

Summer 2022

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Gresi Bonomo Irdam

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AN EXAMINATION OF ATTACHMENT AND ASPIRATIONS IN DIVERSE
RURAL YOUTH: THE ROLE OF PEERS AND TEACHERS
by

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Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Philosophy in

Educational Psychology and Research

College of Education

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2022

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DEDICATION

This dissertation is dedicated to my grandparents, my guardian angels, Ester-Rahmi Siyman, who passed away before they could see my accomplishments. I hope I have made you two proud!

ACKNOWLEDGEMENTS

This dissertation would not have been possible without the support of my mentors, friends, and family. To my advisor, Dr. Matthew Irvin, your insightful and encouraging support developed me into a better writer and a researcher. To my second mentor, Dr. Angela Starrett, your endless guidance, and high expectations made my Ph.D. process as an invaluable and rewarding learning process. I am privileged to have two of you as my mentors, without a doubt, I would have not been where I am today without your unconditional support and guidance. To my committee members, Dr. Melissa Duffy and Dr. Gregory Trevors thank you for all your constructive feedback and support.

To my Noyce mentors, Dr. Jan Yow and Dr. Christine Lotter, I have been honored to work under your supervision, thank you for introducing me to rural education and supporting each step of my Ph.D. process. To Dr. Christine DiStefano, thank you for your unconditional support and all the academic guidance. I am lucky to have met you to get more details about our program, which lead me to pursue my doctoral degree. To Dr. Kelly Lynn Mulvey, I am thankful for your encouraging and inspiring support.

I also would like to acknowledge all my graduate friends, Alyssa Raygoza, Jennifer Harrist, Julia Hodge, Steve Barth, Jiali Zhang, thank you for always encouraging and supporting me. To my all professors at the Educational Psychology and Research program, I am deeply appreciative for all you have taught us and the contributions that

you have made for us to improve as young scholars. I had the honor of being taught by you.

To Secil Gonultas, Kubra, Fatih, & Allen Albayrak, Cansu Tatar, and Hande Ulus, thank you for allowing me to break my prejudices! I will always cherish to the memories we have created. To my Columbia family, Beatriz Fernandez, Gift Meta, and Trisha Sitti, you made Columbia my home, away from home, thank you for always providing me with endless strength and comfort.

To my chosen family in Turkey, Merve, Hasan, & Alp Iyi words cannot express the amount of support and encouragement that I felt from you, without this support I would have not made to this point.

To my family, Hulya Irdam, Izak Irdam, and Ebi Irdam thank you for always sending love and endless support from far away, this dissertation would not have been completed without your infinite encouragement, although you did not like it, thank you for making my life as comfortable possible in the US and lastly, to my husband, Hammam Alazwari, thank you for being one of the strongest support systems over my doctoral journey, you will always be my muse for inspiration and challenge.

I love and appreciate all of you!

ABSTRACT

This dissertation consists of three studies that examined diverse rural youths' educational and rural aspirations. These studies have the potential to inform rural communities, educators, and parents by providing novel understandings of how peers and teachers in mathematics and science classrooms influence diverse rural youths' rural attachment, and aspirations (i.e., educational, rural residential, community, and proximity). Thus, the purpose of this dissertation was to investigate rural teachers and their diverse students from White, African American, Hispanic, and Native American backgrounds. In particular, the studies within this dissertation examine how teachers' social connectedness to their rural communities relates to their teacher leadership abilities, and the influence of peers and teachers in mathematics and science classrooms on youths' rural attachment, educational expectations, and aspirations (i.e., rural residential, community, and proximity).

The purpose of Study 1 was to examine the relationship between rural students' perceptions of their teachers' teacher leadership abilities and teacher social connectedness to their rural school communities. Participants of this study were 19 mathematics and science teachers who participated in a 5-year teacher leadership professional development program and their students (N = 6900). This study used mixed-methods analyses. The results from interviews revealed four teacher proximity groups: homegrown, transplant, more socially connected commuter, and less socially connected commuters. Then, one-way ANOVA was used to examine if teachers' teacher leadership abilities differed based

on teachers' proximity. Results revealed that based on the perceptions of teachers' students, transplant teachers had significantly lower mean score in teacher leadership abilities compared to other groups. Additionally, interviews confirmed these findings while showing the strength of other groups. Overall, results suggest that teachers' social connectedness to their schools may promote teacher leadership.

The purpose of Study 2 was to investigate how race/ethnicity moderated the relationship between peer and teacher classroom belonging in mathematics and science classrooms with rural attachment, rural community, and proximity aspirations among diverse middle and high school students. This study was a part of a 5-year teacher leadership development program. Thus, in our analyses, students were nested in their teachers. This study included 20 teachers and 6616 students. Results revealed the influence of peer and teacher classroom belonging on diverse rural youths' attachment and aspirations. Teacher classroom belonging had a positive influence especially for Hispanic rural youth compared to White youth. However, peer classroom belonging had an adverse impact on Hispanic youths' rural attachment. Results also indicated that while minority youth had a lower rural attachment, African American youth had higher community aspirations. Overall, increases in perception of peer and teacher classroom belonging have positive influences on rural youths' attachment and aspirations. Our findings suggest that fostering teacher classroom belonging among minority youth in rural communities may be an effective path in promoting attachment and aspirations.

The purpose of Study 3 was to investigate whether the influence of peer and teacher classroom belonging were as well evident on diverse rural youths' educational expectations and rural residential aspirations. Participants included 6616 science and mathematics

students in one rural Southeastern state. Participants of this study were part of a larger teacher leadership developmental program. Thus, in the analyses students were nested in their teachers ($N = 20$). Using multinomial logistic regression, we estimated a regression model on the two outcome variables (i.e., educational expectations, and rural residential aspirations). Findings indicated that higher ability beliefs in mathematics and science classrooms were related to expectations of completing more education for Black, White, Hispanic, and youth of other races/ethnicity. Additionally, when White students and students of other races/ethnicity experienced more classroom support from their peers, they expected to obtain more education. Black youth who had higher teacher classroom belonging were more likely to have rural residential aspirations compared to nonrural residential aspirations. On the other side, Black, White, and students of other races/ethnicity were more likely to have indecisive rural residential aspirations. Overall, findings provide both theoretical and practical implications for rural parents, teachers, and school counselors.

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CHAPTER 1

INTRODUCTION

This dissertation will consist of three studies that examine diverse rural youths' rural attachment and aspirations (i.e., educational, rural residential, community, and proximity). The first study will examine how teachers' connectedness to their rural communities promotes their teacher leadership abilities from the perspectives of their students. The second study will investigate how race/ethnicity examines the relationships between peer and teacher classroom belonging to rural attachment and rural aspirations in terms of community and proximity. Lastly, the third study will assess whether the relationships between peer and teacher classroom belonging to rural youths' educational and rural residential aspirations could be predicted by students' race/ethnicity. This chapter will provide the overarching principles and foundations for this dissertation.

Background

Despite the increased attention rural America has received over the past years, the obstacles many students experience in rural areas are still not getting the attention that they deserve (Showalter et al., 2019). This is because about one in every five students in the United States (U.S.) attend a rural school (Showalter et al., 2019), suggesting that addressing the needs of these students are vital and emphasize the importance for researchers to strengthen our understanding of rural education and its stakeholders (e.g., rural teachers, communities). Moreover, particularly in South Carolina, rural schools have

some of the highest rates of students of different races/ethnicity (i.e., diversity index = 47.3), and poverty level (21.4%) is one of the highest in the U.S. (Showalter et al., 2019). Thus, understanding lived experiences of rural youth especially in the southeastern US, particularly with rural youth from White, African American, Hispanic, and Native American backgrounds warrants a new examination.

The first study in this manuscript investigates rural teacher leadership. Teacher leaders take different roles including nurturing relationships with students, redesigning schools, and participating in problem-solving activities (Silva et al., 2000). Further, social connectedness to the school community is as well influential for effective teaching (Darling-Hammond, 2005). In particular to rural communities, social connectedness is particularly important as it symbolizes an important aspect of teacher leadership identity (Lotter et al., 2020). Research documented the positive impact of teacher leadership activities on overall school improvement (e.g., Leithwood et al., 2010); however, whether teachers' social connections to their communities relates their teacher leadership abilities within rural schools received less attention. This is important to examine because when teachers are teacher leaders in their classrooms, their impact on their students is powerful.

Moreover, the second and the third study examine diverse rural youths' educational expectations (i.e., the amount of education actually expected to achieve, Reynolds & Pemberton, 2001), rural residential aspirations (i.e., youths' desire to remain in or return to rural community, Petrin et al., 2014), rural attachment (i.e., place attachment that forms youths' sense of belonging to their community and the people within, Howley, 2006), and rural aspirations (i.e., *community*, youths' likelihood to be a part of their community; *proximity* youths' desire to live close to friends and family, Howley, 2006;

Petrin et al., 2014). Examining youths' rural attachments, educational expectations, and rural aspirations is important because, in the past years, youth outmigration has been a concern in rural communities as it threatens the growth of the rural communities (Petrin et al., 2014). Specifically, while prior studies define leavers as high achievers who are more likely to leave their rural community for educational and occupational opportunities, stayers often obtain less education and gain low skill levels of employment (Mills & Hazarika, 2001). Most recent studies, however, reveal that high achievers aspire to return to their community, but may be concerned about the poor employment perceptions (Petrin et al., 2014).

Prior studies examined rural youths' rural attachment and aspirations in the rural Midwestern U.S. (Assouline et al., 2020), in rural Pennsylvania (Wang et al., 2020); however, research examining factors that would influence rural youths' rural attachment, educational expectations, and rural aspirations, especially in other regions of the U.S. with youth from various racial/ethnic background has been lacking. Moreover, prior studies have not yet examined these variables through contextual factors (e.g., peer and teacher classroom belonging, and ability beliefs). Thus, studies in this manuscript examine rural attachment, educational expectations, and rural aspirations of diverse rural youth in the southeastern U.S.

As described above, the rural Southeastern U.S. is one of the states with high diversity and the poverty rate. This was also evident in the studies that combine this manuscript. Specifically, the sample includes rural Title 1 schools with a large percentage of minority students (68%). It is important to note that the rural Southeastern U.S. is changing. There are significant increases in STEM fields opening employment

opportunities in manufacturing, and information technology fields (Campos Research Strategy, 2014; Lund et al., 2019).

Prior research has shed the light on the positive aspects of schooling experiences on overall youths' lives (Irvin et al., 2011). In particular, teachers have a great impact on their students' lives (Starrett et al., 2021). Similarly, compared to peers, teachers are more influential in fostering students' motivation (Hardré et al., 2009). However, we do not know if these positive influences of peers and teachers are evident in youth's rural attachment, educational expectations, and rural aspirations (i.e., rural residential, community, and proximity aspirations).

The goal for rural community sustainability is that rural youth to pursue post-secondary education and after completing their degree, return to their rural community to unitize the abilities and skills that they obtained from their education to support and revitalize their community. Rural communities are unique in terms of their social capital (e.g., close-knit relationships with the individuals in the community, Byun et al., 2012). Therefore, the hope for rural community sustainability may be nurtured by rural youths' belongings to their peers and teachers in their classrooms. Perhaps, when rural youth have higher belonging to their peers and teachers, they may be more likely to aspire to remain in or return to their communities. Consequently, they would be supporting the development of their rural communities.

Meeting the needs of rural adolescents requires that we examine their experiences from multiple perspectives in order to develop an informed understanding of their attachment and aspirations. Accordingly, the overarching goal of the studies in this dissertation is to investigate rural teachers' teacher leadership abilities and examine diverse

rural youths' rural attachment, educational expectations, and rural aspirations (i.e., residential, community, proximity) from multiple perspectives (e.g., by examining their belonging to their teachers and peers in their classroom). This is important because if we can identify skills and dispositions needed to foster attachment and aspirations of diverse rural youth, we can support their transition to adulthood, and perhaps curb outmigration.

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CHAPTER 2: STUDY 1

**SCIENCE AND MATHEMATICS TEACHERS' PROXIMITY AND SOCIAL
CONNECTEDNESS TO THEIR COMMUNITY PROMOTING TEACHER
LEADERSHIP: A MIXED-METHODS ANALYSIS**

Abstract

Prior teacher leadership research has concentrated on improved instructional quality, teacher retention, and teacher satisfaction. In contrast, little is known about how teaching in the community promotes teacher leadership in rural areas. Thus, the current study explores the relationship between students' perceptions of teacher leadership and teachers' social connectedness to their rural school setting. Participants included 6900 rural middle and high school students and 19 teachers. Mixed methods analyses were conducted. Qualitative results revealed four teacher proximity groups: homegrown, transplant, more socially connected, and less socially connected teachers. Statistical analyses demonstrated that based on the student reports, transplant teachers had lower mean score in teacher leadership compared to other groups, while analysis of the interviews revealed the strengths of other groups. Overall, our findings suggest that while teachers' social connectedness to their schools may promote teacher leadership, teachers who are intentionally disconnected from their rural communities can also become teacher leaders.

Keywords: *rural teacher leadership, rural teachers, teacher proximity*

Irdam, G., Starrett, A., Yow, J., Lotter, C., & Irvin, M. J. submitted to Journal of Research in Rural Education

Introduction

A teacher's social connectedness to their school community is essential for teachers as research shows it to be one of the most powerful components of effective teaching (Darling-Hammond, 2005). Indeed, especially in rural areas, teachers' social connectedness (involving or connecting with the broader community including attending church, shopping, or eating at local stores) to their community represents an important aspect of the teacher leadership identity formation process (Lotter et al., 2020). Teacher leaders help redesign schools, nurture relationships, mentor and provide their colleagues with professional development opportunities and engage in problem-solving activities (Silva et al., 2000). In rural areas, however, these leadership abilities may be missing (Murphy, 2005) because, in general, compared to schools in other locations, rural schools have fewer instructional resources (Goodpaster et al., 2012) which have been cited as a reason for rural teacher shortages (Tompkins, 2003). Social capital and unique community ties can be resources for attracting and retaining teachers (White & Reid, 2008; Huysman, 2008) which suggests that rural teachers may be more likely to remain in rural classrooms when they have personal connections within the rural communities (Arnold et al., 2005). Prior studies demonstrate the importance of place and community for rural teachers (Gruenewald, 2003; Starrett et al., 2021; White & Reid, 2008); however, we do not know whether these close-knit relationships develop rural teachers' teacher leadership skills. To date, research mostly concentrates on the effects of community connectedness on rural teachers' job satisfaction (e.g., Huysman, 2008; Kim & Loadman, 1994) and teacher retention (Cochran-Smith, 2004). In contrast, less attention has been paid to the influences of rural teachers' social connection to their

community on their leadership roles within rural schools. To address this gap, the focus of the current study is on investigating whether teachers' social connectedness to their school community promotes teacher leadership.

Theoretical Framework

Social capital theory (Coleman, 1988) and the Communities of Practice Teacher Leadership Model (CoPTL, Campbell et al., 2019) provide useful frameworks for understanding the effects of rural social interactions on teacher leadership. Social capital is the formal and informal bonds between individuals and within their communities that provide social support and the privilege, one gets from these relationships (Coleman, 1988; Halpern, 2005; Putnam, 2000). The social capital theory, explains the impact of social relationships on individuals and posits that strong community connections in rural communities facilitate positive behaviors (Coleman, 1988). When individuals in a community form close-knit relationships, they generate trust in each other (Coleman, 1988), which in turn, facilitates collaborative behaviors (Coleman, 1990). Further, one of the qualities of teacher leaders is collaborating with others and sharing their expertise (Gonzales & Lambert, 2001). If we refer to social capital as resources inherent in the structure of relationships in a supportive environment (Coleman, 1988; Dika & Singh, 2002), then we can suggest that when teachers are using their teacher leader abilities, they are also strengthening their social capital. Additionally, we utilize CoPTL (Campbell et al., 2019) to understand teachers' perceptions of their leadership experiences due to social interactions. This model suggests that teachers' interactions (communities of practices-where teachers work together within or outside of their schools' communities to develop effective teaching practices) with others promote their teacher leader identity formation

(Wenner & Campbell, 2018). These social interactions allow teachers to have a clearer perspective on their profession and the role they play within it, as well as encourage them to take initiative in future leadership actions (Criswell et al., 2018).

