoritative, non-instructional leaders (Gooden, 2012) and rural spaces as intellectual desserts and non-progressive (Cervone, 2018; Marietta & Marietta, 2020), I find myself constantly challenging these deficit narratives to demonstrate that rural education is politically and socially complex, a reality that Black rural principals must actively resist

[1] A pseudonym.

(Williams & Grooms, 2015). Using a layered account approach (Ronai, 1995), I integrate autoethnographic reflection- further discussed in the methodology section -with research about Black rural principals, particularly those who lead in predominantly White schools. By telling my story and reflecting on my own experiences, I am using autoethnography to reflect on conversations with myself (Ellis & Bochner, 2000) and bring awareness of the degree of influence of rurality and race on my experiences of being a Black principal. Further, this study contributes to the conversation about Black principals beyond the urban context and highlights various factors that converge to inform these principals' experiences.

Administration, Race, and Rurality

Despite the fact that there are more than 9.5 million students attending U.S. rural schools (Showalter et al., 2023), there is limited research in the field (Azano & Biddle, 2019; LaValley, 2018), and researchers may feel forced to justify their scholarly interests in rurality (Agyepong, 2019). This deficiency in research and literature has contributed to a lack of understanding about rural schools generally and rural school leadership specifically, including the unique challenges, which often do not translate into urban and suburban locales or outside the communities in which they operate (Arnold, 2000, 2004; Arnold et al., 2005; DeYoung, 1987; Forner, 2010; Khattri et al., 1997; Lamkin, 2006). As a result, there is a knowledge gap regarding the leadership practices and the daily work expectations of rural principals (Plessis, 2017).

Moreover, this dearth in the scholarship arguably contributes to the minimization and marginalization of the needs and circumstances of rural schools, which have been highlighted due to the coronavirus pandemic (Huck & Zhang, 2021). Additionally, this dearth contributes to practices such as the inequitable distribution of resources, inadequate professional and academic support for rural school leaders (Lavalley, 2018), and the challenges to attract and retain quality administrators, including Black principals (Pijanowski et al., 2009; Preston et al., 2013; Hayes et al., 2021).

There are approximately 91,900 public school principals, with 77% identifying as White and 10% identifying as Black (NCES, 2020), in the United States. While a majority of Black principals lead schools in urbanized areas, 5% lead schools in rural locales

(NCES, 2020). This statistic is significant as the population of rural America is becoming more racially diverse, but remains overwhelmingly White (Showalter et al., 2023). Despite the accumulating evidence to suggest the relevance of understanding the experiences among rural school administrators, the factors and processes that support this dismal number of Blacks leading rural schools remain unclear.

The prevailing link between rural areas and whiteness creates barriers that push Black experiences to the margins within rural settings. Chambers and Crumb (2020) point out that educational narratives systematically ignore rural African American communities, which leads to policies and educational practices that do not meet their specific requirements despite their substantial population numbers. The lack of attention to Black rural experiences continues stereotypes while obstructing the creation of beneficial learning spaces for Black students in these areas.

A Description of the Research Context

To provide a more comprehensive insight into Danemead, I offer this description. Though rural societies are not monolithic (Tieken & Montgomery, 2021), there are more similarities than differences between my hometown and the context in this narrative than I realized. Danemead is nestled in the Southeastern part of the United States. Though many rural communities are witnessing a significant increase in the racial demographics in their population, particularly within the Hispanic community, most rural spaces remain predominantly White (Johnson & Lichter, 2022). Danemead remains majority White. Danemead's population is 86% White, 6% Black, 5% Asian, and 3% Hispanic (U.S. Census Bureau, 2020). These statistics mirror the student population at Danemead Middle School. Additionally, there were only two Black teachers on the faculty. Among families within the Danemead's town limits, almost 25% live below the poverty level (U.S. Census Bureau, 2020). Though 85% of the population has attained a high school diploma, only 14% of the population has earned a bachelor's degree or higher.

While driving through this town, an individual can become intoxicated with its rustic yet sophisticated scenery. However, if one were to drive through this town in 2022, this serenity is abruptly interrupted by the lackluster buildings decorated by political messages, such as Stronger Together, Building a Better America, and Make American

Great, Again!, which was more visible, from the 2016 and 2020 presidential races on both sides of the two-lane road. A mixture of a few restaurants, primarily dives, sits on the downtown area's periphery. Other businesses, which White residents own, are peppered throughout the town. At the time of the study, Blacks, Hispanics, or Asians did not possess any position on the city council or the school board. In the past, those candidates did not win a majority of the votes. However, in the 2020 presidential election, a Black woman, who ran for a position on the school board, received more votes than the presidential candidate, Joe Biden. Except for two Black male individuals, police officers and the sheriff's department are majority White. While the population increases, with Hispanic migrants, so do the number of churches and religious denominations. Nonetheless, churches are landmarks throughout the town; primarily, White churches are located within the township, while most Black and Hispanic churches are located outside the township.

Danemead's school system is the second largest employer. In total, there are nine schools. There are five elementary schools, two middle schools, one high school, and one alternative school. The school system is drenched in a history of the "haves" and the "have-nots." It is evident in the student demographics and enrollment, the maintenance of the school buildings, parent and community engagement, interactions with school district administration, etc. Danemead Middle is the "haves" school. It does not lack resources (i.e., financial, social capital), as many of the parents work outside the township in neighboring cities that pay more and are in positions of power (i.e., supervisor roles). While the distinction between the middle schools and among the multiple communities that make up the school district is obvious, there are moments where a mixture of class, race, and intellect come together for a common purpose – sporting events. It is not unusual for the high school football stadium or gymnasium to be filled with spectators from diverse backgrounds cheering on the home team in football or basketball. However, there are distinct lines of "seating arrangements – sitting with your own."

