WHEN YOU'VE SEEN ONE RURAL CLASSROOM, YOU'VE SEEN ONE RURAL CLASSROOM: A QUALITATIVE MULTICASE STUDY

A Capstone

Presented to

The Faculty of the Curry School of Education

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Doctor of Education

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by

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Abstract

A tremendous range of communities, people, and circumstances comprise rural America. One of the things that rural places have in common, however, is the imperative to provide quality education to ensure the success of 9.8 million students (Johnson, Showalter, Klein, & Lester, 2014; Williams, 2010). Students in rural schools deserve high-quality teachers who understand the importance of place, value students' lived experiences, and build appropriate teaching and learning opportunities (White & Reid, 2008). I embarked on the current study in order to generate a better understanding of teachers' practices in one rural school division. In particular, through this study I explored how teachers in a rural school division conceptualize and enact their role as teachers in a rural context. Given the highly contextual nature of rural communities and the schools within those communities, to answer these research questions I used a qualitative multicase study design. I used the theoretical framework of activity theory to examine each case and make comparisons across cases. As a result of this study, I posit the following assertions, which have guided my recommendations for preparing teaching interns for this context:

- The teachers in this study conceptualize and consequently enact their role in different ways, which are particularly evident with respect to how the labor of teaching and learning is divided in their classrooms.
- The teachers in this study demonstrate characteristics of independence and interdependence, and those characteristics play a role in their selection of pedagogical tools that foster student autonomy and purposeful peer interactions.
- Although the teachers in this study select the same pedagogical tools that align with their characteristics of independence and interdependence, their

implementation of those pedagogical tools varies based on how they conceptualize their role.

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APPROVAL OF THE CAPSTONE PROJECT

This capstone project, *When You've Seen One Rural Classroom, You've Seen One Rural Classroom: A Qualitative Multicase Study*, has been approved by the Graduate Faculty of the Curry School of Education in partial fulfillment of the requirements for the degree of Doctor of Education.

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Dr. Catherine Brighton, chair

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DEDICATION

To a wise, willful, wonderful woman.

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Alone we can do so little; together we can do so much.

~ Helen Keller

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Chapter 1: Introduction

A tremendous range of communities, people, and circumstances comprise rural America. In his handbook for legislators, *Revitalizing Rural Education*, Sher (1978) asked:

> What do an island village off the coast of Maine, a coal-mining town in West Virginia, a ranching area in Wyoming, a college town in Minnesota, an impoverished community in the Mississippi delta region, a ski-resort section of Vermont, a migrant-worker settlement in Texas, an Alaskan native [*sic*] village near the Arctic Circle, and a prosperous grain-farming area in Iowa all have in common? Not much, except that they are all classified as *rural* areas of the United States. (p. 3)

As succinctly stated by a rural sociologist, "when you've seen one rural community, you've seen one rural community" (Theodori, 2003, para. 1).

Depending on the definition used—population density or geographic isolation, for example—the share of the U.S. population considered rural ranges from 17 to 49 percent (Cromartie & Bucholtz, 2008). The National Center for Education Statistics (NCES; n.d.) distinguishes rural areas by their distance from an urbanized area. For example, a rural, distant locale is a,

> census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as a rural territory that is more than 2.5

miles but less than or equal to 10 miles from an urban cluster. (NCES, [n.d.], "New Urban-Centric Locale Codes", para. 11)

Regardless of the characteristics used to define them, one thing that rural places have in common is the imperative to provide quality education to ensure the success of 9.8 million students (Johnson, Showalter, Klein, & Lester, 2014; Williams, 2010). Nearly one in five of the nation's students attend a public school designated as rural (e.g., Williams, 2010), and the rural school often serves as the traditional heart of its community (e.g., Thomas, 2005; White & Reid, 2008). Rural schools are particularly positioned to provide a sense of connection to the past, the present, and the future (Halsey, 2005). Furthermore, rural schools "must not only prepare their students for life in the local community but also for the adjustment into more urban communities so that their students are able to function effectively in both environments" (Gardener & Edington, 1982, p. 1).