Rural Teachers and their Social Connectedness

While teachers' abilities are positively related to students' achievements (Darling-Hammond, 2004), teachers' knowledge of their students impacts student achievement (O'Connor & McCartney, 2007). This is noteworthy because rural teachers' role in creating and nurturing substantial relationships with their students is instrumental (Hardré & Reeve, 2003; Irvin et al., 2016; Starrett et al., 2021). Specifically, rural teachers can build unique connections with their students that can impact their learning and extend beyond the school day (Berry & Gravelle, 2013; Hardré et al., 2008). As a result, rural schools are often considered integral parts of the social and familial circles of the residents (Herzog & Pittman, 1995). The experiences between rural teachers and their students can be more personal and maybe ingrained into the social fabric of these communities (Herzog & Pittman, 1995). Although rural students may experience unique forms of social capital with their teachers in rural communities, rural students also tend to encounter inequitable learning opportunities because the number of high-quality teachers living and teaching in rural areas is limited (Fry & Anderson, 2011; Yarrow et al., 1999). This highlights the importance of teachers' connections to their communities and their understanding of the local area (Reagan et al., 2019).

Keeping Rural Teachers in Rural Classrooms

Rural schools suffer from many unique challenges compared to urban and suburban schools. For example, rural schools experience difficulties in recruiting and

retaining highly qualified teachers (Kossar et al., 2005). These issues are often exacerbated for mathematics and science teachers (Friedrichsen et al., 2007). Further, rural teachers often report experiencing both geographic and social isolation, (e.g., being the only teacher in content and at grade level, Baird et al., 2006). While interpersonal relationships, community ties, school structures, and professional development in rural communities are categorized as positive motivators in keeping rural teachers in their teaching profession, the difficulty of being viewed as an outsider, low salaries and benefits, poor rural student performance, insufficient mentoring, and lack of access to university resources are classified as negative effects on retention (Goodpaster et al., 2012). However, it is noteworthy to highlight that teacher retention is higher when teachers feel part of the community and have a strong sense of connectedness to their community (McClure & Reeves, 2004).

An avenue to attract and keep high-quality teachers in rural areas is by fostering “grow-your-own” (GYO) programs that target teachers who are socially connected to and aspire to stay in their rural communities (Barton, 2012). The GYO programs usually recruit teachers from hard-to-staff fields such as mathematics, science, special education, and foreign language, or they are targeted at supporting parents, community members, and paraprofessionals in low-income communities to attend college and become highly qualified teachers (Dadisman et al., 2010). Embracing programs that focus on recruiting individuals from the rural communities into teaching is fruitful for attracting and retaining teachers (White & Reid, 2008) because such teachers are homegrown (e.g., from the rural communities) and already have relationships within the community. Homegrown teachers see themselves as individuals who are committed to teaching in a

rural community and are aware of the important role of the school within the community (Arnold et al., 2005). In fact, community knowledge and relationships might assist novice teachers to overcome some of the unique challenges that rural teachers experience (Darling-Hammond, 2005).

Interpersonal relationships and community connectedness are important factors in the retention of effective leadership (Burton & Johnson, 2010). However, what is not known is whether these factors may improve rural teacher leadership. Teachers living in proximity to the schools where they teach are more likely to see their students outside of the school (Hardré & Reeve, 2003), which consequently allows them to build close interpersonal relationships and social connectedness in rural communities (Goodpaster et al., 2012). These connections and interactions may further promote their leadership opportunities (e.g., collaboration).

Teacher Leadership

Teachers' knowledge of their students within the classroom and beyond is an important factor in becoming effective educators (Gay, 2002). Becoming a more effective teacher is a step towards leadership (Yow & Lotter, 2016). Teacher leadership is widening one's influence within the school which starts within the classroom and extends beyond it (Criswell et al., 2018) while influencing others (Katzenmeyer & Moller, 2001). Having an impact beyond the classroom is one of the most distinctive qualities of teacher leaders (Criswell et al., 2018). For the current study, we operationalize teacher leadership as collaborating with others and taking actions to improve educational practice through this collaboration. For example, teacher leadership has several potential positive impacts, including increased positive feelings, professional growth, and enhanced relationships

with peers and administration. (Wenner & Campbell, 2017). Thus, it is important to examine factors enhancing teachers' leadership skills which have the potential to improve school effectiveness and student learning.

Teacher leader identity development is a process of participating in new instructional and leadership experiences, collaborating (Hunzicker, 2017), sharing pedagogical ideas, and interacting socially and intellectually with peers (Hanuscin et al., 2014). Reflecting on these experiences and receiving feedback from others helps increase teachers' self-confidence and self-perception, in turn, changing their identity (e.g., Criswell et al. 2018). Furthermore, teacher leaders engage in multiple roles, including collaboration and mentoring (Ackerman & Mackenzie, 2006). Specifically, rural teacher leadership roles include collaborating with others, providing opportunities for students, and building strong relationships with students and with the community (Lotter et al., 2020). Indeed, when teachers collaborate and share their knowledge, their leadership abilities would grow (Gronn, 2000). Additionally, rural schools can have unique resources including social capital (Byun et al., 2012), greater parent involvement (Provasnik et al., 2007), collective responsibility (Nagle et al., 2006), and a family-like atmosphere (Malloy & Allen, 2007). These distinctive resources may influence the effectiveness of rural teachers and consequently promote them to become teacher leaders.

Research Questions and Hypotheses

The current study examines how teachers' physical proximity and social connectedness to their communities promote their teacher leadership abilities in terms of teacher collaboration and leadership action (e.g., taking leadership initiatives expanding beyond the classroom). To gain an understanding of teachers' proximity to their

communities, we examine the influence of teachers' present and past home locations on their instruction and connection to their students and community. Further, we explore teachers' leadership skills from the perspectives of teachers and their students. The current study aims to add value to the current literature by understanding the role of teachers' physical and social connections to their communities in developing their teacher leadership abilities.

Based on the literature demonstrated above, we have several research questions: How do teachers' physical proximity and social connectedness to the rural community in which they teach relate to their ability to display teacher leadership abilities? Additionally, following the review of literature, and based on the social capital theory (Coleman, 1988) and the CoPTL (Campbell et al., 2019), we hypothesize that homegrown teachers would have stronger teacher leadership abilities. We expected outsiders, teachers who moved to the rural communities from other areas, and the teachers who are disconnected from their rural communities, to be less likely to display teacher leadership abilities.

Methods

Participants

Teachers

Initially, we recruited 20 teachers into a five-year professional development program within one state in the rural Southeastern United States. Participants were required to submit a cover letter, principal reference, transcript, licensure test report, and to participate in an interview. Participants needed to be teaching in a high-needs rural district, and they had to have 5 or more years of teaching experience. In the second year

of the program, one male teacher left the program to become an administrator, leaving us with 19 teachers in our study. All teachers had at least a master's degree and had an average of 16.89 years of teaching experience at the time of their applications. Nine teachers were mathematics (6 middle and three high schools) and ten were science (four middle and six high schools) teachers. There were two male, 17 female, 11 Caucasian, and eight African American teachers. All schools were designated as Title I schools and had an average of 80% of students on free and reduced lunch. At the time of their application, eleven teachers' schools were classified as Rural Fringe, six as Rural Distant, one as Rural Remote, and one as Town Remote (National Center for Education Statistics, 2006). We included the town remote school as this school had similar demographics to our other schools (small, far from an urban area, high poverty) and was thought of as a rural school by those in attendance.

Students

Student participants included 6900 students (3419 were in mathematics and 3318 were in science) in our participating teachers' rural middle (49.9%) and high (49.3%) school mathematics (50.8 %) or science (49.2%) classrooms. There were 51.9% female students, 31% White, 42.1% African American, 5.9% Hispanic, and 19.3% of Other races with an average age of 15.09 years.

Program Description

In the first year of the program, teachers took online graduate courses (content, literacy, rural issues, and place-based education focus). During each academic year, teachers continued to utilize their teacher leadership abilities while receiving constant support from the project staff. Each summer, teachers participated in a two-week

Instructional Leadership Academy (ILA), an intensive workshop that focused on increasing teachers' content, pedagogical knowledge, and teacher leadership abilities and improving teachers' inquiry teaching practices and mentorship to preservice teachers. These ILAs were held in the rural communities of our participants to emphasize and utilize the resources within the communities. During the ILAs, teachers took different community field trips (e.g., nuclear power plant, local commercial farm) and employed mathematics and science lessons related to each trip. Teachers also planned community STEAM nights in their schools, invited parents and the community, and included workforce connections with the community. In the last summer of the program, teachers co-led a three-day conference and presented instructional strategies that they learned throughout the program. Teachers also presented their work at state and national conferences. Additionally, teachers had ongoing support from the program faculty and staff who served as resources for them as they expanded their leadership abilities. All of these components of the program encouraged teachers to network, enhanced content knowledge, promoted leadership, and facilitated professional growth (Lotter et al., 2020).

Procedures

Student participants completed paper surveys (over the 5 years, through the duration of the professional development) following a pre-established protocol that included project staff reading each question aloud to students. IRB approval allowed passive parent consent. There were two forms of the survey (one for mathematics classrooms and one for science classrooms). The surveys were each assigned a unique identification number and the raw data were entered into an online survey platform. All

teachers were individually interviewed in Spring 2016 and 2017. In the summer of 2019, teachers completed a similar survey as their students using an online platform.

Measures

Teacher Interviews

The interviews were conducted in 2016 and again in 2017 using two different semi-structured interview protocols. The main focus of the 2016 interview was teacher leadership (e.g., What is teacher leadership, what does being a teacher leader in a rural district look like?). The interview also included questions about teachers' beliefs about teaching mathematics or science in a rural area (e.g., What challenges or struggles have you faced in teaching mathematics/science in your rural school?, How has your view of rural math/science education changed from when you first entered the program?). The focus of the 2017 interviews was on teachers' current and past home location impact on their instruction and connection to their students and the community (e.g., How has your time in the community limited or enhanced your specific teaching of math or science?, Describe a situation where living or not living in the community influenced your teaching with students in a positive/negative way. How often do you go to places or events in the community such as going to the grocery store or a religious event?).

Teacher survey

In the summer of 2019, teachers were given a similar *Teacher leadership* (Triska, 2007) survey as their students (see below) with items modified to measure their perception of teacher leadership. The survey included 15 items (e.g., Talk with other teachers about teaching). Items were rated on a 4-point Likert scale ranging from 1 (*never*) to 4 (*frequently*). The survey was administered using an online platform. The

teacher survey was used to triangulate teacher interview and student survey findings to add validity evidence to student survey results. Due to the small teacher sample size and power issues, teacher surveys were only analyzed descriptively.

Student survey

A *Teacher leadership* (Triska, 2007) inventory was used to measure students' perceptions of their teachers' leadership skills. Examining teacher leadership abilities in classrooms are essential (Cheng, 1994), therefore, we assessed students' perceptions of their teachers' leadership practices at the classroom level, within teachers classroom practices. The measure originally consisted of 13 items on a 5-point scale ranging from 1(*never*) to 5 (*all of the time*). An explanatory factor analysis was computed using robust maximum likelihood estimates and Geomin rotation. The results revealed a two-factor solution: *teacher collaboration* (e.g., Help another teacher; $\alpha = .856$, 6 items) and *leadership action* (e.g., Take an action whose goal is increasing the success of all students at this school.; $\alpha = .867$, 6 items). One item was excluded for failing to adequately load on a factor (i.e., Try a teaching strategy/approach that she/he had never tried before).

Data Analysis

Data analysis was conducted in multiple steps. First interviews were transcribed and coded using a constant comparative method with the organizational aid of NVivo 12 software (Bogdan & Biklen, 2007). Each member of the research team coded the interview data independently. The researchers utilized NVivo coding to identify bigger concepts such as the significance of connections or the value of rural resources as viewed

by outsiders, as well as Concept coding to identify larger ideas such as the importance of relationships or the value of rural resources as seen by outsiders (Saldaña, 2016).

After coding the data individually, the researchers met and came to a consensus on four teacher location groups (defined below in the results). The researchers then reanalyzed the interviews based on teacher group findings. The researchers met again to discuss any uncertainties and discrepancies, then came to a final consensus on all codes and themes. For the student survey data, two one-way ANOVAs were used to examine differences in teacher homegroups for teacher leadership in terms of students' perceptions of teacher collaboration and leadership action. Next pairwise comparison was used to compare the teacher location groups by teacher leadership skills.

The student data were also triangulated with the teacher survey to (1) determine if emerging themes were accurate, and (2) to examine whether students' perceptions of their teachers' teacher leadership abilities align to their own perceptions of teacher leadership practices. Consistency across our multiple data sources (teacher and student surveys, teacher surveys and interviews) provides validity evidence to support our findings (Carspecken & Carspecken, 1996).

Results

Identification of Teacher Groups

The results from the interviews revealed four groups: *homegrown* ($N = 3$), *transplant* ($N = 4$), *less socially connected commuters* ($N = 5$, LSCC) and *more socially connected commuters* ($N = 7$, MSCC). Homegrown teachers (HTs) live in the community and teach at the school they attended. They have strong historical knowledge of their community and have met or taught the parents of many of their students. Transplant

teachers (TTs) live in the rural community where they teach, but they are not from the community. They had been teaching at their current school, on average, for at least 6 years. Some moved because their spouse grew up in the community, others moved because it was similar to where they grew up, and some intentionally moved to a rural area. TTs have some historical knowledge of the communities, which they have gained either through local family knowledge or through being community members. Unlike HTs and TTs, MSCC teachers (MSCCTs) were not easily characterized by where they lived or grew up. MSCCs commuted an average of 20 miles and were intentionally and socially connected to the school community. For example, the MSCCTs spoke of spending more time interacting with the community through community events and visiting restaurants and stores within the community. LSCC teachers (LSCCTs) also were not easily characterized by where they lived or grew up. LSCCTs lived in a different community and commuted, on average 31 miles, to their schools. LSCCTs spoke of deliberately being socially disconnected from their rural school community (not shopping or eating in the rural area) to maintain a line between their professional and personal lives.

Student Surveys- Teacher leadership by teacher groups

First, the basic descriptive statistics were calculated based on teacher groups for the two dependent variables: teacher collaboration and leadership action. Then, one-way ANOVAs were used for the two dependent variables. Table 2.1 provides means and standard deviations for the dependent variables categorized by the four teacher groups: homegrown, transplant, MSCC, and LSCC.

Two ANOVAs were conducted, one for each dependent variable. In each analysis, the independent variable was the teacher group. There was an overall effect for teacher collaboration between the teacher groups ($F(3, 6842) = 51.347, p < .001, \eta_p^2 = .007$) and leadership action ($F(3, 6842) = 18.823, p < .001, \eta_p^2 = .003$). In each ANOVA, we used partial eta squared (η_p^2) to calculate the effect size. $\eta_p^2 \geq .01$ represents a small effect, $\eta_p^2 \geq .06$ a medium effect, and $\eta_p^2 \geq .14$ as a large effect (Cohen, 1988).

We then used Bonferroni follow-up tests to examine the differences between the four teacher groups. For each comparison, we calculated Cohen's d statistic as an index of effect size by dividing the difference in means by the standard deviation observed in the homegrown teacher group for the dependent variable of interest. $d \geq \pm 0.20$ is a small effect, $d \geq \pm 0.50$ is a medium effect, and $d \geq \pm 0.80$ is a large effect (Cohen, 1988).

Table 2.3 summarizes these results.

Results on teacher collaboration as identified in the student survey showed that the mean for TTs was significantly lower than the other three groups. In fact, the largest effects were found between TTs and MSCCs ($d = 0.24$) and LSCCs ($d = 0.18$); however, these are still small effects based on Cohen's (1988) criteria. Regarding leadership action, the mean for TTs was significantly lower than the HTs ($d=0.12$) and MSCCs ($d = 0.14$). These student findings were in line with the 2019 teacher survey, in which transplants reported lower teacher collaboration and leadership action than the other three groups (Table 2.2).

Homegrown Teachers

The interview data revealed the strengths of HTs. These teachers emphasized the importance of taking on different roles as teacher leaders, especially in rural schools. For example, Michael explained:

I think one of the great things about working in a rural place is, as a teacher, you actually have more power. And the reason why is you have to wear a lot of hats. I mean you think I'm a teacher in a classroom, but I direct a grant. I mean I don't think if you were a teacher in [a larger school district] that would happen (2016 interview).

Further, HTs stated living and being socially connected to the community yield them power and respect. In this example, teachers operationalize power as social capital suggesting that they are the ones who are listened to for decision making and having influence in the community. In general, these teachers taught their students' family members, thus, the respect and expectations were built before the students enter their classrooms (2017 interview).

HTs emphasized the importance of collaboration to improve their teacher leadership abilities and their instruction. Although some HTs felt isolated within their departments, because they were the only ones teaching mathematics or science, this isolation did not prevent them from collaborating with others. In particular, Richard illustrated:

On that aspect [department level] it does feel very isolated sometimes. But as far as school, just school stuff in general, I don't feel isolated because I don't have

any problem if I get something in my head I either go to talk to another colleague about it or go to my administrators (2016 interview).

Moreover, HTs spoke of the benefits of living in the community. Being in and from the community enables HTs to see every aspect of the community, meet with parents, and understand their students' stories, consequently, this connection prepares them well for working with their students and alters their instruction based on the students' needs.