There is a distinct sense of pride among the locals, one that exists in varying degrees and takes on different meanings depending on individual perspectives. This pride is expressed in different ways, often allowing White residents to navigate spaces with a greater sense of freedom. Said differently, this local pride means that while everyone shares a sense of belonging, it often translates into more ease and acceptance for White

residents, allowing them to move through spaces without question or resistance. However, it is also shaped by an imbalance between conservative and liberal beliefs and values. This imbalance, in turn, fuels disparities and marginalization for many of Danemead's residents. It is at the intersection of this culture and my experiences, including my rural identity, that the following sections unfold. However, before I move forward, it is necessary to first define my understanding of rural and briefly describe the South.

Rural: What do I mean?

This study employed Helen Wildy's (2010) conceptualization of rural that was birthed while she was writing about the experiences of new principals. According to Wildy (2010), rural should be thought of as:

> *Place*: not only geography, but also culture. This includes understanding of local traditions, history, links to wider communities, and local politics and social orders…
> *People*: the interaction with adults in a school and its communities…the importance of building relationships with all members of the community…
> *System*: provisions of support within a district may be sparse due to distance among schools, but also between schools and the district office due to funding and lack of human resources, at times…
> *Self*: …the challenges and barriers of developing personal resilience and identity…high expectations of being visible [as a principal] … and dealing with professional, personal, and physical isolation. (pp.vi-vii)

Finally, it is important to remember that rurality is not monolithic. While it is critical to acknowledge general characteristics for the purpose of trustworthiness, we cannot be misguided into thinking that experiences in rural contexts are the same. Rural communities vary significantly in racial composition, economic opportunities, and sociopolitical climates, shaped by historical and regional distinctions (Cervone, 2018; Williams & Grooms, 2015). In some areas, rurality is deeply connected to Black educational leadership, while in others, it remains predominantly White and politically conservative, creating vastly different challenges for Black rural principals (Mette, 2022;

Flowers, 2020). In doing so, we will continue to widen the gap in (mis)understanding rurality.

The South

To better understand my experiences discussed in this study, it is important that I briefly discuss a historical event that forever changed the experiences of Black individuals, particularly Black principals, in the rural South. Arguably, a pivotal moment in American history was the 1954 U.S. Supreme Court ruling that declared segregation to be unconstitutional: "The Court struck down the separate but equal law and held that segregation deprived Black students of equal protection of the laws guaranteed by the 14th Amendment of the Constitution of the United States" (Gooden, 2004, p. 230). However, the Court did not set guidelines or put procedures in place to integrate schools, delaying desegregation in some states, such as Virginia. Additionally, the absence of comprehensive frameworks has also coincided with a decline in the representation of Black principals in schools, a trend supported by academic studies (Oakley et al., 2009; Fiel & Zhang, 2019). Desegregation resulted in the closure and consolidation of schools, forcing many Black administrators in predominantly Black schools to lose their jobs to their White colleagues. "In the *post-Brown* era, displacement of African American principals meant they were either demoted or fired" (Tillman, 2004a, p. 110) so that they (Black men and women) would not supervise White teachers. Tillman (2004a) discovered, "While some Black principals retained their positions after the historic *Brown v. Board of Education* 1954 decision, desegregation had a devastating impact on the closed structure of Black education and thus the professional lives of thousands of Black principals" (p. 110).

Although it appeared that Blacks would be *tolerated,* using this word loosely, into a White system, they would not have control or even an equal voice in the system (Walker & Byas, 2003). In other words, though both Blacks and Whites could attend the same schools, no Black principals were permitted to exercise authority in schools where White students attended. Tillman (2004a) stated, "Black principals were often denied the opportunity and authority to act on behalf of Black children in the implementation of desegregation" (p. 103). These changes in duties and responsibilities parted from the historical roles and caused much angst within the Black communities and more deeply

in certain demographics.

Although this ruling affected Blacks, and Whites for that matter, deeply across the nation, none were more severely impacted than Blacks living in the rural South. For the segregated "communities in the rural South, the elimination of the African American school principal also constituted the elimination of the local leader who served as head of school and often as head of the community" (Kafka, 2009, p. 327). However, for those individuals who were not fired but demoted or reassigned, they served as consultants, supervisors, elementary school principals, and administrative assistants (Tillman, 2004b; Walker, 2018). Still, none of these roles possessed the influence, power, and prestige that the principalship had before desegregation. These positions did not provide the visibility or the opportunity to interact with superordinates for career advancement (Adkison, 1981). These demotions and firings were the direct result of racist ideologies. They reflected segregationist beliefs of the South with attitudes of White superiority and the intolerance of Black principals leading students and teachers in integrated schools (Tillman, 2004b). Tillman (2004a) stated, "The racial and cultural mismatch between Black parents and the White principal and majority White teaching staff led to barriers between the school and community" (p. 122), which continues to plague communities in the rural South.

Black principals faced and continue to face challenges directly related to race and skill sets differently than their White peers. These challenges have led to voluntary and involuntary decisions to leave the profession. The *Brown v. Board of Education* decision catalyzed the displacement and eventual shortage of Black educators across the United States. However, this outcome cannot be fully understood without acknowledging the legacy of Jim Crow laws, which legalized racial segregation and prompted the Great Migration of Black Americans from the South during the late 19th and early 20th centuries (Walker, 2018). These laws, which remained in effect until 1965 (Highsmith & Erickson, 2015), not only shaped social and educational inequities but also served as the sociopolitical backdrop for Du Bois's articulation of the double consciousness framework. These laws negatively navigated the education and livelihood of Blacks, more so in the South than in any other region in the nation (Tillman, 2004b). Currently, the nation continues to grapple with the lingering effects of the *Brown*

decision. Although efforts to diversify the education workforce began more than 20 years ago, as I mentioned earlier, there has been no significant increase in the number of Black principals.