Students in rural schools deserve high-quality teachers who understand the importance of place, value students' lived experiences, and build appropriate teaching and learning opportunities (White & Reid, 2008). Virginia, in particular, is home to more than 350,000 rural students—over a quarter of the total student population—and rural education should be a "major" priority for policymakers to address within the state (Johnson et al., 2014, p. 26). White and Reid (2008) suggested that teacher preparation programs can "more successfully prepare teachers for rural settings if they understand and enact teacher education curriculum with a consciousness of and attention to the concept of place" (p.1). Furthermore, they argued that "place conscious pedagogies open a way for all teacher education institutions to address the needs of rural schools and their

communities—and indeed provide a framework for enriching the engagement of all teachers in their school communities, regardless of location" (White & Reid, 2008, pp. 1-2).

Background of the Problem

In their narrative literature analysis examining the storylines of rural teachers told through research published between 1970 and 2010, Burton, Brown, and Johnson (2013) identified four storylines of rural education: (a) professional isolation of teachers; (b) comparisons with urban and suburban teachers; (c) teachers' lack of professional knowledge and credentials; and (d) teachers' resistance to change. The authors stated that they are "troubled by the notion of 'place as obstacle' or 'place as deficit'" and called for further investigation "into the complexity and layers of issues in rural education and with rural teachers… in order to provide potential counter-narratives and alternative storylines to these portraits, or to provide more detail into the complexity of these issues" (Burton et al., 2013, p. 9). An asset-based approach (Kretzmann & McKnight, 1993) to education research in rural contexts can draw on the capacities, skills, and assets of rural teachers to challenge the deficit-based narratives and "add to the multidimensional story of rural education" (Burton et al., 2013, p. 9).

Problem of Practice

In their report, *Preparing Teachers to Teach in Rural* Schools, Barley and Brigham (2008) identified several program components intended to support pre-service teachers for teaching in rural contexts; among them, practice-teaching placement in rural schools and courses focused on rural issues. The University of Virginia's Curry School of Education places pre-service teachers in rural schools for their teaching internships,

however lacks a course focused on rural issues. In contrast, Curry provides urban placements with complementary seminars focused on the urban context. Though this capstone, I examined the practices of teachers in one rural school division, which has informed implications for practice to support Curry's pre-service teachers placed in that school division for their teaching internship.

Primary Research Questions

I undertook the current study in order to generate a better understanding of what the work of teachers looks like in this particular context. In particular, How do teachers in a rural school division,

- Conceptualize their role as teachers in a rural context?
- Enact their role as teachers in a rural context?

Research Design

Given the highly contextual nature of rural communities and the schools within those communities, to answer the research questions I used a qualitative multicase study design, which involved collecting and analyzing data from more than one case (Merriam & Tisdell, 2016). The sample of teachers invited to participate in this study was purposively selected from the population of teachers from one rural school division who have participated in a course, Mentoring Novice Teachers, through the teacher education program at the Curry School of Education. All teachers recommended to take the course had to be approved by school building and division leadership and were required to submit an application. Selecting teachers from the same school division who had taken this course ensured that the cases shared some link (Goddard, 2012) and allowed for the development of a better understanding of and the ability to theorize about (Chmiliar,

2012) rural education in this particular context. Through interviews with teachers (n = 2) in the rural school division, observations of their classrooms, and analysis of instructional documents, I developed an in-depth analysis of each case (Creswell, 2014). Interviews were recorded, transcribed, and coded using both deductive codes based on existing theoretical frameworks, as well as inductive codes that emerged from the data (Marshall & Rossman, 2011). Similarly, field notes of classroom observations and instructional documents were qualitatively coded both deductively and inductively. Analysis of each data source—interviews, observations, and instructional documents—for each case enabled confirmation of emerging constructs and extension to reveal complementary aspects (Santos & Eisenhardt, 2011) of the activity systems in each case.

Theoretical Framework

I relied on activity theory to provide a framework for my data analysis. According to activity theory, human actions and learning are mediated by tools within a social and environmental context (Krasny & Roth, 2010). Activity systems analysis can be used as a tool for understanding complex human learning situations that can be observed in natural settings (Yamagata-Lynch, 2010). Activity theory is particularly applicable to the study of teaching because it implies that individuals' understandings and practices are shaped by their settings (Leko & Brownell, 2011). The setting, and thus the activity system, of a given teacher's classroom influences the understandings and practices of the teacher as a result of the interaction between individuals' histories and mediating artifacts—the tools, social others, and prior knowledge that contribute to the teacher's mediated action experiences within the activity system (Yamagata-Lynch, 2010). Particularly in a rural teaching context, mediating artifacts may include pedagogical tools (Grossman, Valencia,

Evans, Thompson, Martin, & Place, 2000) such as place-conscious pedagogies (Gruenewald, 2003) that support teachers in working with and from an "attention to the *specificity* of particular places or place-communities" (White & Reid, 2008, p. 1). Activity theory illustrates influences on teacher practices such as prior beliefs, knowledge, and experiences, as well as the contexts in which learning takes place (Leko & Brownell, 2011).