More Socially Connected Commuter Teachers

Similarly, interview data showed the strengths of MSCCTs. Unlike HTs, MSCCTs consider themselves outsiders because they are not from the community, thus, they seek every opportunity to involve themselves in community events and activities as community involvement builds relationships. Specifically, Sharon stated:

I think that it helps because the community where I teach is a small community and they are tight-knit, and they are wary of outsiders. It takes time and commitment from people outside of school. The community responds to community events and investment. That has helped more than what I do in the classroom if that makes sense (2017 interview).

MSCCTs also stressed that regardless of feeling like outsiders, being in the community establishes rapport with community members, parents, and students which later pays off in the classroom. Tiffany demonstrated that in the following statement:

It has enhanced it because small communities are reluctant to trust outsiders. I have taught whole families of students and extended relatives. Once they trust you and feel you are going to do right by them then they accept you as a member of

the community and once you get accepted as a member of the community the people are less likely to give you a hard time than they are going to go help you (2017 interview).

MSCCTs added that being an outsider to the community allows them to see the rural community resources that others might overlook. For example, Jenny stated:

Being an outsider, I can see the positives that they may take for granted. We've talked about the things that you can do with rural, what they have to offer. Then you can let the kids know. The stores they have. We've got two bowling alleys. You've got the movies to do. Just the positive things of the town and letting them know that they have some great people here. (2016 interview).

Although initially, MSCCTs felt like outsiders, they indicated that they did not feel isolated in their schools. Even if they are the only teachers teaching mathematics or science in their schools, they still collaborate with other teachers within their schools or other mathematics or science teachers within the same district. Additionally, MSCCTs emphasized the benefits of social connections in teachers' leadership roles because they believe that the time they spent in the community helped them understand their students (2016 interview). To illustrate this, Jenny described:

It has made me aware of what the students deal with. I can be more helpful to them and more supportive of their situations and then connecting with their parents to see what kind of help you can give them... it's helping me connect. Like me being part of the community. You know, I didn't grow up here (2016 interview).

Transplant Teachers

TTs were selective in their collaborations, choosing to collaborate with only close colleagues (2016 interview). For example, Harriett described

It's harder for me to just, like I would ask my English teacher who is my partner on my hall, and I would ask my best friend who's my math cohort. But would I just go to another math teacher or another teacher and ask for advice, probably not (2016 interview).

Further, TTs acknowledged the importance of collaboration to become better teacher leaders, but they also emphasized that they were often isolated in their small schools, sometimes being the only science or mathematics teacher. This isolation was often a factor preventing them from sharing their new learnings with other professionals (2017 interview). Specifically, Julia described: "district-wide [isolation], it really keeps me from doing that because I only see the other teachers periodically during the year" (2017 interview).

Moreover, TTs described that when they first moved into the community, they were not accepted into the community and people perceived them as outsiders. Indeed, TTs were often not even asked to participate in teacher leadership activities even when they had a lot to offer. In particular, Julia explained:

Between the historic people who have been here forever and those of us from the outside who have different experiences, there are several key people in the district who have come from the outside who have a ton to offer. Then there is that mix of those who are already there who have been here since the stone age (2016 interview).

Thus, Julia felt that she had professional knowledge to share with others, but that the district did not value her outside experiences and therefore limited her ability to collaborate and share her knowledge with other teachers. However, once TTs become more familiar with the rural communities (living there for about 4 to 5 years), they are perceived to be members of the community, not outsiders. Julia illustrated it as: “you can speak same language that they speak, and you understand the culture” (2017 interview). Further, once accepted in the community, TTs spoke of benefits of living in the community. For example, Harriett indicated that her teacher leadership abilities were improved because she belonged to the rural community (2017 interview).

Less Socially Connected Commuter Teachers

The student data revealed that LSCCTs outperformed TTs in teacher collaboration and was further validated with the interview data. Specifically, LSCCTs indicated that being an outsider enables them to see what the community has to offer, and, as teacher leaders, it encourages them to take the initiative and involve students in different activities (2017 interview). For example, Danielle stated:

It encourages me to do more. A lot of the teachers are from the area, so they went to school and came back. Sometimes they see what's in the community. Even though they know there's more outside, a lot of them kind of get stuck in the community and don't really go outside to get more professional opportunities to bring back to the school. (2017 interview).

Similar to other teacher groups, LSCCTs, as well, emphasized the importance of collaboration to display their teacher leadership abilities. One LSCCTs stated that she collaborates with teachers within her schools, but she does not often have opportunities to

collaborate with other teachers within the same district (2017 interview). Moreover, LSCCTs acknowledged the benefits of living in the community or the benefits of their involvement in community activities. They pointed out that while being away from the community hinders them to understand students and what students are going through, participating in community events allows LSCCTs to understand their students better, build stronger relationships, and consequently positively impact the classroom (2017 interview).

Discussion

Overall, our study revealed four teacher groups: homegrown, transplant, MSCC, and LSCC teachers. Our results supported our first hypothesis. Specifically, as we expected, HTs display higher teacher leadership abilities compared to other groups. These findings are in line with the social capital theory (Coleman, 1988) and the CoPTL (Campbell et al., 2019) suggesting that enhanced social capital promotes positive behavior: positively relates to teachers' leadership roles and perspectives. Additionally, our second hypothesis was partially supported. In particular, outsiders (TTs), who moved to the rural communities, are perceived by their students to have lower teacher leadership abilities and the teachers themselves describe how they interact less because they didn't feel that they belong in the community. Our results reveal that, based on the students reports, TTs were less likely to display teacher leadership abilities compared to other teacher groups, this pattern is as well descriptively evident in teacher surveys (comparing student and teacher surveys in Tables 2.1 and 2.2). However, although MSCCTs consider themselves outsiders, they still displayed higher teacher leadership abilities. Contrary to our expectations, commuters who are disconnected from the communities (LSCCTs) as

perceived by their students still displayed leadership abilities. Suggesting that while teachers' social connectedness to their rural schools may promote teacher leadership in rural science and mathematics classrooms, teachers who are intentionally disconnected socially from the rural community (LSCCTs) can also become teacher leaders through their ability to bring in external resources and share these.

Our findings are in line with previous studies which reported that while HTs had all the influence in the community (e.g., social capital, due to their relations with the community), TTs feel like outsiders and only felt autonomy in their classrooms (Huysman, 2008). This was also evident in the interviews, for example, TTs spoke of not being open to collaborating with others whom they are not familiar with. Additionally, findings from the interviews suggest that teacher isolation is an influence hindering the impact of transplant teachers' leadership skills within their schools and communities. Thus, it could be that TTs do not have the opportunities to reflect and receive feedback from others, which in turn, lowers their confidence to enact their teacher leadership skills. It could also be that since transplants are labeled as outsiders they are not given teacher leadership roles, or when they take teacher leadership roles, the school community does not recognize their abilities. This relates to CoPTL as the framework emphasizes the importance of recognition of practices to teacher leader identity. That is, TTs perceived themselves as having no impact or voice in the community, allowing themselves to feel powerless. Our findings on TT suggest that future studies should examine these power dynamics of outsider teachers in rural areas and how these dynamics impact teacher collaboration and leadership opportunities.

Corbett (2010) argues the importance for teachers to become familiar with where they are teaching (e.g., understanding the culture, and people). This knowledge will not only allow teachers to understand the rural place but also allow them to build relationships with people in that rural community. Our results complement Corbett's (2010) argument and show that teachers who are intentionally disconnected socially from the rural community (LSCCTs) can also become teacher leaders. Because LSCCTs spend less time in their communities, they can see the strengths and the weaknesses of rural communities. For example, they recognize the value of local resources (community centers and individuals) that might have been overlooked by HTs, but they also know that in rural classrooms students may have limited activities. Consequently, LSCCTs feel the responsibility for bringing local resources into their classrooms (e.g., inviting local experts) or engaging students in local field trips. This suggests that although LSCCTs intentionally disconnected themselves from the rural communities, they prioritize community connections to enhance their students' learning, thus, they are involved in leadership actions. Further, research suggests that there may be a power dynamic between homegrown and outsiders (TTs) moving into the rural community (Huysman, 2008). Since LSCCTs are commuters, they may be free from this power struggle, and consequently, able to collaborate with others more easily. Our study revealed similar findings and offers new evidence that commuters may not be as affected by this localized power dynamic. Future studies should examine whether this finding is evident among other LSCCTs teachers in other rural areas.

Together, based on teachers' and their students' perspectives, our results demonstrated that teachers are involved in different teacher leadership activities both in

terms of collaboration and leadership action. For example, all teacher groups exhibited an understanding of their students and their rural communities. Knowing students beyond the classroom is essential to becoming effective teacher leaders (Criswell et al., 2018; Gay, 2002). Further, prior studies suggest that when teachers collaborate and share their knowledge, their teacher leadership abilities would be improved (Gronn, 2000). This is also evident in our study, specifically, our results show that teachers who have deeper connections and understanding of the rural communities are more likely to participate in different leadership activities (e.g., collaborating, and sharing pedagogical ideas) while understanding the importance of rural places.

Overall, the current study has both theoretical and practical implications specifically for rural educators who want to better support teacher collaboration within rural communities Administrations need to recognize the values of being from a rural community for teaching. But also, they need to understand the unique resources “outsiders” can provide in the classroom. Concurrently, educators need to encourage teachers to develop and extend relationships with peers and community members. Such connections support teacher leadership identity development. That is, as teachers connect with a local community and its members, not only do their feelings of isolation decrease, but they also build their confidence to become leaders, thus improving teacher satisfaction and retention.

Previous studies highlighted using GYO programs to attract and keep high-quality, socially connected teachers in rural areas (Barton, 2012; Monk, 2007). In general, GYO programs target homegrown teachers. While our study displays the strength of homegrown teachers in being leaders in their classrooms, our results also

emphasize that teachers who are not from the community and intentionally disconnected from the rural communities may also display high teacher leadership abilities. In fact, they may be better able to recognize the unique resources that rural areas possess. Consequently, these programs should recognize the strengths of LSCCTs and encourage attracting teachers from a variety of living proximities. Overall, these programs should focus on preparing teachers to foster a sense of rurality with conscientiousness and attention to the concept of place (Starrett et al., 2021).

Our results should be considered despite some limitations. First of all, teachers' leadership abilities were measured by their students' perspectives. Although this makes our study unique, some students may not be able to recognize teacher leadership abilities. Second, part of the data was self-reported, thus, future studies should consider collecting data from multiple informants (e.g., administrators, colleagues). Lastly, our sample included students and teachers from Title 1 schools in the southeastern United States where only one school was town-remote and one was rural-remote, thus, our results may not be generalizable to all rural teachers. Future studies, therefore, should examine teacher leadership in other rural settings across the United States. Despite these limitations, our study presents an important step in understanding how rural teachers' proximity and their social connectedness to their communities relate to their teacher leadership abilities.

Acknowledgment

This material is based upon work supported by the National Science Foundation, United States under Grant No. 1439842. Any opinions, findings, and conclusions, or

recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

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Table 2.1: Descriptive statistics by teacher locale from the student surveys

Variables	Homegrown <i>N = 1104</i>		Transplant <i>N = 2935</i>		LSCC <i>N = 1511</i>		MSCC <i>N = 1350</i>	
	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Teacher collaboration	2.84	1.03	2.68	1.02	2.86	.98	2.93	1.00
Leadership action	3.12	1.04	3.00	1.02	3.07	1.06	3.15	1.03

Table 2.2: Descriptive statistics for teacher locale based on the 2019 teacher survey

Variables	Homegrown		Transplant		LSCC		MSCC	
	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Teacher collaboration	3.61	0.54	3.44	0.25	3.60	0.19	3.83	0.11
Leadership action	3.83	0.17	3.56	0.42	3.63	0.14	3.83	0.15

Table 2.3: Pairwise comparison of the variables

Variables							
Teacher collaboration	Compared groups	Mean Difference	SE	95% Confidence Interval		p	d
				LL	UL		
	MH- MT	0.15	0.04	0.05	0.25	0.001	0.14
	MH-LSCC	-0.03	0.04	-0.12	0.06	0.817	-0.02
	MH-MSCC	-0.09	0.04	-0.19	0.00	0.080	-0.08
	MT-MH	-0.15	0.04	-0.25	-0.047	0.001	-0.14
	MT-LSCC	-0.18	0.03	-0.27	-0.09	0.000	-0.17
	MT-MSCC	-0.24	0.04	-0.34	-0.15	0.000	-0.23
	LSCC-MH	0.03	0.04	-0.06	0.12	0.817	0.03
	LSCC-MT	0.18	0.03	0.10	0.26	0.000	0.18
	LSCC-MSCC	-0.06	0.03	-0.14	0.01	0.209	-0.06
	MSCC-MH	0.09	0.04	-0.01	0.19	0.080	0.09
	MSCC-MT	0.24	0.04	0.15	0.33	0.000	0.24
	MSCC-LSCC	0.06	0.03	-0.02	0.14	0.209	0.06
Leadership action							
	MH-MT	0.12	0.04	0.01	0.23	0.02	0.12
	MH-LSCC	0.05	0.04	-0.04	0.15	0.50	0.05
	MH-MSCC	-0.02	0.04	-0.13	0.08	0.93	-0.02
	MT-MH	-0.12	0.04	-0.23	-0.01	0.02	-0.12
	MT-LSCC	-0.07	0.03	-0.15	0.02	0.19	-0.07
	MT-MSCC	-0.14	0.04	-0.24	-0.05	0.00	-0.14
	LSCC-MH	-0.05	0.04	-0.15	0.04	0.50	-0.05
	LSCC-MT	0.07	0.03	-0.02	0.15	0.19	0.06
	LSCC-MSCC	-0.08	0.03	-0.16	0.01	0.08	-0.07
	MSCC-MH	0.02	0.04	-0.08	0.13	0.93	0.00
	MSCC-MT	0.14	0.04	0.05	0.24	0.00	0.14
	MSCC-LSCC	0.08	0.03	-0.01	0.16	0.08	0.08

CHAPTER 3: STUDY 2

**EXAMINING THE RELATIONSHIP OF TEACHER AND PEER BELONGING
TO RURAL ATTACHMENT AND COMMUNITY ASPIRATIONS AMONG
DIVERSE RURAL YOUTH**

Abstract

This study examines how race/ethnicity moderates the relationship of teacher and peer belonging in mathematics and science classrooms with rural attachment and aspirations (i.e., community and proximity aspirations) among rural secondary students. Data were collected from a larger rural teacher leadership study and include 6,616 rural student participants were surveyed from 2015 to 2019. Our findings reveal that peer and teacher belonging is related to adolescents' rural attachment and both community and proximity aspirations differently across race/ethnicity. Also, while rural youth of color compared to White students tend to have lower levels of rural attachment and aspirations, results illustrate that Black students have higher rural community aspirations. The discussion includes additional findings, implications, limitations, and directions for future research.

Keywords

Rural identity, community aspirations, teacher belonging, peer classroom support

Irdam, G., Starrett, A., Irvin, M. J., Yow, J., & Lotter, C. submitted to Journal of Community Psychology

Introduction

Understanding youths' rural attachment and aspirations is of growing importance due to continued outmigration from rural communities (e.g., Petrin et al., 2014).

Outmigration jeopardizes community growth and sustainability because youth who leave rural areas (i.e., high achievers) tend to be more highly educated and skilled (Cushing, 1999; Mills & Hazarika, 2001), whereas youth who remain in their rural communities (i.e., stayers) are more likely to be less educated, have fewer skills, and tend to grow into adults with lower incomes and fewer skills (Brown & Schafft, 2011; Cushing, 1999). However, some high-achieving rural students (i.e., ambitious stayers) are among those with the most attachment to their rural community and greatest desire to support and stay in or return to it (Assouline et al., 2020; Petrin et al., 2014).

Nonetheless, such rural youth may be deterred from staying in or returning to their rural community because of poor economic and job prospects (Petrin et al., 2014). Outmigration raises more concerns because rural communities may lack qualified youth to fill local employment and workforce needs as they become available. For example, recent increases in manufacturing, distribution, and technological facilities in some rural areas are creating strong demand for Science, Technology, Engineering, and Mathematics (STEM) jobs (Campos Research Strategy, 2014; Lund et al., 2019). This demand could possibly offset outmigration, but such positions often end up being filled by individuals from outside the community. Thus, examining factors on how to curb outmigration warrants new investigation.