Double Consciousness Theory

To contextualize and examine my experiences, I used the culturally relevant lens of W.E.B. DuBois's (1918) theory of double consciousness. Inspired by a life experience in the South during Jim Crow, DuBois noticed how Black individuals had to navigate and operate both their Black and American identities. In his description, DuBois illustrates double consciousness as an internal struggle among Blacks as to how they view themselves while also thinking about how "Whites intentionally misrepresent and misperceive Blackness" (Goings et al., 2018, p. 35). He believed that Black people were viewed through a one-sided veil, a lens centered around Whiteness, resulting in isolation, alienation, and marginalization (Lee-Johnson & Henderson, 2019). This framework uniquely complements this examination in two ways: (1) its limited use in the study of Black school leadership in K-12 and a locale outside of urban and suburban school settings and (2) it gives a poignant voice to those who are often marginalized, and in this case triple-marginalized – being Black, a male, and serving as a rural principal in a predominantly White school. The double consciousness theoretical framework afforded me the right to and need to express myself differently, depending upon the setting, including a predominantly White rural school. This affordance is significant as the narrative provided contradicts some of the literature about Blacks and rurality, which often comes from a deficit perspective (Bell, 1990; Cervone, 2018; Lee-Johnson & Henderson, 2019; Marietta & Marietta, 2020).

Autoethnography

A combination of autobiography and ethnography, autoethnography focuses on the author's experiences of personal interactions and the culture in which those interactions occur (Chang, 2008), exploring the link between the individual and society (Noel et al., 2023). Said differently, autoethnography is an analysis (graphy) of the self (auto) to understand a specific culture (ethno) (Ellis & Bochner, 2000). The use of

autoethnography to examine my experiences as a Black rural principal of a predominantly White school was intentional. Inspired by Robin M. Boylorn's (2013) extensive research on autoethnography and race, I employ autoethnography because it is "a double storytelling form and moves from self to culture and back again" (p. 174) and often requires the layering of experiences, as I previously mentioned. According to Boylorn (2008), "Layered account methodology allows researchers to write in a stream of consciousness structure which resembles the way we think about and live in the world" (p. 415). Like many autoethnographies, this work is messy and sometimes contradictory (Boylorn, 2008). This double vision, the ability to see your own world and the world around you predominantly occupied by those who suppress you (Walker, 1983), reflects DuBois's (1918) double consciousness. While autoethnography has been used to examine leadership, more often in medical fields and large business organizations (Malakyan, 2014), educational settings are not common contexts (Lee, 2019). Moreover, autoethnography is appropriate and additive to the scholarly community in that much of leadership literature is about what leaders *ought* to (not) do, rather than about what they actually experience and do from their perspectives and interpretations (Deckers, 2020). Autoethnography can be used to highlight multiple concerns, including how culture and cultural practices shape identity, which aligns with the purpose of this research.

The primary purpose of this examination was not intended to affirm "what happened"; rather, it was my sense-making of those experiences (Weick et al., 2005). More specifically, the employment of autoethnography centralized my voice and honored the experiences and interpretations, which are often marginalized (Ellis et al., 2011) and othered (Mobley, 2019) due to race (Black) and cultural context (rural environment). As the autoethnographer, it is important to note that I do not speak on behalf of all Black rural principals, nor do I insinuate that my actions/thoughts/reactions are the best/right response; they are simply responses.

Data Collection and Analysis

The data on which this study is based took multiple forms. The first form was memory, a "building block of autoethnography" (Chang, 2008, p. 71). Memories served as "remembered moments that significantly impacted" my tenure as a rural principal (Ellis

et al., 2011, p. 175). These memorable moments selected and shaped experiences while simultaneously evoking strong emotions, which were frequently captured via journaling, which was the second form of data generation. Frequently used in qualitative research, journaling was employed to capture the ongoing interactions, experiences, and musings, as well as self-growth (Chang, 2008; Phifer, 2002). The time frame of these journals began in 2015 with a personal journal I kept during my time as a rural principal and concluded with my researcher's reflexive journal I kept during my dissertation research, which was a phenomenological study focused on the experiences of 11 Black rural principals leading predominantly White schools (Flowers, 2020). The use of the interviews conducted during my research as a doctoral student served two purposes: (1) to make the link between my narrative and the larger context of the study, and (2) to define the research in relation to others as part of the analysis; both purposes are accomplished by using autoethnography (Hays & Singh, 2023; Anderson, 2006; Custer, 2014). Five composition notebooks, used as journals, were full of direct quotes, expressions, short stories, thoughts, drawings, and perceptions.

The selection process of what to include in this autoethnographic study was complex and time-consuming. However, I selected personal rural principal experiences that aligned with the study's primary purpose, particularly those reflections with value-laden constructs that illustrated, to various degrees, my and others' (i.e., parents, community members, faculty, and dissertation research participants) beliefs and understandings of selected phenomena and how they influenced my leadership practices. While reviewing journal entries and documents, I identified words, phrases, and reflections related to race and racism, such as a drawing of the Confederate flag representing a parent's belt buckle during a conference, and insights on the superintendent's visits, where she repeatedly emphasized the school's progress. It is important to note that while memory served a purpose, it was the continuous re-reading of interview transcripts from my dissertation research, coupled with diary entries, which were recorded regularly, from personal journals, that served as the primary data.