Summary

In this chapter, I outlined the need for additional, asset-based research focused on rural education. I addressed this gap in the knowledge through a study of how teachers in a rural school division conceptualize and enact their role as teachers in a rural context. The findings from the study have led me to make recommendations for the Curry School of Education to support pre-service teachers working in this context.

In the next chapter, I detail relevant research on rural education, explore the ways in which activity theory was used as a lens to understand rural teaching, and illuminate gaps in the knowledge base that remain to be explored.

Chapter 2: Literature Review

Through this study, I explored how teachers in a rural school division,

- Conceptualize their role as teachers in a rural context.
- Enact their role as teachers in a rural context.

Through the following literature review, I present findings from previous research on rural education—and particularly rural teaching—as well as how previous researchers have used the theoretical framework of activity theory as a lens to analyze the work of teaching in rural contexts.

Rural Education

According to the most recent *Why Rural Matters* (Johnson et al. 2014), 9,765,385 students were enrolled in rural school districts in the 2010-2011 school year. The 2013-14 *Why Rural Matters* report is the seventh in a series of biennial reports produced by the Rural School and Community Trust analyzing the condition of rural education in the United States. The data used in the report were compiled from information collected and maintained by the National Center for Education Statistics (NCES) and the U.S. Census Bureau. Johnson and his colleagues framed the report around five factors for each state: (a) the importance of rural education; (b) the diversity of rural students and their families; (c) socioeconomic challenges facing rural communities; (d) the educational policy context impacting rural schools; and (e) the educational outcomes of students in rural schools.

Johnson and his colleagues (2014) stated that more than half of all rural students in the United States attended school in just 11 states, including some of the country's most populous and urban states. Furthermore, "growth in rural school enrollment continues to outpace non-rural enrollment in the United States, and rural schools continue to grow more complex with increasing rates of poverty, diversity, and students with special needs" (Johnson et al., 2014). Virginia, in particular, was home to more than 350,000 rural students—over a quarter of the total student population (Johnson et al., 2014). According to the most recent *Why Rural Matters* report, rural education should be a "major" priority for Virginia policymakers to address (Johnson et al., 2014, p. 26). While Virginia does not rank in the highest priority quartile on any of the gages, the state ranks in the second highest priority quartile with respect to importance, student and family diversity, and educational policy context. Notably, instructional expenditures for each student in Virginia are on par with the national average, however rural districts spend a disproportionately high amount on transportation. Furthermore, over a quarter of Virginia's rural students self-identify as non-White (Johnson et al., 2014), and between 1999 and 2009, the state's rural Hispanic student enrollment grew by nearly 300% (Strange, Johnson, Showalter, & Klein, 2012).

Johnson and his colleagues (2014) acknowledged that their analyses do not reveal the considerable variation in rural contexts and conditions that may exist within a state. As such, their indicators represent the average for a particular state, but rural regions within the state may differ considerably from the state average. Moreover, the *Why Rural Matters* authors acknowledged that one-size-fits-all policy to address the "mounting evidence that rural education is becoming a bigger and even more complex part of our

national educational landscape" is woefully inadequate. Their conclusion points to the need for additional, small-scale, contextualized research to address the needs of individual rural school districts.

Rural schools. Rural schools often serve as the traditional heart of their communities (e.g., Thomas, 2005; White & Reid, 2008). However, rural communities continue to struggle from the economic downturn of 2007-08 (Johnson et al., 2014). Writing over 30 years ago, Meier and Edington (1983) stated, "rural areas have been deprived of their fair share of America's wealth and public services and have been excluded from the standard of living enjoyed in metropolitan areas of the United States (p. 3). Recent popular literature such as *Hillbilly Elegy* (Vance, 2016) indicate that—despite the intervening years—rural residents feel that this is still the case.