Overall, after rural youth complete their secondary and/or postsecondary education, the hope for rural sustainability is for them to remain in or return to their rural

communities and to use their education to revitalize their communities. We argue that this hope may be fostered by rural youths' peer and teacher classroom belonging, especially as rural youth often benefit from unique forms of social capital (e.g., social support, Byun et al., 2012) and close-knit relationships among peers and teachers (e.g., Authors et al., 2016; Authors et al., 2021; Hardré et al., 2008). In fact, rural attachment and strong community ties have been cited as factors influencing rural youths' migration decisions (Wolfe et al., 2019). Therefore, these resources may foster youths' rural attachment and aspirations, and consequently affect rural youths' future rural residential choices.

Rural Attachment and Aspirations

Rural attachment develops when individuals feel they belong to their rural community and people within their community (Flora & Flora, 2004; Howley, 2006; Jorgensen & Stedman, 2001; Kyle et al., 2003; Williams & Patterson, 1999). Specifically, strong attachment to community relates to increased rural residential aspirations among adolescents (Petrin et al., 2014; McLaughlin et al., 2014), and often the brightest rural youth have the most rural attachment (Wang et al., 2020; Petrin et al., 2014). This suggests that rural attachment and aspirations may be central for retaining rural youth in their rural communities.

Rural aspirations are youths' future desire to remain in or return to their rural communities (Howley et al., 1996; Howley, 2006; Petrin et al., 2014). Moreover, community-level factors are related to rural aspirations. In particular, the experience of growing up in a rural community can be characterized by connectedness and close-knit personal relationships, as well as the significance of self-sufficiency and rural identity that is rooted in locality and connection to community (Burnell, 2003; Sherman & Sage,

2011). Further, rural students can have stronger connections to their communities compared to their urban peers (Petrin et al., 2011b) because they often have close-knit relationships with the tight and socially interconnected community among family, schools, and religious institutions (Crockett et al., 2000). Similarly, in rural communities, strong student-teacher relationships are more unique and influential in students' learning where teachers foster their students' internal motivation that supports youths' persistence in school (Authors et al., 2016; Hardré & Reeve, 2003).

In our study, we operationalize rural aspirations as a desire for features of a rural community, including *community aspirations*: youths' desire to be a part of and support their community and *proximity aspirations*: youths' desire to live close to friends and family. While fostering rural attachment and aspirations may be related to youths' likelihood of choosing their rural community as their future residence, historically rural research has focused on residential aspirations that specifically assess aspiring to live in a rural or nonrural community. Regardless, results from a study conducted in rural Oregon and Maine with a sample of predominantly White students revealed that youth who feel attached to their rural communities and have community and proximity aspirations are more likely to choose their rural communities as their future residence (Bernsen et al., 2022). Moreover, an earlier study within rural Appalachia reveals that rural youths' proximity aspirations are related to their life satisfaction (Wilson & Peterson, 1988). Put differently, youth aspiring to live close to family and friends underscore the importance of close community ties as an essential source of their well-being.

While we know about the relationship between proximity aspirations and life satisfaction, our knowledge is limited about the predictors of rural attachment and

aspirations. That is, one problem is that existing studies have not focused on the relationship of peer and teacher classroom belonging to youths' rural attachment and aspirations, particularly among a diverse rural sample (i.e., African American, Hispanic, Native American, Pacific Islander, and Asian). This neglect is important because approximately 28% of rural students in the United States are racial/ethnic minorities (Kebede et al., 2021). Furthermore, between 2000 to 2010 racial-ethnic minorities accounted for 83% of the population gain in rural America (Johnson, 2012). As racial/ethnic diversity in rural areas is increasing, new research is needed to understand minority rural students school experiences, such as teacher and peer belonging, that may underlie their desire to remain in and support their rural community. Moreover, prior studies on rural attachment and aspirations have not focused on a large sample of rural youth from the southeastern US. Given that rural schools in the southeastern US are some of the most racially/ethnically diverse (Showalter et al., 2019), this gap is significant. Therefore, research needs to account for ethnic/racial diversity, as findings and implications may differ for students from different racial and ethnic backgrounds in various settings.

Consequently, the purpose of our study is to examine how rural youths' classroom belonging to their peers and teachers relate to their rural attachment, community, and proximity aspirations, and whether these relationships are moderated by race/ethnicity. By understanding factors related to rural attachment and aspirations, schools and communities may be able to better curb outmigration. Specifically, peer and teacher belonging may interact differently with races/ethnicities to nurture rural attachment and aspirations. Additionally, our study examines rural attachment and aspirations of rural

youth in the southeastern US. Our sample includes rural Title 1 schools with a large percentage of minority students (68%), thus making the rural context in our study unique.

Conceptual Framework

Our study is guided by belongingness motivation theory (Baumeister & Leary, 1995) which indicates that the need to belong is fundamental and motivates individuals to maintain strong and enduring relationships with others and the sources that meet this need (Baumeister & Leary, 1995; Deci & Ryan, 2000). Every youth has a fundamental need to belong, and schools are one of the essential environments that can meet this need (e.g., Baumeister & Leary, 1995). Indeed, when youth have a strong sense of belonging, they have deeper connections with people and places (Allen, 2020). Developmentally, a strong sense of belonging is vital for youth as it influences their social identity, and interpersonal relationships, ultimately, positively influencing transitions into adulthood (Allen, 2020; O'Connor, 2010). Thus, we surmise that key people in the rural community, which includes peers and teachers, are well positioned to meet rural adolescents' need for belonging which in turn should increase the desire to remain close to the community and sources meeting that need.

In our study, we measured rural youths' peer and teacher classroom belonging based on Goodenow's (1993) definition of a sense of belonging, which is the degree that students feel accepted, included, respected, and valued by their peers and teachers in classrooms. In particular, rural youth rated how they are included in classroom activities and respected by teachers. Additionally, they rated how their peers value their opinions and acknowledge that they can succeed in a classroom task. These items are in line with the belongingness motivation theory (Baumeister & Leary, 1995), as they measure how

youth perceive acceptance, rejection, and inclusion in their classrooms by their peers or teachers.

In general, belonging is critical for all students' well-being, academic achievement, and performance (Allen et al., 2021). Nonetheless, Leary and colleagues (2006) developed a scale (i.e., the need to belong scale, NTBS) to measure individual differences in the strength of the need to belong. Rather than focusing on the satisfaction of the belonging needs, NTBS focused on the strength or intensity of an individual's need to be accepted or rejected by others (Leary et al., 2006), suggesting heterogeneity in the need to belong across individuals. That is, individuals' need for social connections differs based on individual factors. For example, individuals with a strong need to belong seek others' acceptance to feel more secure (Lavigne et al., 2011). For ethnically/racially minoritized students, prior studies show that the need to belong is especially powerful for students of various ethnicities/races' overall well-being (e.g., Branscombe et al., 1999). Indeed, a sense of belonging is also significant academically, in particular when minority youths' need for belonging is not met, their academic performance is more likely to drop (Walton & Cohen, 2009). Additionally, the importance of sense of belonging expands to other domains beyond academics (e.g., Allen et al., 2022), consequently, fostering youths' needs for belonging could yield broader benefits. Accordingly, we argue that it is important to consider how belonging may influence rural attachment and aspirations and how this relationship is moderated by race/ethnicity. This direction may be critical to curb outmigration and help distressed rural economies by fostering a local workforce.

The Current Study

While the association between academic outcomes and the need to belong has previously been studied, the association between peer and teacher classroom belonging and rural attachment and aspirations has not been thoroughly tested, and it is unknown whether this relationship is moderated by race/ethnicity (i.e., Black, White, Hispanic, Asian, Native American, more than one race). Additionally, the role of peer and teacher classroom belonging has yet to be addressed in relation to rural aspirations in terms of community and proximity aspirations. That is, if perceived peer and teacher classrooms belonging foster rural youths' attachment and aspirations, it may have important implications for curbing outmigration and revitalizing rural communities. Accordingly, this study aims to bridge these gaps in the literature by addressing the following research questions: (1) Do race/ethnicity and peer and teacher classroom belonging predict rural attachment and aspirations?, (2) Does race/ethnicity moderate the role of peer and teacher classroom belonging on rural attachment and aspirations?, and (3) Are any significant relationships between independent variables (race/ethnicity, peer and teacher belonging) and rural attachment and aspirations explained by socioeconomic status (SES) and gender?

Methods

Participants

Participants ($N = 6616$) were in middle ($N = 3446$) or high ($N = 3403$) school and enrolled in a mathematics or science course taught by one of the 20 teachers participating in a five-year rural teacher leadership professional development program (see Program Description for details). Participants were approximately evenly divided by gender (51.9% female) and represented a diverse racial/ethnic sample. Participants were

primarily African American (43%), with 31.6% White, 6.2% Hispanic, 0.6% Asian, 0.4% American Indian, 0.2% Pacific Islander, and 17.9% more than one race. For the current analyses, we combined Asian, Native American, Pacific Islander, and more than one race/ethnicity into *other race/ethnicity*.

Program Description

This study was part of a five-year rural teacher leadership development program within one state in the rural Southeastern US. Twenty teachers participated in the program. The application processes included submitting a cover letter, principal reference, transcript, licensure test report, and participating in an interview. At the time of their applications, all teachers (3 males and 17 females; 12 White and 8 African American) had at least a master's degree and had an average of 16.89 years of teaching experience. Ten were mathematics and ten were science teachers. All schools were designated as Title I, eleven teachers' schools were classified as Rural Fringe, seven as Rural Distant, one as Rural Remote, and one as Town Remote, at the time of their application (National Center for Education Statistics, 2006). We included the town remote school as this school had similar demographics to our other schools (small, far from an urban area, high poverty) and was thought of as a rural school by those in attendance.

In the first year of the program, teachers took online graduate courses (about their content, project-based learning, and place-based education). Each summer, teachers participated in a two-week Instructional Leadership Academy (ILA), an intensive workshop- physically situated in one of the rural communities of the participating teachers- that focused on increasing teachers' content and pedagogical knowledge.

During the ILAs, teachers took different community field trips (e.g., nuclear power plant, local commercial farm) and utilized their learning from each trip in their mathematics and science classrooms. Each year, teachers organized community STEM nights in their schools and involved workforce connections with the local community.

Procedures

All participants completed the self-reported paper-based survey in their school, administered by trained research assistants. Participants were reminded that there were no right or wrong answers and that they could stop the survey at any point. They were also reminded that their responses were confidential. Each survey was assigned a unique identification number and the data were entered into an online survey platform. The measures in the current study were collected as part of a larger study on rural teacher leadership and the participants were surveyed from 2015 to 2019. This research was approved by the university's Institutional Review Board.

Measures

Rural Attachment. The rural attachment was measured by Phinney's (1992) Multigroup Ethnic Identity Measure (MEIM). The scale includes 5 items (Likert-type: 1= Not like me at all to 6 = A lot like me, e.g., I have a clear sense of my rural background and what it means for me; $\alpha = .88$). Composite scores were calculated by averaging the scores.

Community and Proximity Aspirations. This construct measured the degree of importance of 20 future life desires that were either more modern/urban or rural in nature by asking "In thinking about your future, how important is each of the following to you?". Responses were on a six-point Likert scale from *not at all important* to *very important* (all points labeled). Some items were from the Education Longitudinal Study

of 2002 Base Year Student Survey (e.g., “Getting a good education” and “having a good job”). Others were from Howley et al. (1996) which assessed the degree to which rural students aspired for modern or urban amenities (e.g., “having lots of money” and “getting away from this area”) versus rustic or rural amenities (e.g., “living close to parents or relatives,” “being able to earn a living from the land”). An explanatory factor analysis was computed using robust maximum likelihood estimates and Geomin rotation. The results revealed a five-factor solution: *community aspirations* (e.g., To help make my community a better place; $\alpha = .841$, 3 items) *proximity aspirations* (e.g., Living in or close to my community where I grew up.; $\alpha = .635$, 2 items), *land aspirations* (e.g., Living near open land and natural landscapes/views.; $\alpha = .605$, 2 items), *material aspirations* (e.g., Having lots of money; $\alpha = .639$, 4 items), and *occupational success aspirations* (e.g., Being successful in my line of work; $\alpha = .785$, 5 items). For the current study land, material, and occupational success aspirations were not included in the analyses. Composite scores were calculated by averaging the scores.

Peer and Teacher Classroom Belonging. Psychological Sense of School Membership-Brief (Hagborg, 1998) scale was adapted and used to measure participants' perceived teacher and peer belonging in their mathematics and science classrooms. The original wording that referred to “teachers” and “school” was altered to “teacher” and “classroom”. The measure includes 11 items (Likert-type: 1 = Completely False to 6 = Completely True). An explanatory factor analysis was computed using robust maximum likelihood estimates and Geomin rotation. The results revealed a two-factor solution: *teacher classroom belonging* (e.g., I am treated with as much respect as other students; α

= .823, 6 items) *peer classroom belonging* (e.g., People in my class notice when I'm good at something.; $\alpha = .796$, 5 items),

Student Characteristics. We used students' self-reported gender and race/ethnicity as student characteristics. Throughout the analyses, "other race/ethnicity" refers to multiracial, American Indian, Asian, and Pacific Islander students.

Parent Education. We used parental education as a proxy for socioeconomic status (SES). Parental education was reported based on the students' responses to the highest level of both of their parents' education.

Analytical Strategies

Data analysis was conducted in multiple steps. Before the main hypotheses were tested, preliminary analyses were conducted. Mplus version 8.4 was used for all analyses. First, descriptive statistics were computed. Next, we investigated the relationships of contextual and individual factors to participants' rural attachment, community, and proximity aspirations. We used a robust maximum likelihood estimator and accounted for students nested in teachers which adjusted the standard errors for nesting and non-normality. We estimated three models with students nested in teachers on the three outcome variables (rural attachment, community, and proximity aspirations).

Specifically, for Model 1, we entered student characteristics (e.g., race/ethnicity) and belonging variable (peer and teacher classroom belonging). Next, in Model 2, we included a series of interaction terms between students' race/ethnicity with peer and teacher classroom belonging to examine whether the associations were moderated by race/ethnicity. Lastly, for Model 3, we added parent education and gender as a control variable to determine whether the prior relationships, if any, held after controlling for

SES. The missing data was below 2.5% and was handled by Full Information Maximum Likelihood (FIML) estimation.

Results

Table 3.1 includes descriptive analyses by race/ethnicity. Overall, compared to African American, Hispanic, and students of other ethnicities, White youth have significantly higher rural attachment. In terms of community aspirations, African American rural youth have significantly higher community aspirations compared to White, Hispanic, and students of other ethnicities. Additionally, White and Hispanic youth have significantly higher proximity aspirations compared to African American youth. While African American youth higher rates of peer belonging compared to White and students of other ethnicities, African American youth also have higher teacher belonging compared to White, Hispanic, and students of other ethnicities. Further, Hispanic students' parental education was significantly lower than White, African American, and students of other ethnicities. In addition, Tables 3.2, 3.3, and 3.4 provide the estimated coefficients for the three models predicting students' rural attachment, community, and proximity aspiration. In the next section, we provided detailed results for each dependent variable.

Rural Attachment

As indicated above, in Model 1, we included student characteristics (race and gender) and belonging variables for predicting rural attachment. Results suggested that compared to females, males ($B = .210, \beta = -.032, p < .001$) and students with higher peer ($B = .237, \beta = .021, p < .001$), and teacher ($B = .192, \beta = .014, p < .001$) classroom belonging were associated with higher rural attachment. On the contrary, African American ($B = -.355, \beta = .067, p < .001$), Hispanic ($B = -0.463, \beta = .082, p < .001$), and

students with other races/ethnicities ($B = -.290, \beta = .050, p < .001$) had lower rural attachment compared to White students.

Next, we included a set of interaction terms (Model 2) to examine if the relationship between peer and teacher classroom belonging and rural attachment was moderated by race/ethnicity. However, no interaction terms were significant.

In Model 3, we added parental education and gender as control variables for SES to examine whether the relationship between student characteristics and rural attachments of students held after controlling for SES. The results revealed that males and higher levels of classroom belonging to peers and teachers were still associated with higher rural attachment; however, race/ethnicity was no longer significant. In addition, after controlling for parental education, results revealed that being of Hispanic origin amplified the association between teacher classroom belonging and rural attachment ($B = .168, \beta = .081, p = .039$), this moderation effect is also apparent in Figure 3.1. On the contrary, as illustrated in Figure 3.2, being of Hispanic origin dampened the association between peer classroom belonging and rural attachment ($B = -.162, \beta = .065, p = .013$).

Community Aspiration

Results for community aspiration indicated that African American students ($B = .158, \beta = .041, p < .001$) displayed higher community aspirations compared to White students, whereas Hispanic students had lower community aspirations ($B = -.193, \beta = .093, p = .038$) compared to White students. In addition, students with higher peer ($B = .176, \beta = .020, p < .001$), and teacher ($B = .148, \beta = .018, p < .001$) classroom belonging had higher community aspirations. Gender and other race/ethnicity were not significantly related to students' community aspirations. When we included the interaction terms to

examine how the relationship between peer, teacher classroom belonging, and community aspirations varied by the students' ethnicity, we did not find any statistically significant results. After accounting for parent education and gender, all prior significant relationships remained except being of Hispanic origin was no longer associated with lower community aspirations.