My data analysis similarly combined several strategies. I employed Braun and Clarke's (2006) six-phase framework to conduct a thematic analysis of the data (Moustakas, 1994). The six phases of analysis included: (1) (re)familiarizing myself with

the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining themes, and (6) writing up. Multiple steps, such as organizing the data, were completed during the phases to assist with the analysis. I then read the data holistically, then selectively, and finally used a detailed reading approach to develop a sense of the overall meaning (van Manen, 2014). The iterative process revealed four primary codes, which were *double consciousness*, *racialized leadership*, *rural visibility*, and *emotional taxation*, to represent key aspects of Black rural principals' experiences. The concept of double consciousness revealed how Black rural principals must engage in internal negotiations to lead successfully while navigating perceptions from both individual and societal racialized viewpoints. Racialized leadership demonstrated how race functioned as a fundamental element in leadership assessment, which subjected Black principals to intensified oversight. Rural visibility represented the unavoidable reality of being “the only one,” where each choice and behavior held significance that extended past its immediate situation. The emotional taxation dimension highlighted how Black principals experience ongoing mental and physical exhaustion from leading in White-dominated environments while managing external demands and maintaining their own psychological health. The codes merged together to create a complex narrative that captured resistance and resilience and highlighted the hidden challenges faced by Black rural leaders while also strengthening the research study's validity and its impact on educational leadership.

Autoethnography, by nature, does not seek generalizability in the traditional, statistical sense but rather aims for *analytical generalizability* (Ellis et al., 2011). This approach allows readers to identify parallels between the researcher’s experiences and their own, fostering resonance and applicability in similar contexts (Tracy, 2010). By engaging deeply with lived experiences, autoethnography enables what Stake (1995) calls *naturalistic generalization*, where insights from a single case contribute to broader understandings of social phenomena. In this study, the experiences of a Black rural principal in a predominantly White school, while deeply personal, may reflect the realities of other educational leaders navigating race, power, and identity in rural settings. As Richardson (2000) argues, the power of autoethnography lies in its ability to evoke shared meaning, allowing readers to see aspects of themselves in the narrative and, in turn, extending its relevance beyond the individual case.

At its core, this study is about my life, an account that carries its own validity, reliability, generalizability, and verisimilitude, all of which are situated in my lived experiences (Ellis & Bochner, 2000). However, I also hope that this examination resonates beyond my personal journey, inspiring other Black principals and individuals of color working in rural educational administrative settings to reflect on their own experiences with race and rurality. By engaging with the portrayals found in literature and media, they may be encouraged to critically examine their responses and perspectives, deepening their understanding of the complexities and contradictions that shape their professional and personal realities.

The Narrator's Connection to Rural

For generations, my family has called a rural town located near the Appalachian Mountains home. I, a Black male, was born, reared, and educated in this predominantly White rural county. For most of my primary school years, I lived in one of the four all-Black communities. Presently, while this community remains predominantly Black, people from other races (i.e., Whites and Hispanics) have moved into the community. Prior to entering third grade, my mother moved to a smaller, rural farming town within the same county. Our new place of residence was a few feet from the residence of my great-grandparents, who raised livestock and farmed acres of land. I remember assisting with tilling the land and chopping wood while listening to the sounds of chickens, cows, and pigs. Across the road from my great-grandparents' house were our neighbors' pasture and peach orchard, a place my great-grandfather "worked" after decades of being retired from the local railroad. It was a neighborhood where everyone knew each other. Not a car drove on the then-dirt road, where the driver, regardless of their race, would usually signal to my great-grandparents if they were visible (i.e., sitting on the porch, under a tree, or working in the garden) with a car horn and a waving of a hand. Perhaps too naïve to understand the lack of resources available, to identify prejudices and racist behaviors, or that I was protected by my family, who accepted this way of living as the norm, I have fond memories growing up in my hometown. In addition to family, I remain in contact with friends and teachers from my hometown, for they are members of my village. Those relationships and the

desire to help others from similar backgrounds served as catalysts in my decision to become a rural educator.

Pivotal Moments

Vignette 1: Speaking as the First Black Principal

As I began my first semester in my new position as principal, the next several months were a blur of meetings. I met with numerous individuals, groups, and community organizations, who were connected, in varying degrees, to the school. While my previous principalship prepared me for a "traditional" demanding summer schedule, this experience was a familiar stranger, and I felt ill-prepared. For instance, a task that was often completed without much preparation was the robocall to the school community. However, this experience was causing me much angst. Although welcome-back letters were mailed, the school's webpage updated, and our marquee branded with important dates, the robocall was my official welcome to the new school year. More importantly, it would be the first time the school community would hear my voice. Coupled with a visual (a picture of me on the school's website and in the weekly local newspaper), a voice (the robocall), and a message (information shared in the letter and on the marquee) I widened the once-ajar door for judgement, an all too familiar consequence for being a Black principal in a predominantly White school (Flowers, 2020; Helms et al., 2010; Lomotey, 2010).

After multiple practice readings, I expected to be ready to record and send the message to over 400 parents. However, what should have been a quick, ten-minute task stretched into nearly an hour. Each time I stumbled over a word, paused at the wrong spot, had the wrong intonation, or slipped into a southern or rural dialect (Parton & Azano, 2022), I restarted the process. After numerous attempts at recording, I finally created a "flawless" message; however, I could not send it. I was paralyzed with the realization that this message could be the beginning or the ending of my career as the principal, more specifically, the first Black principal of this predominantly White rural middle school. My nagging concern was that if I did not replace the communities' apprehension and doubts (these feelings from some of the communities represented at this school, which were shared with me by several of the teachers and parents) with assurance and confidence

in their new leader, this school year would be horrific. With that looming dread, I sent the message – the first of many messages during my tenure as the principal.