In their review of the literature on teacher preparation and in-service programs in rural areas, Meier and Edington (1983) posited,

> Schools are a key to the "quality of life" issues which face rural communities. Schools traditionally have been perceived as the means for integrating individuals into society, for providing an historical and cultural base, and for providing students with the skills to become productive members of society. (p. 3)

Whereas the above quotation presents a positive view of schools in general, Meier and Edington's research synthesis presented multiple dilemmas facing rural educators, including large class load, multiple preparations, and the expectation to take on extracurricular duties. Furthermore, the authors found that the task of organizing the curriculum is usually left up to the teacher and "textbook companies and other curriculum

development producers have ignored the needs of rural schools because the numbers involved are so small as to limit profitability" (Meier & Edington, 1983, p. 4).

In contrast to Meier and Edington's (1983) research synthesis, in which the authors viewed rural education through a deficit lens, Roth (2010) argued that there are great advantages in rural education. In his self-study of science teaching and learning in one rural community, Roth acknowledged the challenges facing rural education, but questioned such a deficit-based approach:

> Due to remoteness, rural communities and schools generally face serious economic and community resource constraints, a fact that places students in rural schools at risk both in terms of motivation and academic achievement. Rural schools often have available fewer support programs and extracurricular activities than are available to students in more suburban and more affluent regions of industrialized nations. It is not astonishing, therefore, that a considerable part of the scholarly literature uses a deficit discourse when it comes to the situation and the opportunities rural schools and communities offer to the education of their younger generations. But does this have to be? (p. 52)

Instead, he argued that "rural settings provide particular opportunities for implementing the idea of 'learning communities,' where the term 'community' goes beyond denoting classrooms or school and extends to the entire village or municipality" (Roth, 2010, p. 51). As a teacher in a rural Canadian village, Roth engaged his students in place-based education that capitalized on students' everyday lives and allowed them to participate in village life and "learn in the process of contributing to the social fabric of their setting" (Roth, 2010, p. 51). Although his conclusions are not generalizable due to the nature of

his self-focused case study, the thick description he used to capture his experiences teaching in a rural community allow his pedagogical approach to be transferred to other settings. As Roth stated, "the sky is the limit for someone wanting to innovate and capitalize on the opportunities rural communities offer to the educator and its students" (p. 80), and additional research should be conducted to examine how similar asset-based approaches are applied in other rural contexts.

Rural teachers. Students in rural schools deserve high-quality teachers who understand the importance of place, value students' lived experiences, and build appropriate teaching and learning opportunities (White & Reid, 2008). Burton and her colleagues (2013) articulated a "pragmatic necessity and empirical imperative" (p. 2) to understand the individuals that teach in rural schools. In their narrative literature analysis of the storylines of rural teachers, Burton and her colleagues identified four themes associated with rural teachers in research published between 1970 and 2010 that perpetuate what they term the "'rural problem' storyline" (Burton et al., 2013, p. 1). Three of the four storylines—rural teachers are professionally isolated, rural teachers are often lacking in professional knowledge or teaching credentials, and rural teachers are particularly resistant to change—foreground the notion of "place as deficit" (Burton et al., 2013, p. 9). In articles classified under the fourth storyline—rural teachers are different from urban and suburban teachers—researchers "emphasized aspects such as agrarian lifestyles, geographic isolation, the close-knit nature of the community, homogeneous cultures, and fewer social complexities" (Burton et al., 2013, p. 5). Whereas some of the articles classified in this category included problems such as

recruiting qualified teachers, many of the authors romanticized rural teachers and the rural setting.

Given what Burton and her colleagues (2013) refer to as a "dearth of research focused on rural teachers in the United States" (p. 8), the simplistic portrayal of rural teachers is particularly problematic. Throughout the literature, rural teachers were either cast as the "'problem' within the rural teaching context " (Burton et al., 2013, p. 8) or were romanticized as the protagonists working to overcome the problem of the rural context. Neither negative nor romantic portrayals capture the complexities of rural teachers and their practices. Burton and her colleagues articulated the need for additional research that provides counter-narratives to the four storylines, particularly "qualitative research that explores the stories of teachers in rural areas, their successes, and their needs" (Burton et al., 2013, p. 9). In fact, only 27% of the research studies identified by Burton in her colleagues relied on qualitative methods such as interviews, participant observation, or artifact analyses. The current study is intended to address this "dearth" of research and contribute to a deeper understanding of the complex activities of teachers in rural schools.