Proximity Aspiration

With regards to proximity aspirations, findings revealed that males ($B = .161, \beta = -.047, p < .001$) and students with higher peer classroom belonging ($B = .101, \beta = .022, p < .001$) had higher proximity aspirations. On the contrary, African Americans ($B = -.387, \beta = .057, p < .001$) and students of other races/ethnicities ($B = -.308, \beta = .068, p < .001$) were less likely to display proximity aspirations compared to White students. Hispanic ethnicity and teacher classroom belonging were not significantly related to students' proximity aspirations. Next, we included the interaction terms to examine how the relationship between peer and teacher classroom belonging and proximity aspirations varied by students' race/ethnicity. There were no longer any statistically significant results based on race/ethnicity. Lastly, we added parental education and gender as control variables. The prior associations with males and peer classroom belonging remained. Additionally, after controlling for SES, higher perceived teacher classroom belonging ($B = .109, \beta = .047, p < .001$) was associated with higher levels of proximity aspirations. However, for African American rural youth, perceived teacher classroom belonging ($B = -.114, \beta = .043, p < .001$) was related to lower levels of proximity aspiration, this moderation effect is also evident in Figure 3.3.

Discussion

The primary focus of this study was to examine how race moderated the relationship of sense of belonging in the classroom (with peers and teachers) to students' rural attachment and aspirations. Our findings have several important contributions to rural education research. Limited research has considered factors influencing rural youths' rural attachment, community, and proximity aspirations, especially among diverse rural youth from White, African American, Hispanic, and other racial/ethnic backgrounds. Furthermore, while most studies combine students of color into a single minority group, little work has separately examined youth from various racial/ethnic groups in rural settings (e.g., Authors et al., 2016). Importantly, our results extend the literature by revealing that the peer and teacher classroom belonging manifests itself differently for rural youth and may lead to different effects for youth from White, African American, Hispanic, and Native American backgrounds. For example, being of Hispanic origin amplifies the positive relationship between teacher classroom belonging and rural attachment. This suggests that fostering teacher classroom belonging among Hispanic youth in rural communities may be an effective approach to promoting their sense of rural attachment. Additionally, rural educators appear to have a powerful role in cultivating rural attachment and community aspirations among all rural youth regardless of race/ethnicity. That is, in our study, greater teacher classroom belonging predicted higher rural attachment and community aspirations across all youth.

Our findings extend prior research by demonstrating the powerful role of peers and teachers in rural classrooms. Overall, in our study, increases in peer and teacher classroom belonging had a significant positive influence on rural attachment and rural community aspirations. The role of teachers in rural youth is well documented in the

literature (e.g., Authors et al., 2016; Authors et al., 2021; Hardré et al., 2008). Our results extend prior research by showing that peers are likewise influential in fostering rural youths' community aspirations. This is important because it suggests that when rural youth feel more attached to their peers and teachers in their classrooms, they are more likely to aspire to support their communities and be a part of their communities, which in turn, may influence youths' decision to choose their home communities as their future residences.

Findings from our study also revealed the moderating role of race/ethnicity on the relationship between belonging and rural attachment and aspirations. Initially, race did not moderate the relationship between peer and teacher classroom belonging and rural attachment until gender and parental education (i.e., SES) was added to the model. When gender and parental education was added to the model, racial/ethnic minority students no longer had significant lower rural attachment compared to White students. Additionally, adding parental education to the model revealed that being of Hispanic origin amplifies the relationship between teacher classroom belonging and rural attachment, but it dampens the relationship between peer classroom belonging and rural attachment. Importance of positive teacher support for youth's self-perception and academic performance especially for Hispanic students is well documented (e.g., Gillock & Reyes, 1996). Results from our study adds on to the current literature by demonstrating the role of teachers on Hispanic youths' rural attachment. Additionally, Faircloth and Hamm (2005) revealed peer involvement helps create belonging for Hispanic youth; however, perceived discriminations hurts it. Perhaps rural schools have relatively fewer Hispanic students (for example in our sample across 14 rural schools only 6% of the students were

Hispanic), consequently, it could be that Hispanic youth feel discriminated and isolated in their classrooms. For instance, we know from a recent work that adolescents develop a sense of belonging by connecting and interacting with others with who they share similar social identities (e.g., one's same racial group, Hirsch & Clark, 2019). Therefore, it could be that these Hispanic students may feel excluded in their schools. Perhaps, it could also be that since there are not many students similar to them, Hispanic rural youth may feel that they do not belong to their peer groups. Consequently, new research is needed to understand the lived experiences of Hispanic youth in rural communities where they represent a small minority.

The moderation effect of race/ethnicity was also evident in proximity aspirations. In particular, being of African American origin, dampened the relationship between teacher classroom belonging and proximity aspirations. One possible reason for this finding could be explained by the demographics of participant teachers in our study. Specifically, although the majority of our student sample was African American youth (43%), only 8 of the 20 teachers were African American. In a similar vein, we know that when African American youth expose to same-race teachers they have improved academic outcomes (e.g., Gershenson et al., 2018). Thus, a similar interplay of exposure to same-race teachers could be evident in our study. Specifically, it could be that because the majority of the participant teachers were White, African American youth did not feel included by or able to build strong connections with their teachers. Thus, more research is needed to understand how teacher race may be influencing the relationships between teacher belonging and proximity aspirations for African American rural youth.

Furthermore, in a study by Farmer and colleagues (2006) community members indicated a lack of financial resources to prepare youth for the employment opportunities that are in close proximity to the community was one of the barriers to successful outcomes for African American rural youth. Therefore, it could be that many rural youth are not aware of the employment opportunities in their communities, thus, their proximity aspirations are hindered, and they are searching for other ways to “give back” to their communities. This finding suggests that community members and educators should be informed about the employment opportunities in their communities so that they can influence their students. Rural high schools should consider establishing career programs where youth can explore local careers through internships or work-based learning.

Lastly, we found that as parental education increased, youths’ rural attachment increased as well. This may suggest that parents with higher education may be more knowledgeable about their rural communities and the available employment opportunities within the communities. Thus, parents may expose their kids to these opportunities which facilitate fostering rural attachment. It is important to note that not every student has parents with postsecondary attainment and beyond. Therefore, as our study shows the influence of peers and teachers, teachers are in a unique role to expose their students to the strengths and unique resources of the rural community.

Prior studies examined rural youths’ residential aspirations; our findings are novel as they uniquely examined aspirations for features of the rural community. Findings from our study revealed that compared to White rural students, while all racial/ethnic minority youth showed lower rural attachment, African American rural youth had significantly higher community aspirations compared to White rural youth. Prior studies documented

that African American youth place a high value on education because they see education as a tool for improved social and economic mobility (e.g., Anderson, 1988). Thus, it could be that African American youth place the same value on their rural community because they feel responsible for cultivating their rural communities, in turn developing higher rural attachments. Consequently, future studies should explore why African American rural youth have higher community aspirations.

Developmentally, it is important to foster youths' rural attachment. This is because, another study using the same data as our study revealed that about one-third of rural youth are indecisive about their rural residential aspirations (Authors et al., under review). Adolescence is still a transition and exploratory phase, suggesting that if educators can foster youths' rural attachment, rural youth may be more likely to return to their rural communities. That is, the role of rural attachment may be one important factor when youth are considering their future residence.

Overall, our study has both theoretical and practical implications for rural schools, teachers, school counselors, and policymakers. First, teacher classroom belonging can also be nurtured through school policies and practices (Juvonen, 2007). For example, engaging in research-informed discussions with teachers about their powerful role in fostering belonging among minority youth can encourage teachers to more closely support their students, and develop and strengthen their relationships with their students in their classrooms. Second, schools should utilize well validated interventions that increase peer and teacher classroom belonging especially for minority youth. This approach could also examine and demonstrate how specific strategies are linked to

improving youths' belonging to their peers and teachers, thereby, fostering these youth rural attachment and aspirations.

In general, prior research mostly focused on high achieving students, their educational and occupational aspirations, and intentions to leave their rural communities (Carr & Kefalas 2009). However, our findings are promising in suggesting new directions to curb outmigration that are beginning to emerge in the literature. Specifically, Bernsen et al.'s (2022) recent research showed that rural youth who feel attached to their rural communities and have community and proximity aspirations are more likely to choose their rural communities as their future residence.

Limitations and Future Research

Although the current study provides several important insights on youth's rural attachment and aspirations, there are limitations that should be acknowledged. First, the nature of self-report assessment is one of the limitations as students' self-report may be biased. Second, our study was cross-sectional which provided important information in exploring predictors among the variables. However, cross-sectional studies do not provide evidence of causality. Consequently, future studies should examine the longitudinal relationships between peer and teacher classroom belonging with rural attachment and aspirations to identify possible causal factors. Specifically, future studies should examine if greater teacher and peer belonging over several school years leads to higher rural attachment and aspirations. Lastly, our participants were in Title I rural schools in one Southeastern state in the US with about 68% minority students. Although this could be treated as a strength (because limited research examined rural minority students' rural attachment and aspirations in the Southeast), other rural communities may

be more or less diverse. Thus, our findings may not generalize to all rural students. Nonetheless, our study clearly highlights the importance of and need for considering diversity among rural youth in future research.

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Table 3.1: *Descriptive statistics*

	White		African American		Hispanic		Other		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD
Dependent variables										
Rural Attachment	3.84	1.38	3.58	1.30	3.38	1.24	3.54	1.41	3.64	1.35
Community Aspiration	4.36	1.29	4.59	1.29	4.20	1.33	4.43	1.32	4.46	1.30
Proximity Aspiration	4.02	1.29	3.65	1.37	4.01	1.24	3.69	1.4	3.80	13.36
Independent variables										
Peer Belonging	4.01	1.14	4.24	1.10	4.10	1.09	3.97	1.17	4.11	1.36
Teacher Belonging	4.49	1.16	4.72	1.09	4.49	1.07	4.54	1.17	4.58	1.13
Parent Education	3.61	1.68	3.60	1.67	2.36	1.62	3.61	1.72	3.53	1.70
Gender	1.49	0.50	1.45	0.49	1.41	0.49	1.48	0.50	1.47	0.50
<i>N</i>	2057		2799		403		1246		6505	

Note. Range for dependent and independent variables was 1-6, except for parent education which was 1-7.

Table 3.2: *Estimated coefficients for rural attachment*

Variables	Model 1	Model 2	Model 3
	β (SE)	β (SE)	β (SE)
African American (AA)	-0.357 (0.063) ***	-0.230 (0.210)	-0.392 (0.266)
Hispanic	-0.482 (0.080) ***	-0.771 (0.238) ***	-0.505 (0.316)
Other	-0.285 (0.051) ***	0.243 (0.317)	0.380 (0.404)
Peer Belonging	0.239 (0.019) ***	0.292 (0.032) ***	0.295 (0.038) ***
Teacher Belonging	0.185 (0.013) ***	0.169 (0.030) ***	0.153 (0.040) ***
AA * Teacher Belonging		0.033 (0.031)	0.038 (0.047)
AA * Peer Belonging		-0.069 (0.049)	-0.043 (0.066)
Hispanic * Teacher Belonging		0.115 (0.077)	0.168 (0.081) *
Hispanic * Peer Belonging		-0.056 (0.049)	-0.162 (0.065) **
Other * Teacher Belonging		-0.028 (0.051)	-0.099 (0.066)
Other * Peer Belonging		-0.100 (0.057)	-0.057 (0.074)
Male			0.230 (0.038) ***
Parent Education			0.026 (0.010) **
R^2	0.155 (0.012) ***	0.115 (0.009) ***	0.115 (0.009) ***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

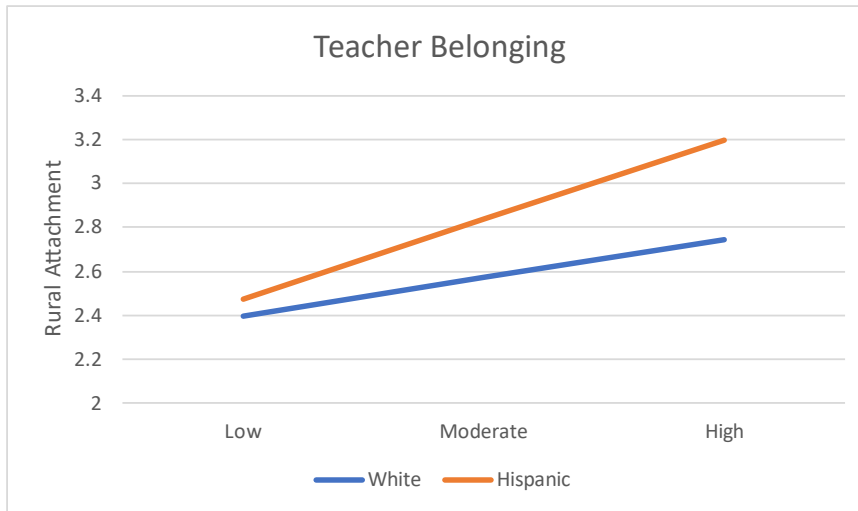


Figure 3.1: *The moderation effect of race/ethnicity between teacher belonging and rural attachment*

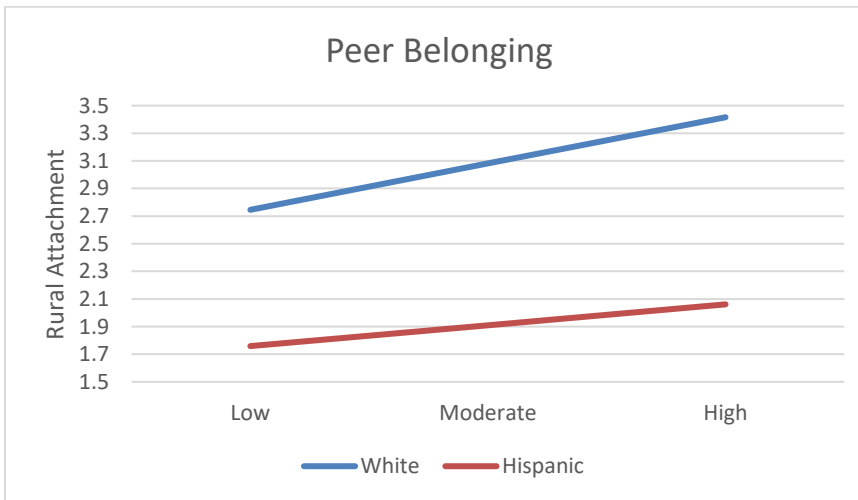


Figure 3.2: *The moderation effect of race/ethnicity between peer belonging and rural attachment*

Table 3.3: *Estimated coefficients for community aspirations*

Variables	Model 1	Model 2	Model 3
	β (SE)	β (SE)	β (SE)
African American (AA)	0.155 (0.041) ***	0.456 (0.140) **	0.378 (0.168) *
Hispanic	-0.186 (0.094) *	-0.399 (0.361)	-0.306 (0.499)
Other	0.066 (0.051)	0.245 (0.192)	0.189 (0.261)
Peer Belonging	0.176 (0.020) ***	0.188 (0.036) ***	0.197 (0.044) ***
Teacher Belonging	0.149 (0.018) ***	0.169 (0.036) ***	0.142 (0.043) ***
AA * Teacher Belonging		-0.026 (0.042)	-0.023 (0.048)
AA * Peer Belonging		-0.044 (0.047)	-0.023 (0.050)
Hispanic * Teacher Belonging		-0.015 (0.082)	0.008 (0.110)
Hispanic * Peer Belonging		0.068 (0.070)	0.033 (0.104)
Other * Teacher Belonging		-0.047 (0.059)	-0.041 (0.064)
Other * Peer Belonging		0.008 (0.066)	0.008 (0.088)
Male			0.008 (0.036)
Parent Education			0.004 (0.010)
R^2	0.073 (0.006) ***	0.075 (0.007) ***	0.069 (0.008) ***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3.4: *Estimated coefficients for proximity aspirations*