Crucial changes informed by society and political agendas make the context of principals' duties and responsibilities more challenging than in the past. Therefore, being a principal is demanding. However, when you racialize the principalship, being a Black principal is even more demanding, and when locale is added, being a Black rural principal of a predominantly White rural school is most demanding (Davis et al. 2017; Flowers, 2020; Fuller & Young, 2022). Often, I reflect on my tenure as a principal, in general, and wonder how I thrived and navigated in various contexts, considering that every exchange, whether verbal, written, or face-to-face, would be relentlessly scrutinized by colleagues, teachers, students, and community members. But there was something unique about my experiences as a rural principal. At first glance, my experiences did not seem to differ from those of my counterparts, in this instance, White rural principals. For example, rural principals tend to experience, to varying degrees, continuous challenges from the lack of resources, such as funding and technology, the unforeseen expectations and responsibilities from the various communities (Arnold et al., 2005; Flowers, 2020; Hansen, 2018; Starr & White, 2008), being professionally and geographically isolated (Casto, 2016, Parson et al., 2016; Hansen, 2018), and leading schools in communities overwhelmed with persistent poverty among children and their families (Schaefer et al., 2016; Farrigan, 2017; Showalter et al., 2017; Walker, 2018). With these challenges in common, what made my tenure as principal more complex than those of other principals in similar situations? Two words: *race* and *rurality*. Both distinctive characteristics operate as tools to measure effectiveness, acceptance, and credibility for me. In fairness, my race has been an ingredient in the recipes for pleasant and unpleasant situations in all teaching and leading assignments across rural, suburban, and urban school districts. However, being a principal has been more intense and exhausting in rural settings. More specifically, from the beginning of my tenure as a Black rural principal, I thought about the role of my race more frequently.

Race matters differently depending on place (Forman et al., 1997; Lensmire, 2017). For instance, while serving as an urban administrator, where more people of color, in general, were visible in roles as educators (e.g., principals, teachers), parents (e.g.,

PTA presidents), or community members (e.g., elected politicians, business owners), my race was intersected with other identities, which strongly influenced how I viewed myself personally and professionally. Said differently, race was not always an isolated social identity. Interestingly in these places, I thought of myself, and was often described as a highly educated (i.e., a graduate of highly revered colleges and universities) Black man, who had served in many roles, including an English teacher, which is a position that is not frequently occupied by Black men, prior to leading schools. However, in this rural, predominantly White space, my self-awareness and self-consciousness, which are nestled in my race, stood at the foreground of conversations, because I believed that this community saw race alone versus race plus other factors.

In the end, I concluded that even if it is not explicitly visible, race is germane to my daily experiences. An example is the angst surrounding the content in and when to send the robocall. I became more consumed with ensuring that the message (e.g., word choice, tone) and the sound of my voice overshadowed my race. I worked hard(er) than usual to customize a message that could not be misinterpreted based on the way I sounded. In reflecting, I must ask if these pressures were based on my experiences, others' (Blacks) experiences in similar contexts, or stories I created as a means of preparing for the worst, not wanting to be caught off-guard, as we say in my hometown.

Vignette 2: Caring and Not Caring Enough; I Cannot Win

I was asked to join a potentially intense parent-teacher conference. Of course, I consented. I was very familiar with the student and their parents. Both were frequent visitors to my office. For this, I prepared to encounter multiple "-isms." More specifically, this set of parents was known for boldly expressing their racist and sexist beliefs. The parent-teacher conference concluded; the parents and child rose to leave. I noticed the confederate flag t-shirt neatly tucked inside his jeans, which provided clear visibility of the confederate belt buckle worn by the father. As they headed towards the door, the father turned around abruptly with one final thought that he delivered passionately. His thoughts were centered around his negative feelings towards me serving as the principal. He shared how his past interactions with Black people and his "upbringing" would not allow him to "respect me." But it was his last few words that have been etched in my memory.

He admitted that he neither trusts nor likes Black people but acknowledged my care for his son, conceding, “I guess I owe you a thanks.” His anguished outburst surprised everyone, including his wife, who apologized, a common practice with her, for her husband’s display of “love and support” for his son. They exited the room. Breaking the silence with her quivering voice, my assistant principal asked if I was okay. I turned to face her and a teacher, both visibly upset; I replied, “Yes, I am fine.” I was stunned – he said thanks!

Conversely, I met with Black parents who accused me of not caring enough for Black students. During our conversations, they implied that their hope and trust that I would do right for the Black students quickly disappeared as they described the situations for their children as “not changing enough” and “not quick enough,” two phrases that I heard from a majority of those parents. Ta-Nehisi Coates (2017) speaks to this tension in his critique of Barack Obama’s presidency, noting how Black leaders often carry the weight of extreme expectations from their own communities while navigating systems resistant to rapid transformation. Similarly, Paul E. Peterson (1981) examined the constraints on Black mayors, highlighting how structural limitations within governance frequently impede the reforms leaders may wish to implement. I found myself in this reality. I wanted to do more, I needed to do more, but I was constantly up against the views of others and the slow-moving train of institutional change. It was a reoccurring battle that I always had to fight internally and externally with a few Black parents in every school I served as principal.