Teacher preparation for rural contexts. The rural education literature is replete with references to the difficulty of recruiting and retaining high quality teachers for rural schools (e.g., Azano & Stewart, 2015; Barley & Brigham, 2008; Monk, 2007). Furthermore, "teacher education is implicated in the provision of quality teachers for rural and remote schools" (White & Reid, 2008, p. 4). Efforts to recruit teachers for rural schools are wasted if those teachers are not adequately prepared for the students and the contexts in which they will teach (Azano & Stewart, 2015). Unprepared teachers

contribute to a "staffing churn" that leads to a "vicious cycle of decline," wherein students and families perceive that schools are not committed to them and teachers sense that students and their families are unwilling to commit to education (White & Reid, 2008, p. 3).

In their research synthesis of teacher preparation for rural schools, Meier and Edington (1983) described how colleges and universities could provide interventions to address this "vicious cycle" (White & Reid, 2008, p. 3). They reported that to contribute to solutions for rural schools, institutions of higher learning could assess rural needs, provide special training programs for rural educators, create off-campus centers to meet teacher training needs, and build curriculum expertise. Whereas Meier and Edington (1983) focused on the needs—rather than the assets—of rural schools, they recognized the need for colleges and universities to "work *with* rural educators" (p. 7). In an analysis cited by Meier and Edington, Warner and Kale (1981) recommended that additional study and attention be given to understanding rural communities. In particular, they called for research that analyzes and synthesizes successful rural classroom practices including "characteristics of rural 'master teachers'" (Warner & Kale, 1981, pp. 8-9). A focused analysis of the successful practices of rural master teachers is precisely the type of research that I undertook with this study.

Similar to Meier and Edington and Warner and Kale, Boyer (2006) also articulated a bottom up approach to supporting rural education and training rural teachers. In *Building Community*, a report on the National Science Foundation's Rural Systemic Initiative, Boyer (2006) stated,

> Change cannot be imposed from the outside, but be nurtured from within. The perceived needs of American Indian students—and tribal nations—are not the same as the needs of students in the South Texas 'colonia' or an Appalachian 'holler.' While excellence is a national goal, the path to excellence must be forged by local communities—especially in highly rural regions where the values of community, culture, and tradition are often maintained. (p. 6)

Boyer's sentiment is echoed by Zeichner and his colleagues who examined "*whose knowledge counts* in the education of teachers" (Zeichner, Payne, & Brayko, 2015, p. 123). They advocated for the "creation of new hybrid spaces in university teacher education where academic, school-based, and community-based knowledge come together … to support teacher learning" (Zeichner et al., 2015, p. 124). As a result of this proposed study, I intend to create a "hybrid space" within one teacher education program, capitalizing on the knowledge, skills, and dispositions of rural master teachers to support teacher learning.

Attempting to explore a similar "hybrid space" in their inquiry into teacher education and the sustainability of rural communities in Australia, White and Reid (2008) suggested that teacher preparation programs can "more successfully prepare teachers for rural settings if they understand and enact teacher education curriculum with a consciousness of and attention to the concept of place" (p.1). Furthermore, they argued that "place conscious pedagogies open a way for all teacher education institutions to address the needs of rural schools and their communities—and indeed provide a framework for enriching the engagement of all teachers in their school communities, regardless of location" (White & Reid, 2008, p.1-2). Additionally, pre-service teachers

need opportunities to observe and experience the rural setting and consider how to participate and respond in terms of pedagogy as a member of a rural community (Halsey, 2005). In order to accomplish this, Halsey suggested that teacher preparation focusing on rural schools begin with a community focus and then move to the classroom—instead of maintaining an exclusive focus on the classroom. A community focus provides pre-service teachers with an understanding of the links between the classroom, the school, and the wider community (White & Reid, 2008). Such a community focus allows pre-service teachers to access the funds of knowledge (Moll, Amanti, Neff, & Gonzalez, 1992) present in rural communities.