Variables	Model 1	Model 2	Model 3
	β (SE)	β (SE)	β (SE)
African American (AA)	-0.387 (0.057) ***	-0.053 (0.152)	0.047 (0.127)
Hispanic	0.003 (0.094)	-0.169 (0.326)	0.059 (0.430)
Other	-0.296 (0.065) ***	0.107 (0.307)	0.446 (0.407)
Peer Belonging	0.106 (0.023) ***	0.124 (0.041) *	0.109 (0.047) **
Teacher Belonging	0.041 (0.031)	0.070 (0.047)	0.103 (0.052) *
AA * Teacher Belonging		-0.042 (0.040)	-0.114 (0.043) **
AA * Peer Belonging		-0.034 (0.044)	-0.019 (0.046)
Hispanic * Teacher Belonging		-0.003 (0.088)	-0.028 (0.093)
Hispanic * Peer Belonging		0.045 (0.076)	0.001 (0.086)
Other * Teacher Belonging		-0.062 (0.063)	-0.106 (0.068)
Other * Peer Belonging		-0.031 (0.056)	-0.67 (0.089)
Male			0.143 (0.046) **
Parent Education			-0.003 (0.015)
R^2	0.027 (0.004) ***	0.029 (0.004) ***	0.033 (0.005) ***

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

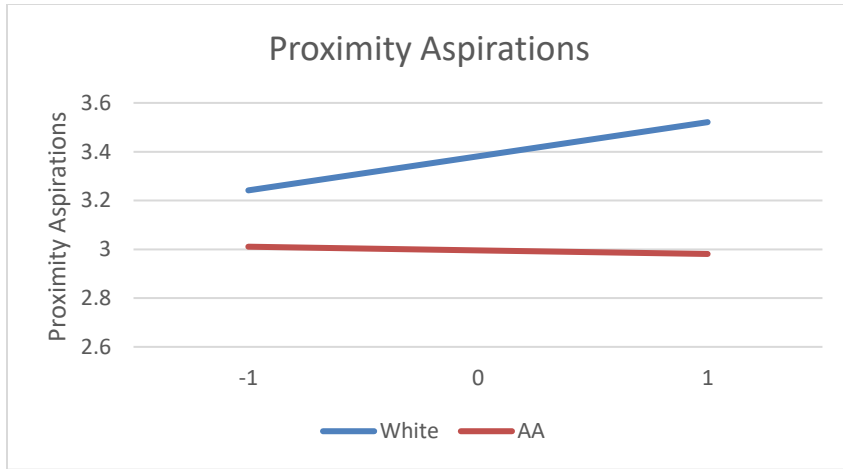


Figure 3.3: *The moderation effect of race/ethnicity between teacher belonging and proximity aspirations*

CHAPTER 4: STUDY 3

**EDUCATIONAL EXPECTATIONS AND RESIDENTIAL ASPIRATIONS OF
DIVERSE RURAL YOUTH: A SELF DETERMINATION THEORY
PERSPECTIVE**

Abstract

Purpose: Although prior studies showed the positive association between rural youths' school experiences and educational outcomes, our knowledge is limited about how components of self-determination theory relate to rural youths' educational expectations and rural residential aspirations. Therefore, the purpose of the current study is to examine the relation of peer and teacher classroom belonging, and ability beliefs to rural youths' educational expectations and rural residential aspirations and investigate whether these associations are moderated by race/ethnicity.

Research Methods/Approach: Using multinomial logistic regression, this study examines whether the associations between ability beliefs, peer and teacher classroom belonging to youths' educational expectations, and rural residential aspirations were moderated by race/ethnicity (i.e., Black, White, Hispanic, and other race/ethnicity) by means of a multigroup analysis. Participants were 6611 middle and high school students from various racial/ethnic backgrounds in mathematics and science classrooms.

Findings: Findings indicated that higher ability beliefs were related to expectations of completing more education for all students. Additionally, when White students and

students of other races/ethnicity experienced more classroom support from their peers, they expected to obtain more education. Black youth who had higher teacher classroom belonging were more likely to have rural residential aspirations compared to nonrural residential aspirations, while Black, White, and students of other races/ethnicity were more likely to have undecided rural residential aspirations.

Implications: Results from the current study have both theoretical and practical implications for rural parents, teachers, school counselors, and policymakers.

Additionally, implications for supporting rural youth in their transitions to adulthood are provided.

Keywords: *motivation, postsecondary education, rural aspirations, rural education, peer and teacher belonging*

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Introduction

Educational expectations are educational degree youth expect to obtain (e.g., obtaining a bachelor's or a master's degree, Reynolds & Pemberton, 2001). Rural residential aspirations, on the other hand, are youths' desire to remain in or return to their rural communities (Howley et al., 1996; Petrin et al., 2014). Understanding rural youth's educational expectations and rural residential aspirations are vital because rural communities are battling youth outmigration (Carr & Kefalas, 2009). Historically, research characterizes leavers as high achievers who tend to leave their rural community for more educational and occupational opportunity whereas stayers are often less educated and gain employment in low-level jobs (Mills & Hazarika, 2001). However, more recent research shows there are high achievers who want to return to their rural communities (i.e., ambitious stayers), but may be affected by poor economic perceptions (Petrin et al., 2014). Further, a recent study shows that high achieving rural middle-school students in the Midwestern United States (U.S.) are often the most attached to their communities and have a strong desire to return to their communities (Assouline et al., 2020). Moreover, another study of rural youth in Pennsylvania reveals that 51% of 7th and 11th graders wanted to stay in their home rural community, 27% were “ambitious stayers” and 24% were students with lower education and occupational aspirations who also wanted to stay in their home rural communities (i.e., “typical stayers”, Wang et al., 2020).

As rural communities and youth across the U.S. are diverse (Irvin et al., 2016), understanding factors that promote educational expectations and rural residential aspirations among rural youth living in other regions of the U.S. and from various

racial/ethnic backgrounds is warranted. This is because such work may provide new insights specific to particular rural contexts and situations that may guide youth in attaining postsecondary degrees and returning to their rural community, thereby helping curb outmigration and promoting economic development.

However, to our knowledge, prior studies have not focused on the educational expectations of rural youth or examined rural youth's likelihood of remaining in or returning to their rural communities through their ability beliefs in mathematics and science classrooms or sense of peer and teacher classroom belonging (i.e., classroom support from their peers or teachers), particularly with a diverse rural sample (i.e., African American, Hispanic, Native American, Pacific Islander, and Asian). This neglect is important because approximately 28% of rural students in the United States are racial/ethnic minorities (Kebede et al., 2021), and educational attainment varies by race/ethnicity. Specifically, although minority rural youths' educational attainment is increasing, compared to White rural youth, minority youth are less than half as likely to have a college degree (USDA, 2017). Therefore, our study examines educational expectations and rural residential aspirations of rural youth in the southeastern U.S.. The rural context in our region is also unique from other studies because our sample includes rural Title 1 schools with a large percentage of minority students (68%). Moreover, the rural Southeastern U.S. is changing as there is substantial growth in STEM fields and job opportunities such as advanced manufacturing, and information technology (Campos Research Strategy, 2014; Lund et al., 2019). Research has established the relationship between rural youth's schooling experiences and their educational outcomes (Irvin et al., 2011). Specifically, positive feelings about school climate foster rural youths' educational

aspirations (i.e., the amount of education ideally desired) (Bernsen et al. 2022). We also know that community social resources in rural areas are related to a significant increase in the likelihood of rural youth's degree expectation (Byun et al., 2012; Kim & Schinder, 2005). Additionally, prior work emphasizes the powerful influence of teachers on rural students' lives and the value of strong student-teacher relationships in rural communities (Starrett et al., 2021). Similarly, teachers may be more important than peers in rural classrooms in enhancing students' motivation (e.g., Hardré et al., 2009). However, we do not know if these positive relationships are evident in youth's educational expectations (i.e., the amount of education actually expected to achieve) and rural residential aspirations.

Nevertheless, a more important problem is that prior studies have not yet examined whether motivational frameworks (i.e., aspects of self-determination theory) relate to rural youth's educational expectations and rural residential aspirations with a diverse sample. The overarching goal for rural community sustainability is that rural students pursue a postsecondary education in some capacity and then return to their rural communities to use their education to revitalize, support, and rebuild their community. Given the unique forms of social capital in rural communities (e.g., close community-school relationships, Byun et al., 2012), this hope may be fostered by rural youths' feelings of peer and teacher classroom belonging, it could be that when rural youth feel more attached to their peers and teachers, they might be more likely to aspire to remain in or return to their rural communities. Consequently, rather than seeking opportunities elsewhere, they would contribute to the development of their rural communities.

Accordingly, the purpose of our study is to examine the relation of peer and teacher classroom belonging, and ability beliefs to rural youths' educational expectations and rural residential aspirations and investigate whether these associations are moderated by race/ethnicity. This is important because we can examine the skills and dispositions needed to foster and promote educational expectations and rural residential aspirations across diverse rural adolescents. Specifically, belonging and ability beliefs can interact with race/ethnicity to foster educational expectations and rural residential aspirations.

Theoretical Framework

In framing this study, we draw on self-determination theory (SDT, Ryan & Deci, 2000) which posits that when youth fulfill their needs for competence, relatedness, and autonomy, they are more interested in, excited about and confident in their behaviors, thus, they display enhanced performance, persistence, and creativity (Ryan & Deci, 2000). Our study specifically considers competence, teacher relatedness, and peer relatedness. In the classroom, when teachers support the needs of their students, teachers facilitate their students' academic performance and persistence in school.

Perceived competence, students' belief that they can succeed with the academic task, is related to higher educational outcomes (in our study we operationalized competencies as ability beliefs, Wong et al., 2002). Higher competence in the classroom correlates with higher interest, enjoyment, engagement, and well-being (Ryan & Deci, 2000). The relationship between competence and educational outcomes are consistent across race/ethnicity and socioeconomic status (Gutman & Midgley, 2000; Marchant et al., 2001; Wong et al, 2002). Further, while the relationship between perceived

competence and educational outcomes is well established, we do not know how this relationship may be moderated by race/ethnicity in rural communities.

With regards to relatedness, prior studies highlight the vital role rural teachers and school experiences have on their students (Hardre & Reeve, 2003; Irvin et al., 2016; Starrett et al, 2021). In our study, we operationalize relatedness as students perceived classroom support from their teachers and peers in their mathematics and science classrooms (i.e., peer and teacher classroom belonging). While rural teachers can nurture relationships with their students, they can also enhance learning in the classroom (e.g., Hardre et al., 2008). Furthermore, peers are also influential in rural classrooms in enhancing learning (e.g., Estell et al., 2002; Lin et al., 2016). In general, youth tend to affiliate with peers similar to them (i.e., academically motivated youth tend to form relationships with motivated youth, Hallinan, 1983). For example, a study conducted in rural West Virginia shows the salient relationship between peers' college plans and students' decisions regarding obtaining a bachelor's degree, especially for males (Chenoweth & Galliher, 2004). While relatively little is known about the relationship between peer and teacher classroom belonging and educational expectations among rural youth, the classroom support from peers and teachers may foster skills that allow rural youth to have higher educational expectations. Peer and teacher classroom belonging can, therefore, function as a resource that contributes to the decision to pursue higher degrees. In addition, youths' rural residential aspirations are shaped by multiple factors including the availability of quality and good-paying employment (Howley et al., 1996, Petrin et al., 2014) and strong community connections (e.g., Petrin et al, 2014). Yet, to our knowledge, no research has examined the connections of perceived competence and

relatedness to rural residential aspirations and how these relationships are moderated by race/ethnicity among adolescents in rural communities.

Rural Youths' Educational Expectations

Rural youths' educational expectations are not only shaped by structural elements (e.g., parents, socioeconomic status, family size, and parental expectations of college attendance) of rural communities, but also, by relationship dynamics within them (Adedokun & Balschweid, 2008; Howley, 2006). For example, Howley (2006) suggests rural youths' strong attachments to their communities and individuals within them are associated with lower educational expectations. This is because rural youth aspire to attain low skills and jobs that are available in their rural communities (Elder & Conger 2000; Johnson et al., 2005). Similarly, recent studies in agriculturally-driven communities of Maine and Oregon demonstrate the negative association between educational and rural residential aspirations with a sample of predominantly White middle and high school students (Bernsen et al., 2022a; Bernsen et al., 2022b).

However, unique forms of family and school social capital can shape rural youths' educational expectations (Byun et al., 2012). Rural youth often experience more social support compared to their urban and suburban counterparts (Byun et al., 2012). These benefits allow rural youth to develop a rural identity (Schultz, 2004), have unique lived experiences (Howley & Howley, 2014), and cultivate commitments to rural life and places (Howley, 2006). More importantly, these connections may relate to rural youths' educational expectations and postsecondary decisions (Howley et al., 1996; Howley, 2006; Irvin et al., 2011). Together, these findings suggest that rural youths' sense of

belonging to their peers and teachers could be important predictors of their educational expectations.

Individual Differences

There is limited research on individual differences in rural youths' educational expectations and rural residential aspirations. However, existing studies reveal that female rural youth are more likely than boys to have higher educational aspirations (Bernsen et al., 2022b; Chenoweth & Galliher, 2004; Meece et al., 2013). Further, findings suggest that minority and White students have similar educational aspirations to each other (Irvin et al., 2016). In regard to rural residential aspirations, female rural youth are more likely to aspire to leave their rural communities to use their education and skills (Docquier et al., 2009; Wilborg, 2004). To our knowledge, only one study (with a sample of 50% or more students who self-identified as an ethnic minority) examined rural youths' rural residential aspirations, revealing that minority youth aspire to live in a nonrural area (Petrin et al., 2014). Consequently, examining educational expectations and rural residential aspirations across rural adolescents from different racial/ethnic backgrounds warrants further examination.

Current Study

As SDT suggests, if ability beliefs and perceived peer and teacher classroom belonging shape rural youths' educational expectations and rural residential aspirations, it may have important implications for rural teachers and schools. To our knowledge, prior studies have not investigated how classroom belonging and ability beliefs are related to educational expectations and rural residential aspirations of diverse rural youth.

Consequently, our study addresses this gap in the literature by examining the relationship

between components of self-determination theory to educational expectations and rural residential aspirations of diverse rural youth and by assessing whether these associations may be moderated by race/ethnicity.

Based on our literature review, we developed two research questions: (1) Within SDT, are rural adolescents' peer and teacher classroom belonging and ability beliefs related to their educational expectations and rural residential aspirations? and (2) Does race/ethnicity moderate the associations of students' peer and teacher classroom belonging and ability beliefs to their educational expectations and rural residential aspirations? Additionally, based on our review of literature, we hypothesize the following: (1) students who feel higher peer and teacher classroom belonging, and have higher ability beliefs in their mathematics and science classrooms would have higher educational expectations, (2) we expected to see similar educational expectations among rural youth from different racial/ethnic backgrounds, (3) students who have higher peer and teacher classroom belonging would have higher rural residential aspirations, and (4) we expected minority youth to have nonrural residential aspirations. It was an open question whether ability beliefs in mathematics and science classrooms would influence rural youths' rural residential aspirations.

Methods

Participants

Participants included 6616 students ($M = 14.6$ years, 52% female). 49% were in mathematics and 51% were in science classrooms in one of the 20 teachers participating in a teacher leadership professional development program (see Program Description for details). 52% of the students were in middle school, and 48% were in high school. 53.1%

of the participants were female, and, and 46.9% were male. 43% of the students were African American, 31.6% White, 17.9% of more than one race/ethnicity, 6.2% Hispanic, 0.6% Native American 0.4%, Asian, and 0.2% Pacific Islander. For the current analyses, we combined Asian, Native American, Pacific Islander, and more than one race/ethnicity into *other race/ethnicity*.

Program Description

This study was part of a five-year rural teacher leadership development program within one state in the rural Southeastern U.S. (Lotter et al., 2020). Twenty teachers participated in the program, each submitted a cover letter, principal reference, transcript, licensure test report, and participated in an interview. At the time of their applications, all teachers had at least a master's degree and had an average of 16.9 years of teaching experience. There were three males and 17 females, 12 White teachers, and eight African American teachers. Ten were mathematics and ten were science teachers. All schools were designated as Title I with an average poverty index of 76.3 (as defined by percent of students with Medicaid, TANF, and/or SNAP enrollment) (SC Department of Education, 2021). Eleven teachers' schools were classified as Rural Fringe, seven as Rural Distant, one as Rural Remote, and one as Town Remote, at the time of their application (National Center for Education Statistics, 2006). We included the town remote school as this school had similar demographics to our other schools (small, far from an urban area, high poverty) and was thought of as a rural school by those in attendance.

In the first year of the program, teachers took online graduate courses (content, literacy, rural issues, and place-based education focus). Each summer, teachers participated in a two-week Instructional Leadership Academy (ILA), an intensive

workshop that focused on increasing teachers' content, pedagogical knowledge, and teacher leadership abilities and improving teachers' inquiry teaching practices and mentorship to preservice teachers. During the ILAs, teachers took different community field trips (e.g., nuclear power plant, local commercial farm) and employed mathematics and science lessons related to each trip. Teachers also planned community STEM nights in their schools, invited their parents and local community, and included workforce connections with the local community. Additionally, teachers had ongoing support from program faculty and staff who served as resources for them.