Interactions such as the ones above were few and far between; however, they made a lasting impression on the way I served as a principal. I accepted and endured the reality that not only had I been challenged to balance the demands and expectations of my school community (e.g., superintendent) and the marginalized communities, but I needed to continuously manage the sting of disrespect on the basis of being Black which segregates my experiences from my White peers. While I acknowledge that my White colleagues may also encounter tensions and challenges in diverse spaces, some of which may be racial in nature, the experiences are qualitatively different and shaped by distinct historical and societal contexts. Frequently, I feared that my mistakes and failures would outweigh the school’s successes, and I would be mocked and relentlessly scrutinized by

community members who looked like me, shared experiences based on their race, and expected (un)merited favor, simultaneously, by community members whose racist and historical mindsets clouded their perspective of me as a competent and caring leader – an experience that Black school administrators, both men and women, encounter regularly (Davis et al., 2017; Hayes et al., 2021). Do not misinterpret me, I am not suggesting that to be "rural is to be racist, or that it is an innate feeling" (Cervone, 2018, p. 142), but rather rural societies, specifically those in the South, are often drenched in ideologies, in general, that have been ingrained over the years and become their traditions and truths. Thus, it can simultaneously be difficult to persuade rural communities to change and easier for outsiders (non-rural dwellers) to (mis)interpret rural communities' "resistance" as ignorance.

Discussion and Final Thoughts

As I reflected on my tenure as a rural principal of a predominantly White school, I concluded that the process provided me with meaningful personal and professional growth that I never anticipated. From the first anxiety-filled day of being saturated with the district, school, and community expectations, to the final year of successfully demonstrating how to lead a rural school by galvanizing diverse communities for the sake of children, I felt like I had been thrown into a difficult culture that provided little time, a privilege that often is overlooked, to become acclimated. Despite the initial feeling of the (im)possibility of each expectation, each year became easier to manage and to lead. Fortunately, my initial frustration, occasional self-doubt, and yearning to be perfect morphed into deeper self-awareness and resilience. More importantly, I was reminded of the necessity of failure as a part of growth, of the importance of creating an environment conducive to working and learning and of the power of collaborative leadership, including partnering with myself by valuing my rich lived experiences.

The moments and experiences I have described are defining precisely because they collapse [every day] experiences of race with modes of researching (ourselves) in specific settings and cultures. These moments require analysis and critique to consider the nuances of race/d experiences in rural White spaces and why they are important. *Relevant* and *Reflexive* are two stances from the work of Robin M. Boylorn (2011) on race

and reflexivity that provided me with the position to identify an overall theme that emerged when I organized the highlighted experiences coupled with data related to this analysis and critique employing DuBois' double consciousness. This theme is *invisible ache* – a quiet means of living through any oppressed experience. However, this experience also revealed a deeper reality about Black educational leadership in rural spaces, one that speaks to the broader implications of this work. Black rural communities are not simply waiting for representation; they are waiting for evidence that their educational needs are being met fairly and equitably. They seek leaders who not only occupy positions of authority but also challenge the systemic barriers that have historically limited access and opportunity. In rural environments where political and cultural constraints often dictate the pace of educational change, Black leaders bear the weight of both expectation and resistance. The reality is that Black school leaders must constantly prove themselves, navigating the tension between meeting the needs of marginalized students and operating within predominantly White structures that may resist change (Flowers, 2020). This dual burden reflects the invisible taxation placed on Black rural leaders, a challenge that must be acknowledged in leadership discourse (Watson & Baxley, 2021).

Throughout this manuscript, I shared moments, analyzed through the double consciousness lens, that caused me to process at a slower pace and (over) think situations prior to responding. Often, I was required to negotiate expressing my emotions, such as frustration, shock, or hurt, as I did not want to be perceived as incompetent, angry, or lacking control of my emotions – a result of living in two worlds (DuBois, 1918). For example, when families wore confederate attire (i.e., shirts, belts, hats, and jackets), I had to debate internally and ask the questions: Was this an intentional microassault, a retaliation against the school district's policy of wearing clothing that is considered offensive, or was it their form of displaying patriotism? Regardless, at the time, I believed I could not display my discomfort of being in the same space with White supremacy-oriented paraphernalia. Another example is the extended time and effort it took me to click send on the first schoolwide electronic (i.e., telephone/mobile) message and to be transparent in those messages that followed. In reflection, I realize that my hesitation in sending messages was not just about getting the words right. It was about avoiding the possibility of saying something that could reinforce stereotypes, create tension, or lead to

scrutiny in ways that my White counterparts likely never had to consider. Claude Steele (2010) describes this as stereotype threat, the heightened self-awareness and behavioral adjustment that occurs when one fears confirming negative societal perceptions about their group. In this role, I was not just leading a school; I was constantly managing perceptions of my leadership in ways that went beyond the job description.

These concerns or feelings align with DuBois' explanation of double consciousness. With other Black individuals, I want them to know that despite my education and class differences, which may separate us, I am still Black and not removed from common experiences that are created by others' perceptions. At the same time, when conversing with Whites, especially those who are unfamiliar individuals, I want them to know that I am educated and possibly in the same class as them, but for different reasons. This is not a form of arrogance or an act of "I made it!" but a form of the continuous feeling I have of proving myself, and explaining, through my work, what my race, experiences, and professional and personal qualities mean. These constant internal debates impact/ed me not only psychologically (i.e., feelings of isolation) but physiologically (i.e., gastric distress).

Through this experience, I was also reminded that leadership is not meant to exist in isolation. While I carried much of the responsibility, I could not lead effectively without collaborative structures that supported both my work and the vision for the school. A good leader does not stand alone. The expectation that one person, particularly a [Black] principal in a culturally complex space, can single-handedly transform a school is not just unrealistic, it is unsustainable. My ability to lead effectively depended on a coalition of educators, staff, and community members who were willing to engage in the work alongside me. Building a school culture where all students felt seen required more than my leadership; it required a tribe. My tribe consisted of a Black female and a White male and female. All were products of the Danemead community. Research on leadership in marginalized communities affirms that equitable and sustainable change is rarely the work of a single individual but rather the result of collective efforts and shared responsibility (Martinez & Welton, 2015).

While my previous experiences as an urban principal inspired my leadership approaches as a rural principal, this experience, which included those pivotal moments,

significantly shifted how I led and resulted in a “framework” for rural school leadership. Collectively the two vignettes in this manuscript commemorate important moments in my life as a rural Black principal in a White school setting. The vignettes offer a commentary on the invisible aches that Black rural principals in White educational settings endure; more specifically, the consequences of racism in multiple forms, such as limited social capital and being seen as a space invader on the psyche, how my presence disrupted, both positively and negatively, the community, and the failure to acknowledge the wealth of knowledge and experience I brought to the school.

In summarizing my rural principal experience, I do not label it as positive or negative. Instead, my experiences are results. They are results based on the interactions between Danemead’s culture and mine; more specifically, the beliefs, attitudes, values, and behaviors of the residents in Danemead and me, the sole Black principal. Utilizing autoethnography was complex as I took diary entries, drawings, and memories to create this narrative. However, I relived, examined, interrogated, deconstructed, and reconstructed those moments to make a deeper meaning of those experiences. The shared vignettes are not meant to define my time, in totality, as a rural principal in a predominantly White school. Rather, they were pivotal moments that caused me to investigate my experiences, in general, as a Black rural principal and how race informed those experiences. By completing this interrogation, I wonder whether my experiences or feelings would have been different if I had a Black mentor with rural principalship experience. Research on the influence of shared race and experience for Black leaders is critical, as they often confront unique barriers in administrative practice (Rudel et al., 2021). These challenges include microaggressions and cultural dissonance within predominantly White environments. Scholarship on Black principals consistently reveals that they face limited mentorship, exclusion from informal networks, heightened performance expectations, constrained decision-making power (Mabokela & Madsen, 2003), and restricted advancement opportunities (Grubbs, 2021; Jackson-Dunn, 2018; Richardson, 2013). However, what remains underexplored is how locale, particularly rural contexts, shapes these barriers**.**

Earlier, I acknowledged that my race was the most distinctive characteristic. Within the fabric of the United States, race has been a defining issue since before its formal

existence. However, race is intertwined in every aspect of Blacks' lives and often operates as the primary factor in determining "access to resources and social advantages" (Bernard & Neblett, 2018, p. 287; Brown et al., 2007); this factor is currently under attack by individuals who believe racism no longer is an American issue. Nonetheless, race informs meaning-making for individuals (Flowers, 2020) and serves as an assessment instrument in multiple ways that include how Blacks view their lived experiences, and how Blacks' lived experiences differ from and align with other ethnicities, such as individuals who identify as White (Young, 2004). My time as a rural Black principal ended after three years. The students, faculty, and community were in a better place academically, professionally, and culturally. Academically, student performance saw measurable improvement, particularly in English/Language Arts, math, and writing. Professionally, faculty and staff received targeted instructional support, which led to improved instructional practices that ensured all students would experience success. Culturally, the school experienced a shift toward a more inclusive and engaged environment. While some faculty and staff transitioned out due to retirement or misalignment with the vision, those who remained were celebrated for their achievements and supported for their innovative approaches. Additionally, parental engagement increased, not only in terms of their involvement in their child's learning process but also through active participation in school decision-making. My decision to leave this position was not easy and was based on the next steps to achieve my professional and personal goals. I honestly enjoyed my time working in Danemead's community. I remain in contact with several individuals, including teachers, principals, students, parents, town council members, and the superintendent, who is now retired. In the end, my experiences as a Black rural principal reminded me of the way race continues to influence how I am seen and interpreted. I am between two worlds – Black and American.

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Threads of Tradition: Connecting Rural Voices to Future Generations

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This project investigated and documented oral histories, with the goal of preserving and understanding the experiences, perspectives, and cultural heritage of individuals living in rural areas. It addresses the potential loss of valuable narratives and insights due to the changing landscape of the region. Existing knowledge about rural communities often focuses on statistical data, economic indicators, and policy analyses, providing limited insight into the lived experiences and personal stories of rural residents. Oral histories offer a unique and invaluable source of information, allowing researchers to capture the nuanced narratives, traditions, and challenges faced by rural people groups in their own words. While there have been studies examining various aspects of rural life, including economic challenges, social dynamics, and cultural transformations, there is a dearth of comprehensive oral history projects that center specifically on the lived experiences of rural people. By filling this gap, the project contributes to a more holistic understanding of rural communities, shedding light on their rich cultural heritage, community dynamics, and the impacts of societal changes. Making use of digital presentations and tools, oral history interviewers examine and analyze the rural narratives collected, focusing on what makes communities and neighborhoods in rural areas truly great, i.e., stories of their people.
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***Keywords*: Oral histories, digital analysis, preservation, rural stories**

Permalink for Digital Project

https://sites.google.com/view/the-stories-we-tell-preserving/home

Situated within rural teaching communities, we, as teacher educators, want our pre-service teachers to recognize the value of oral history as a teaching and learning tool. Like a well-worn quilt, the stories passed down from one generation to the next are woven together with the dialect, culture, and lived experiences of an often-overlooked people group that is more nuanced and distinct than any written text. Each narrative is a colorful scrap of memory, stitched together to reveal a richer, larger image of cultural heritage, community dynamics, and the impacts of societal change on rural people, whose marginalized voices are often hushed by mainstream research (Currid-Halkett, 2023). Collecting and analyzing these stories binds the diverse perspectives together with a shared thread to develop a culturally responsive teaching approach that highlights cultural knowledge and experience to make learning more relevant and effective.