Procedures

Students completed paper surveys following a pre-established protocol that included project staff reading the survey questions to students during the Spring semesters from 2015 to 2019. Institutional Review Board approval allowed passive parent consent, and students were told that they could stop the survey at any time. There were two forms of the survey (one for mathematics and one for science classrooms). Surveys were each assigned a unique identification number and data were entered into an online survey platform.

Measures

Educational expectations. A single item from the High School Longitudinal Study (2009) was used to measure participants' highest level of education they expect to attain (seven categories from less than high school to Ph.D., M.D. or other advanced degree). For the purposes of the current study, we created 4 categories for students' educational expectations: (1) a high school degree or less ($n = 412$, 6%), (2) some college degree (e.g., 2 years or uncompleted degree) ($n = 744$, 12%), (3) a bachelor's degree ($n =$

2224, 35%), and (4) higher than a bachelor's degree (e.g., Master's or Ph.D.) ($n = 2384$, 37%). In our analytic sample, 648 students (10%) answered “don't know” or failed to answer the item and were treated as missing.

Rural residential aspirations. A single item from the Rural High School Aspirations Survey (McLaughlin et al. 2014) was used to measure participants' future desired residence when they are 30 years old. The original item included eight categories: (1) same area/town as you live now, (2) another rural area in my state, (3) city in my state, (4) city in another state, (5) rural area in another state, (6) another country, (7) I have thought about where I want to live when I am 30, but I have not decided., (8) I have not thought about where I want to live when I am 30. For the current study, these responses were collapsed into three categories: (1) rural ($n = 1355$, 20%), (2) nonrural ($n = 3187$, 48%), and (3) undecided ($n = 1941$, 29%). 133 students (2%) failed to answer the item and were treated as missing.

Ability beliefs. Students' capabilities in their mathematics or science classroom were measured by using items adapted from the Education Longitudinal Study of 2002 Base Year Student Survey (Ingels et al., 2014). The original wording referred to “mathematics efficacy” and “English efficacy” and we altered it to “mathematics” and “science”. There were four items on a six-point scale (*strongly disagree* to *strongly agree*): “I am certain that I can understand the most difficult material presented in the textbook used in this class,” “I am certain that I can master the skills being taught in this class”, “I am confident that I can do an excellent job on tests in this class”, and “I am confident that I can do an excellent job on assignments in this class” ($\alpha = .875$). Composite scores were created by averaging the items.

Peer and teacher classroom belonging. Psychological Sense of School Membership-Brief (Hagborg, 1998) scale was adapted and used to measure participants' peer and teacher belonging in the classroom. The original wording referred to “teachers” and “school” and we altered it to “teacher” and “classroom”. The measure includes 11 items (*completely false* to *completely true*) with 6 teacher-related items (e.g., “I feel comfortable going to my math/science teacher if I have a problem”; $\alpha = .82$) and 5 peer-related items (e.g., “People in this class notice when I am good at something”; $\alpha = .80$). Composite scores were calculated by averaging the item-level scores for teacher and peer classroom belonging.

Data Analytic Plan

Data analysis was conducted in multiple steps. First, before the main hypotheses were tested, we conducted preliminary descriptive analyses (Table 4.1). Next, we used multinomial logistic regression to investigate the relationship of students' ability beliefs, teacher belonging, and peer belonging to their educational expectations and rural residential aspirations and whether students' race/ethnicity moderated these associations. Mplus version 8.4 was used for all analyses to account for nesting and reduce the likelihood of type 1 errors. Specifically, we used a robust maximum likelihood estimator and TYPE = Mixture complex which adjusted the standard errors for nesting and non-normality. Since participants were students of the teachers who were part of a teacher leader developmental program, we estimated a regression model with students nested in teachers on the two outcome variables (educational expectations and rural residential aspirations). In this analysis, the criterion variables were *educational expectations* (coded 0 = high school degree or less, 1 = some college degree, 2 = bachelor's degree, and 4 =

more than a bachelor's degree) and *rural residential aspirations* (coded 0 = undecided, 1 = rural, and 2 = nonrural). Additionally, the predictor variables were ability beliefs, peer classroom belonging, and teacher classroom belonging, while controlling for gender and age. Lastly, we tested whether associations were moderated by race/ethnicity (i.e., Black, White, Hispanic, and other race/ethnicity) by means of a multigroup analysis. This was tested by adding the race variable to the model and identifying whether race groups differ significantly. Missing data on independent variables were less than 2.5% and handled by Full Maximum Likelihood (FIML) estimation.

Results

Descriptive Analyses

As apparent in Table 4.1, descriptive analyses indicated that majority of students, on average, expected to obtain more than a high school degree. Descriptively, Hispanic rural youth had slightly lower educational expectations compared to other race/ethnicity groups. Additionally, while White youth has slightly higher to aspire to live in a rural community, African Americans had undecided rural residential aspirations. It is also evident that Black youth have higher ability beliefs, peer and teacher classroom belonging.

Educational Expectations

Table 4.2 presents the results from the multigroup ordinal logistic regression analysis on educational expectations. For Black rural students, results revealed that an increase in ability beliefs was associated with an increase in the odds of expecting to complete more education by 32% (OR = 1.32, 95% CI [1.15, 1.50], $p < .001$).

Additionally, compared to Black females, Black males were associated with a decrease in the odds of expecting to complete more education (OR = .43, 95% CI [.37, .51], $p <$

.001). On the contrary, teacher and peer classroom belonging, and age was not statistically significant for Black rural youth.

Findings were slightly similar for White rural students. Specifically, for each unit increase in ability beliefs, the odds of expecting to complete more education is increased by 38% (OR = 1.38, 95% CI [1.21, 1.56], $p < .001$). Further, an increase in peer classroom belonging was associated with an increase in the odds of expecting to complete more education by 16% (OR = 1.16, 95% CI [1.04, 1.29], $p < .001$). Additionally, compared to White females, White males were associated with a decrease in the odds of expecting to complete more education (OR = .45, 95% CI [.37, .54], $p < .001$). On the contrary, teacher classroom belonging, and age were not statistically significant for White rural youth.

For Hispanic rural youth, an increase in ability beliefs was associated with an increase in the odds of expecting to complete more education by 65% (OR = 1.65, 95% CI [1.22, 2.21], $p < .001$). Additionally, compared to Hispanic females, Hispanic males had lower odds of expecting to complete more education (OR = .46, 95% CI [.32, .67], $p < .001$). Teacher and peer classroom belonging, and age were not significant for Hispanic rural youth.

The results for students from other racial/ethnic backgrounds revealed that an increase in ability beliefs was associated with an increase in the odds of expecting to complete more education by 43% (OR = 1.43, 95% CI [1.23, 1.67], $p < .001$). An increase in peer classroom belonging was associated with an increase in the odds of expecting to complete more education by 30% (OR = 1.30, 95% CI [1.13, 1.50], $p < .001$); however, teachers had a different association for students in this predominantly

multiracial group. Specifically, an increase in teacher belonging was associated with a decrease in the odds of expecting to complete more education (OR = 0.80, 95% CI [.69, .92], $p < .001$). Additionally, compared to other racial/ethnic females, males were associated with a decrease in the odds of expecting to complete more education (OR = .40, 95% CI [.32, .51], $p < .001$). Age was not a predictor of educational expectations for these rural youth.

Rural Residential Aspirations

We next present results from the multigroup multinomial logistic regression analysis of rural residential aspirations, with nonrural residential aspirations as the referent group. As such, two comparisons were made: (1) the likelihood of aspiring to live in a rural community compared to aspiring to live in a nonrural community (Table 4.3), and (2) the likelihood of being undecided about residential aspirations compared to aspiring to live in a nonrural community (Table 4.4).

Results for Black rural students showed that, for every unit increase in teacher belonging, the odds of aspiring to live in a rural community (i.e., rural residential aspirations) increased by 19% (OR = 1.19, 95% CI [1.03, 1.38], $p = .017$) compared to having nonrural aspirations. Additionally, an increase in each year of age was associated with a decrease in the odds of aspiring to live in a rural community (OR = .90, 95% CI [.81, .98], $p = .022$). Further, ability beliefs, peer belonging, and gender were not significantly associated with rural residential aspirations for Black youth. When we compared Black rural adolescents' likelihood of being undecided about residential aspirations compared to aspiring to live in a nonrural community, we only found a difference by gender. Specifically, compared to Black females, Black males were

associated with an increase in the odds of being undecided about aspiring to live in a rural area (OR = 1.49, 95% CI [1.21, 1.82], $p < .001$).

Results for White rural students showed that an increase in age was associated with a decrease in the odds of aspiring to live in a rural community (OR = .93, 95% CI [.88, .97], $p = .003$). Further, for every unit increase in peer belonging, the odds of being undecided about residential aspirations (compared to nonrural aspirations) increased by 21% (OR = 1.21, 95% CI [1.09, 1.35], $p < .001$). Additionally, compared to White females, White males had increased odds of being undecided about residential aspirations (OR = 1.35, 95% CI [1.14, 1.60], $p < .001$). Moreover, the effect of peer belonging on undecided rural residential aspirations was stronger for White youth ($\beta = .19$, $p < .001$) compared to Black youth ($\beta = -.14$, $p < .105$) and youth of other races/ethnicities ($\beta = -.03$, $p = .749$), and the coefficients across groups were significantly different ($\chi^2(1) = 13.29$, $p < .001$; $\chi^2(1) = 8.06$, $p = .004$, respectively).

Results for students of other races/ethnicity revealed that an increase in age was associated with a decrease in the odds of aspiring to live in a rural community (OR = .84, 95% CI [.78, .92], $p < .001$). Additionally, compared to other racial/ethnic females, males were associated with an increase in odds of being undecided about residential aspirations (OR = 1.71, 95% CI [1.38, 2.11], $p < .001$). Lastly, for Hispanic rural youth when we compared their rural residential aspirations, the results did not show any significant differences.

Discussion

Youths' expectations and aspirations are important in guiding their future (Bandura et al. 2001). Findings from this study provide a clearer picture of how rural youth simultaneously hold educational expectations and rural residential aspirations.

Compared to rural youth over a decade ago (e.g., Byun et al., 2012), rural youths' educational aspirations have increased. Specifically, descriptive results from our study showed that 39% of the participants expected to obtain a bachelor's degree, and 23% a master's degree, and 19% a Ph.D. or other advanced degree. Overall, our findings are consistent with national trends in adolescents' educational expectations. Rural youth today are more likely to aspire to complete postsecondary education compared to previous generations (Synder & Dillow 2010). Additionally, while 49% of rural youth aspired to live in a nonrural community, 30% were undecided, and 21% expected to live in a rural area, suggesting that we need to highlight the benefits of rural communities to enhance youths' rural residential aspirations, especially among youth without clear residential aspirations.

The main goal of our study was to examine how race/ethnicity moderated the components of SDT on the educational expectations and rural residential aspirations of rural adolescents. Our results are significant and add to the existing literature because, to our knowledge, they are the first in demonstrating the relation between rural youths' peer and teacher classroom belonging and ability beliefs with their educational expectations and rural residential aspirations, especially among rural youth from White, African American, Hispanic, and Native American backgrounds. Moreover, research that distinguishes youth of several distinct racial/ethnic backgrounds in rural settings has been limited (e.g., Irvin et al., 2016), as most have only involved White or minority students. Importantly, our findings indicate there are several key differences in peer and teacher belonging and ability beliefs of rural students across race/ethnicity. Furthermore, the association between peer and teacher classroom belonging to educational expectations

and rural residential aspirations appears to be complex: while sometimes these associations differ across racial/ethnic backgrounds, sometimes it is quite similar. Thus, our results have important implications for supporting rural youth in their transitions to adulthood. In our discussion, we first consider our results in terms of rural youths' educational expectations. We then discuss the findings on rural residential aspirations.

Educational Aspirations of Rural Youth

According to SDT, youth are more motivated in the classroom when classroom activities are relevant to their lives, affirm their competencies, and when they feel like they are part of the classroom (i.e., belonging to peers and teachers, Ryan & Deci, 2000). That is, relatedness and competence represent youths' motivational resources, which in turn promote youth persisting in school and aspiring to attain higher degrees. Our findings extend these results and support that higher ability beliefs were related to higher expectations of more education for all rural youth regardless of race/ethnicity. Although increases in ability beliefs enhanced all youths' likelihood of expecting to complete more education, while ability beliefs seemed more strongly related for Hispanic rural youth, we did not find significant differences when comparing to other race/ethnicity. This could be related to the relatively small number of Hispanic youth in the large sample, representing a power issue. That is, with every unit of increase in Hispanic rural youth's ability beliefs, the odds of them expecting more education increased by 65%. Overall, our findings on ability beliefs emphasize the importance of exposing rural youth to different opportunities in the classroom so they can acquire the skills needed to nurture their competencies, and consequently, expect to complete higher education degrees. Adolescents' academic competence cultivates their intrinsic motivation, which in turn

promotes students' performance, persistence, and educational expectation level (e.g., Deci & Ryan, 1985).

One important role teachers and peers play in helping students develop these internal motivational resources to attain higher degrees are through supportive, nurturing relationships. We found that when White students and students of other races/ethnicities experienced more classroom support from their peers, they expected to obtain more education. We measured peer classroom belonging based on how students perceive that their peers believe in them, support them, and recognize their ability in completing tasks. Consequently, our results suggest that when White and other race/ethnicity rural youth experience this academic support from their peers, they are more likely to expect to attain postsecondary education. Contrary to prior studies (e.g., Hardré et al., 2009), we did not find that teacher classroom belonging related to the educational expectations of Black, White, and Hispanic rural youth. We also unexpectedly found a negative association among teacher belonging and educational expectation among students of other races/ethnicities. Perhaps, this is because we did not have Hispanic teachers or teachers of other races/ethnicities, therefore, youth of other races/ethnicities may have struggled to relate to their teachers. Future studies should examine the lived experiences of multiracial rural youth in their schools and classrooms, as well as rural youth from racial/ethnic backgrounds that were not included in our study (e.g., Asian, Native American, and Pacific Islander).

Moreover, females in all racial/ethnic groups were more likely to expect to obtain more education compared to their male counterparts. This finding extends previous work (e.g., Bernsen et al., 2022) by demonstrating gender differences for the educational

expectations of rural youth from diverse racial/ethnic backgrounds. The gender difference could be explained by the gender disparities in ability beliefs for youths' educational expectations or aspirations (e.g., Bussey & Bandura, 1999), however, we did not explore the interaction of gender and ability beliefs. Additionally, it could be that males downshift their educational expectations because they are more often able to obtain employment and support their families without needing a postsecondary degree. That is, males may have more access to employment opportunities in their rural communities, and often these require less than a postsecondary education. In contrast, females may feel pushed to pursue postsecondary education due to more limited and inequitable access to local employment opportunities. Recognizing such inequities, it could also be that parents of females may pressure them to continue their education, whereas males have more options to decide between pursuing an education or employment after high school (Niccolai et al, 2022). Thus, more research is needed to understand the interplay between educational expectations and gender.

Residential Aspirations of Rural Youth

Our findings on rural residential aspirations revealed that relatedness plays different roles for diverse rural youth. Specifically, Black youth who have higher teacher classroom belonging are more likely to have rural residential aspirations compared to nonrural residential aspirations. These findings emphasize the instrumental role of teachers for minorities in shaping their rural residential aspirations. These findings support prior studies that demonstrated the influence of teachers on rural youth (e.g., Starrett et al., 2021). Consequently, rural teachers should seek ways to foster positive relations, especially with Black rural youth. On the contrary, White youth who had higher

peer classroom belonging were more likely to have undecided rural residential aspirations compared to those having nonrural aspirations. Prior studies emphasize that youth are more likely to stay with friends who are similar to them (Hallinan, 1983). Therefore, it could be that youth are affected by their peers' residential aspirations, but at the same time value their rural lifestyle, thus, having undecided residential aspirations. Further, compared to their younger counterparts, as Black, White, and students of other races/ethnicity get older, they were less likely to have rural residential aspirations (compared to nonrural aspirations). Similarly, compared to younger youth, older Black, White, and students of other races/ethnicity were more likely to have undecided residential aspirations (compared to nonrural aspirations). Overall, these findings are encouraging in battling the concerns of youth outmigration and suggest that adolescents with higher teacher and peer relatedness may be less likely to aspire to live in nonrural communities. Results revealing youth having undecided residential aspirations should not be concerning. Adolescence is a period of development where youth are in a high exploration and low commitment phase with regards to their identities, including rural identity (Marcia, 1989). Findings with age suggest that we need to expose rural youth to see the assets and opportunities in their rural communities (Starrett et al, 2022). Consequently, they can envision their occupational opportunities and understand the role they would play within their communities.

Implications

Overall, our study has both theoretical and practical implications for rural parents, teachers, school counselors, and policymakers. First, our findings suggest that it would be beneficial to emphasize the advantages of rural communities to rural youth and clearly

describe to them the employment that rural communities have. This direction would provide insightful information to rural youth who are undecided or desire to remain in rural communities. When working with rural youth, school counselors should consider rural youths' educational goals and rural aspirations in context. Specifically, for youth who aspire to remain in or return to rural communities, it may entail encouraging rural youth to explore careers that fit with the available employment in rural communities (Irvin et al., 2019; Limberg et al., 2021).

Prior studies documented that rural youth tend to leave their communities due to limited employment opportunities in their communities (e.g., Brown & Schafft, 2011). Leavers tend to be more talented and more well-trained and leave their communities for higher education and employment (Mills & Hazarika, 2001). Yet, leavers desire to return to their communities, this suggests that teachers and educators should emphasize what makes these rural communities attractive and encourage these leavers to return. Specifically, our findings suggest that teachers and peers play an instrumental role in youths' aspirations, consequently, rural educators and schools should provide teachers with strategies on how to create inclusive classroom environments where youth perceive that they can complete tasks in their classrooms if they have the support from their teachers and peers. If rural students in other rural areas are similar to those in our sample, about half of them aspire to live in a rural community or are uncertain about their rural aspirations. Rural youth who aspire to stay in rural communities or have uncertain rural aspirations may benefit from lessons that help them recognize educational and employment opportunities available within the community.

As some rural communities experience increasing employment opportunities, rural youth who desire to remain in those communities may not be aware of the local job opportunities, and thus seek careers that require lower education. This suggests that educators and parents should find ways to show rural youth what employment opportunities their communities have to offer them (Irvin et al., 2019; Limberg et al., 2021). Overall, identifying factors that foster rural youths' rural aspirations is important knowledge for parents and educators as they can educate and inform youth about the attractive characteristics of their community which in turn would allow youth to foster strategies to develop their communities. This information might be especially beneficial for youth with undecided rural aspirations because they would better understand the opportunities that their communities have.

Limitations and Future Research

While the current study highlights important findings on rural youths' educational expectations and rural residential aspirations, it does have some limitations. First, the nature of self-report assessment is one of the limitations as students' self-report may include bias that causes measurement error (Podsakoff et al., 2003). Second, this study is cross-sectional which is important in exploring predictors and, consequently, detecting important factors for intervention. However, cross-sectional studies cannot provide causality, thus, longitudinal research is needed to examine relationships between peer and teacher belonging and ability beliefs with educational expectations and rural residential aspirations to identify possible causal factors. Additionally, our study did not investigate rural youths' patterns of educational expectations and rural residential aspirations within the individual. Consequently, future studies should examine these variables together

using person-oriented approaches (e.g., latent profile analyses) to clarify the complex relationship that likely to exists between educational expectations and rural residential aspirations. Moreover, our study revealed the role of peers and teachers among diverse rural youth. Using social network analysis, future studies should examine whether being same race could explain the positive relationship. Lastly, our participants were in Title I rural schools in one Southeastern U.S. with about 68% minority students. Although this could be treated as a strength (because limited research has examined rural minority students in our region), our findings may not generalize to all rural students in more or less diverse rural environments or other regions of the country.

Conclusion

As prior studies argued, rural youths' lower educational expectations and increases in rural outmigration make understanding factors that motivate rural youths' educational expectations and rural residential aspirations important, especially given that youths' expectations and aspirations guide their future as they prepare for their postsecondary education and/or work. Limited research has examined how components of SDT relate to educational expectations and residential aspirations among diverse rural youth. Thus, our study fills this gap by employing motivational frameworks to understand rural youths' educational expectations and rural residential aspirations with a diverse sample. Our results suggest that SDT components play different roles for rural youths' educational expectations and rural residential aspirations. Additionally, our findings imply that if rural youth are uncertain about their residential aspirations, enhancing their social capital may be one way to promote their rural aspirations. Overall, our results

support that peer and teacher classroom belonging may be critical for rural youth in shaping their aspiration

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Table 4.1: Descriptive Statistics for the variables by race/ethnicity

	White		Black		Hispanic		Other		
	M	SD	M	SD	M	SD	M	SD	
Dependent variables									
Educational Expectations (0-3)	2.11	0.89	2.17	0.89	1.99	0.90	2.17	0.94	
Rural Residential Aspirations (0-2)	0.94	0.81	1.39	0.85	1.13	0.91	1.18	0.89	
Independent variables									
Ability Beliefs (1-6)	3.85	1.26	4.09	1.25	3.95	1.16	4.06	1.26	
Peer Classroom Belonging (1-6)	4.01	1.14	4.25	1.11	4.11	1.08	3.97	1.17	
Teacher Classroom Belonging (1-6)	4.49	1.16	4.72	1.09	4.49	1.07	4.52	1.16	
Gender (1= females, 2 = males)	1.49	0.50	1.45	0.50	1.41	0.49	1.48	0.50	
Age	14.48	1.76	14.96	1.85	14.08	1.73	14.16	1.75	
<i>N</i>	1750		2470		313		1049		

Table 4.2: Results from Logistic Regression Analysis for Educational Expectations based on race/ethnicity

<i>Predictor Variables</i>	<i>B</i>	<i>SE</i>	<i>p</i>	Adjusted odds ratios	
				<i>OR</i>	[95% CI]
Black students					
Ability Beliefs	0.27	0.07	< .001	1.317	1.152, 1.505
Teacher Classroom Belonging	-0.09	0.06	.884	0.991	0.879, 1.117
Peer Classroom Belonging	0.09	0.06	.122	1.100	0.975, 1.242
Gender	-0.84	0.08	< .001	0.430	0.365, 0.506
Age	-0.02	0.04	.672	0.984	0.912, 1.061
White students					
Ability Beliefs	0.32	0.06	< .001	1.383	1.215, 1.575
Teacher Classroom Belonging	-0.08	0.08	.300	0.916	0.776, 1.081
Peer Classroom Belonging	0.14	0.05	.009	1.157	1.037, 1.291
Gender	-0.80	0.09	< .001	0.446	0.368, 0.542

Age	0.03	0.04	.520	1.030	0.941, 1.129
<i>Other race/ethnicity students</i>					
Ability Beliefs	0.36	0.08	< .001	1.426	1.225, 1.660
Teacher Classroom Belonging	-0.23	0.07	< .001	0.798	0.694, 0.916
Peer Classroom Belonging	0.26	0.07	< .001	1.298	1.127, 1.495
Gender	-0.91	0.12	< .001	0.402	0.319, 0.506
Age	-0.57	0.05	.235	0.944	0.859, 1.038
<i>Hispanic students</i>					
Ability Beliefs	0.49	0.15	< .001	1.646	1.224, 2.212
Teacher Classroom Belonging	-0.03	0.12	.771	0.967	0.772, 1.211
Peer Classroom Belonging	0.22	0.15	.136	1.248	0.932, 1.669
Gender	-0.78	0.19	< .001	0.459	0.316, 0.668
Age	0.13	0.07	.072	1.134	0.989, 1.300

Table 4.3: Results from Logistic Regression Analysis for Rural Residential Aspirations based on race/ethnicity (Comparing Nonrural (referent group) and Rural Aspirations)

<i>Predictor Variables</i>	<i>B</i>	<i>SE</i>	<i>p</i>	Adjusted odds ratios	
				<i>OR</i>	[95% CI]
<i>Black students</i>					
Ability Beliefs	0.00	0.06	.886	1.008	0.900, 1.129
Teacher Classroom Belonging	0.18	0.07	.017	1.194	1.033, 1.382
Peer Classroom Belonging	-0.06	0.05	.216	0.944	0.861, 1.034
Gender	-0.02	0.15	.869	0.976	0.732, 1.301
Age	-0.11	0.05	.022	0.897	0.817, 0.984
<i>White students</i>					
Ability Beliefs	-0.03	0.04	.538	0.974	0.894, 1.060
Teacher Classroom Belonging	0.06	0.06	.372	1.059	0.934, 1.201
Peer Classroom Belonging	0.05	0.07	.491	1.054	0.907, 1.225
Gender	-1.12	0.09	.257	0.894	0.737, 1.085
Age	-0.08	0.03	.003	0.928	0.883, 0.974

Other race/ethnicity students

Ability Beliefs	0.01	0.09	.903	1.010	0.855, 1.194
Teacher Classroom Belonging	0.11	0.07	.107	1.116	0.977, 1.276
Peer Classroom Belonging	-0.31	0.05	.573	0.970	0.872, 1.079
Gender	0.19	0.14	.165	1.209	0.925, 1.582
Age	-0.17	0.04	< .001	0.844	0.778, 0.916

Hispanic students

Ability Beliefs	-0.06	0.15	.676	0.940	0.703, 1.256
Teacher Classroom Belonging	0.16	0.16	.319	1.172	0.857, 1.602
Peer Classroom Belonging	0.09	0.11	.389	1.094	0.891, 1.344
Gender	0.05	0.17	.760	1.053	0.758, 1.462
Age	-0.03	0.07	.719	0.975	0.851, 1.118

Table 4.4: Results from Logistic Regression Analysis for Rural Residential Aspirations based on race/ethnicity (Comparing Nonrural (referent group) and Undecided Aspirations)

<i>Predictor Variables</i>	<i>B</i>	<i>SE</i>	<i>p</i>	<i>Adjusted odds ratios</i>	
				<i>OR</i>	<i>[95% CI]</i>
<i>Black students</i>					
Ability Beliefs	0.00	0.07	.962	1.003	0.877, 1.147
Teacher Classroom Belonging	0.14	0.08	.072	1.147	0.988, 1.332
Peer Classroom Belonging	-0.14	0.09	.105	0.870	0.735, 1.030
Gender	0.40	0.11	< .001	1.487	1.211, 1.826
Age	0.06	0.06	.322	1.065	0.940, 1.208
<i>White students</i>					
Ability Beliefs	-0.06	0.05	.199	0.944	0.864, 1.031
Teacher Classroom Belonging	-0.02	0.05	.686	0.979	0.884, 1.08
Peer Classroom Belonging	0.19	0.06	< .001	1.211	1.085, 1.352
Gender	0.30	0.09	< .001	1.350	1.141, 1.596
Age	0.01	0.03	.687	1.014	0.948, 1.084
<i>Other race/ethnicity students</i>					

Ability Beliefs	0.02	0.07	.979	1.002	0.880, 1.140
Teacher Classroom Belonging	-0.06	0.09	.476	0.939	0.789, 1.117
Peer Classroom Belonging	-0.03	0.08	.749	0.976	0.838, 1.135
Gender	0.54	0.11	< .001	1.711	1.382, 2.119
Age	-0.14	0.07	.057	0.871	0.756, 1.004
<i>Hispanic students</i>					
Ability Beliefs	-0.30	0.15	.057	0.740	0.542, 1.010
Teacher Classroom Belonging	0.28	0.27	.306	1.319	0.776, 2.242
Peer Classroom Belonging	0.18	0.14	.210	1.198	0.903, 1.5.88
Gender	0.36	0.19	.057	1.427	0.990, 2.057
Age	-0.12	0.07	.081	0.890	0.781, 1.014

CHAPTER 5: DISCUSSION

The three studies contained within this dissertation contribute to the understanding of rural youth from White, African American, Hispanic, and Native American backgrounds and their teachers. Overall, these studies addressed the gaps in the literature by examining rural youths' experiences from multiple perspectives in order to gain a deeper understanding of rural teachers and rural attachment, educational expectations, rural residential, community, and proximity aspirations of diverse rural youth. The role of rural teachers in their students' lives is instrumental (Hardré & Reeve, 2003; Irvin et al., 2016; Starrett et al., 2021). Rural teachers can foster unique relationships with their students that can impact their students beyond the school day (Berry & Gravelle, 2013; Hardré et al., 2008). The experiences between rural teachers and their students can be more personal and maybe ingrained into the social fabric of these communities (Herzog & Pittman, 1995).

Therefore, Study 1 examined teachers living in proximity positively related to their teacher leadership abilities based on their own and their students' perspectives. Given the importance of peers and teachers for youth, Study 2 examined whether peer and teacher belonging in mathematics and science classrooms foster rural youths' rural attachment and aspirations. Study 3 investigated whether the influence of peers and teachers are as well influential in nurturing students' educational expectations and rural residential aspiration

Several studies have identified how rural teachers' social connectedness to represents their teacher leadership abilities (e.g., Lotter et al, 2020). But the research examining how these social community connections influence teacher leadership, especially from the perspectives of students has been missing. This first study from this dissertation adds to the limited literature that exists on rural teacher leadership. Findings from Study 1 revealed that teachers who feel like outsiders (the ones who experience power struggles), based on their students reports, displayed less teacher leadership abilities compared to other teacher groups. Additionally, while teachers' social connectedness to their rural schools may promote teacher leadership in rural science and mathematics classrooms, teachers who are intentionally disconnected socially from the rural community can also become teacher leaders. Overall, the current study has both theoretical and practical implications specifically for rural educators who want to better support teacher collaboration within rural communities. Administrations need to recognize the values of being from a rural community for teaching. But also, they need to understand the unique resources "outsiders" can provide in the classroom. Concurrently, educators need to encourage teachers to develop and extend relationships with peers and community members. Such connections support teacher leadership identity development. That is, as teachers connect with a local community and its members, not only do their feelings of isolation decrease, but they also build their confidence to become teacher leaders.

Prior studies revealed the influence of race, gender, and SES (Cook et al., 1995; Powers & Wojtkiewicz, 2004; Schoon & Parsons, 2002) on rural youths' occupational aspirations and attainment. However, research examining these factors on youths' rural attachment and aspirations has been lacking. Additionally, given the diverse nature of rural

U.S., especially in the Southeastern U.S., prior studies did not address rural youths' rural attachment and aspirations through their peer and teacher classroom belonging particularly with a diverse rural sample (i.e., African American, Hispanic, Native American, Pacific Islander, and Asian). Therefore, Study 2 bridge these gaps in the literature. Findings from Study 2 revealed that, overall, increases in perception of peer and teacher belonging have positive influences on diverse rural youth rural attachment and aspirations. Although both peers and teachers have a positive impact, teachers appear to matter more than peers, especially among Hispanic youth. This suggests that fostering teacher belonging among minority youth in rural communities may be an effective path in promoting their attachment and aspirations. Findings from Study 2 also highlight that rural educators have a powerful role in moderating lower levels of rural attachment and aspiration among the youth of color. For White rural students, peers appear to matter more for their rural attachments which emphasizes the importance of encouraging positive peer relations. Lastly, results provide insights for the development and implementation of sense of belonging interventions, especially in ethnically diverse settings.

Another gap in the literature was an understanding of how motivational frameworks (e.g., Self-Determination Theory) predicts diverse rural youths' educational expectations and residential aspirations. Thus, Study 3 filled this gap in the literature by utilizing Self-Determination Theory to understand how ability beliefs and peer and teacher classroom belonging explains diverse rural youths' educational expectations and rural residential aspirations. Results from Study 3 reveal both theoretical and practical implications for rural schools, teachers, and counselors. Specifically, results on ability beliefs highlight the importance of exposing rural youth to different classroom activities in the classroom so

they can develop the skills needed to foster their competencies, and therefore, expect to obtain higher education degrees. Additionally, it would be beneficial to illustrate the employment opportunities that rural communities have while emphasizing the benefits of living in a rural community. This information would be especially insightful for rural youth who have undecided residential rural aspirations and for the ones who aspire to remain in their communities but lack knowledge about the employment within their communities. Furthermore, rural teachers should incorporate rural context in their classrooms. This would allow rural youth, especially the ones who aspire to remain in or return to rural communities, to explore employment opportunities that fit with the available careers in rural communities (Irvin et al., 2019; Limberg et al., 2021).

Conclusion

This dissertation included the first studies to examine (1) the association between students' and teachers' perspectives of teacher leadership and teachers' social connectedness to their rural communities, (2) the relationship between perceptions of teacher and peer classroom belonging with rural attachment and aspirations (i.e., community and proximity aspirations) among diverse rural youth, and (3) how race/ethnicity moderates the relationships between ability beliefs, peer and teacher classroom belonging to rural youths' educational expectations and rural residential aspirations. Results demonstrated that teachers' social connectedness to their communities relates their teacher leadership abilities. Further, the relationship between peer and teacher classroom belonging to rural attachment, educational expectations, and rural aspirations (i.e., rural residential, community, and proximity) appears to be complex: while sometimes these associations differ across racial/ethnic

backgrounds, sometimes it is quite similar. Thus, findings from these studies have important implications in assisting diverse rural youth with their transition to adulthood. Results from the studies within this dissertation suggest that diverse rural youth who feel more connected to their peers and teachers are more likely to foster rural attachment, educational expectations, and rural aspirations, which in turn, in some conditions, may be more likely to aspire to remain in or return to their rural communities.

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