Rationale/Goals

Our goals for this project were two-fold. We wanted to raise awareness of the value of highlighting the stories and history of underrepresented people groups and places (specifically rural areas) and to teach about the role oral history plays in understanding our worldview. Our project serves as an academic heirloom, aimed at helping current and future generations of K-12 students understand more about who they are, where they come from, and how their own stories can shape the future of rural communities.

Project Details

At its conception, the project aimed to collect narratives from rural Tennesseans. Centered on the research question “What are the experiences, perspectives, and cultural heritage values of individuals living in a rural area?” students, i.e., teacher candidates, were tasked with identifying and interviewing people representative of rural communities. Upon identification, we stressed the importance of obtaining interview consent. Rather than asking teacher candidates to draft their own consent letters, we elected to draft one that outlined the project’s purpose, procedure, confidentiality assurance, and other pertinent details. Ensuring understanding of informed consent, we turned our attention to the next phases of the project, i.e., interview questions and interview protocol.

The development of interview questions began during our respective classes, where we sought input from teacher candidates (i.e., interviewers). Couched within the interview protocol guidelines, we stressed the freedom to pose questions not on the suggested list. We also encouraged the interviewers to ask any questions that may organically arise. Following this, we discussed audio recording vs. video recording the interview. While our initial thoughts for the oral history collection process centered on videoing, we begrudgingly admitted our own personal aversion to being videoed and decided to allow the person being interviewed to determine preference. It should be noted that the majority of participants elected to be audio recorded. Upon completion of the interviews, teacher candidates began the analysis phase of the project.

To capitalize on the nuances and everyday lived experiences of people in rural communities, teacher candidates analyzed their interviews by identifying recurring themes, topics, and patterns while noting their key takeaways and insights. After analysis, we challenged them to create a culminating project that summarized their research findings through a digital format of their choice, i.e., presentation tools such as Prezi, Emaze, iMovie, and Canva. The technology presentations served as an additional way to document the oral histories; storing them on the project website ensures future accessibility and celebration of the people who graciously shared their stories. Additionally, they function as resources for future education endeavors, ours and those of our teacher candidates. Because place is at the heart of the project, we also chose to map the various rural locations represented using Google Maps. The interactivity of Google Maps allowed us to highlight the rural areas with photos and text, thus providing a platform for students to engage in geographical exploration. Additionally, the ability for students to contribute their own observations and reflections on the map promotes active participation and collaborative learning, ultimately enriching their appreciation of the diverse landscapes and experiences found in rural regions

Similarly, two field trips emphasizing rural settings informed our knowledge base of the intersectionality of place and people (Biana, 2023; Crenshaw, 1989). Each trip and oral history interview allowed us to delve more deeply into the concept that place, particularly rural places, shapes human experience and helps people understand themselves and the world (Biana, 2023).

Statement of Impact

This oral history research project sought to preserve and illuminate the rich oral histories of rural Tennesseans, capturing their unique experiences, perspectives, and cultural heritages. By prioritizing personal narratives over statistical data, the project addressed the often-overlooked voices of rural residents, thereby enhancing understanding of their diverse realities and contributions. The outcomes not only document these invaluable stories but also foster connections through technology-driven presentations, ensuring that these narratives remain accessible for future generations, especially within the K-12 classroom.

Technology Description

Housed on a Google Sites website, the project incorporated various technology tools. Specifically, we employed Google Maps to pinpoint the rural areas represented. Audio or video versions of the oral history interviews were recorded using tablets (i.e., iPads) or smartphones, which were then uploaded to Google Docs and transferred to the project website. Additionally, interviewers accessed multiple digital presentation tools to create digital story summaries. Representative tools are listed below:

- Emaze
- Canva
- Prezi
- iMovie

Throughout the project, to promote mobile accessibility, we incorporated QR codes for various project documents.

Funding Statement/Agency

A Rural Reimagined Faculty Grant supported this project. The funding agency aims to support innovative initiatives that enhance and potentially transform rural living by addressing rural-facing issues.

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Kristen Pennycuff Trent, Ph.D., is a third-generation educator and professor of literacy education at Tennessee Technological University. After teaching at the elementary level for over six years in rural, Title I schools, she has spent the last twenty-four years working with undergraduate and graduate programs. She is a past president and past district coordinator of the Literacy Association of Tennessee, and she served as the co-editor of *The Tennessee Reading Teacher* journal for three terms. As a grant writer, Pennycuff Trent has been awarded over $ 2.4 million for her work in literacy professional development for PreK-12 educators. When not working with TTU or the Literacy Association of Tennessee, she can be found spending time with her family at their Christmas tree farm, cooking, or reading.

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TPRE Editorial Board for Volume 15, Issue 1

Call for Manuscripts to *Theory & Practice in Rural Education*

http://tpre.ecu.edu

Schedule and Submission Dates

Spring 2026 January 15th General topics

Fall 2026 March 27th General topics

The *Theory & Practice in Rural Education* editors would like to invite authors to submit manuscripts for forthcoming issues. *Theory & Practice in Rural Education* is a peer-reviewed journal published electronically twice yearly, in 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.

If you are interested, please refer to the Author Guidelines on our website for further information on the submission process.

All proposals will be subject to double-blind peer review.

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