In contrast to these assertions of the need to attend to rural issues in teacher preparation, Barley and Brigham (2008) found that "rural coursework was not commonly used to prepare candidates for rural teaching" (p. 9). The authors identified five promising program components to prepare teachers for rural settings: (a) providing options for prospective teachers to become certified in multiple certification areas; (b) promoting access to teacher preparation and professional development through distance learning opportunities and courses in rural communities; (c) focusing on recruiting to teaching individuals who already reside in rural areas; (d) offering practice-teaching opportunities in rural communities; and (e) offering courses for prospective teachers focused on issues related to teaching in rural communities. Barley and Brigham concluded that of the 120 teacher preparation programs in the Central Region of the US—a region with the greatest percentage of rural students in the country—only nine programs had three or more of the "promising" components. Notably, only one program included rural coursework. Based on in-depth interviews with teacher educators at each

of nine “promising” programs, the primary reason for the lack of rural coursework “appears to be that many of the institutions are in areas that recruit students already familiar with rural life" (Barley & Brigham, 2008, p. 9)

Barley and Brigham’s (2008) conclusions, however, contrast with Azano and Stewart’s (2015) findings that “rural exposure or having a personal history in a rural school or community alone does not necessarily prepare one for success in rural schools” (p. 7). Student teachers placed in rural schools from both rural and suburban backgrounds, for example, expressed perceptions of their students as unmotivated. Similarly, Winter (2013), in her analysis of Appalachian pre-service teachers, found that not only did teacher candidates reject unfavorable stereotypes placed on them by outsiders, they also characterized their future Appalachian students with the same stereotypes. In both cases, candidates’ backgrounds alone did not prepare them to address the complexities of teaching in a rural context.

Relying on rural students’ apprenticeships of observation (Lortie, 1975) as adequate preparation for rural teaching is a fallacy (Azano & Stewart, 2015). Drawing on their work preparing English teachers for rural Montana, Eckert and Petrone (2013) stated that most of their students—“despite the fact that most of them grew up in rural communities in Montana—expressed deficit orientations toward rural education” (p. 72). The fact that this deficit model persists for pre-service teachers with both rural and non-rural backgrounds highlights the importance of rural-focused coursework and “explicit instruction on theory and pedagogies for success in rural schools” (Azano & Stewart, 2015, p. 8). Moreover, pre-service teachers need opportunities to confront their own and their future students’ cultural contexts and explore ways to capitalize on the funds of

knowledge (Moll et al., 1992) present in rural students and rural communities (Azano & Stewart, 2015). Without providing pre-service teachers with a critical frame for problematizing their preconceptions, pre-service teachers might default to negative perceptions and stereotypes of rural students.

In 1983, Meier and Edington reported that most rural teachers come from the communities in which they teach. Two and a half decades later, Barley and Brigham (2008) reported the difficulties that rural schools face in recruiting and retaining a qualified teacher workforce. It would seem that—based on the needs of rural schools—teacher preparation programs are positioned to provide the critical experiences necessary to prepare teachers for rural contexts. I recognize that solving the problem of recruitment and retention in rural schools is beyond the scope of the current study and that my recommendations will only address a small piece of the larger, complex problem. As Azano and Stewart (2015) articulated,

> Staffing rural schools with high-quality teachers and retaining those teachers is an issue of justice and equity, and we advocate for the creation of a school [teacher preparation] model in which the experiences of all cultural, racial, geographic, and socioeconomic contexts are valued and integrated into the curriculum. (p. 3)

It is a lofty goal and in order to continue to strive for such a model, we must recognize that acting alone, neither schools nor universities can adequately educate our nation's teachers in general (Zeichner et al., 2015), or rural teachers in particular. In the sections that follow, I outline activity theory as a means to access the "expertise that exists in the communities that are supposed to be served by schools" (Zeichner et al., 2015, p. 132)

and the ways in which it provides a framework for understanding the work of teaching in rural contexts.

Activity Theory

Activity theory was fist conceptualized by Vygotsky in the early twentieth century and centered around the idea of "*mediation*" (Engström, 2001, p. 134). From an activity theory perspective, human activity is a series of processes that act as a bounded system (Yamagata-Lynch, 2010). With activity theory, Vygotsky challenged the direct connection between stimulus and response and articulated the theory that "the individual could no longer be understood without his or her cultural means; and the society could no longer be understood without the agency of individuals who use and produce artifacts" (Engeström, 2001, p. 134). Activity theory is often illustrated as a triangle with the subject, object, and mediating artifact comprising its vertices (see Figure 1). In this graphic, the subject is the individual or individuals engaged in the activity, the object is the goal of the activity, and the mediating artifact includes the tools, social others, and prior knowledge that contribute to the subject's mediated action experiences within the activity (Yamagata-Lynch, 2010).

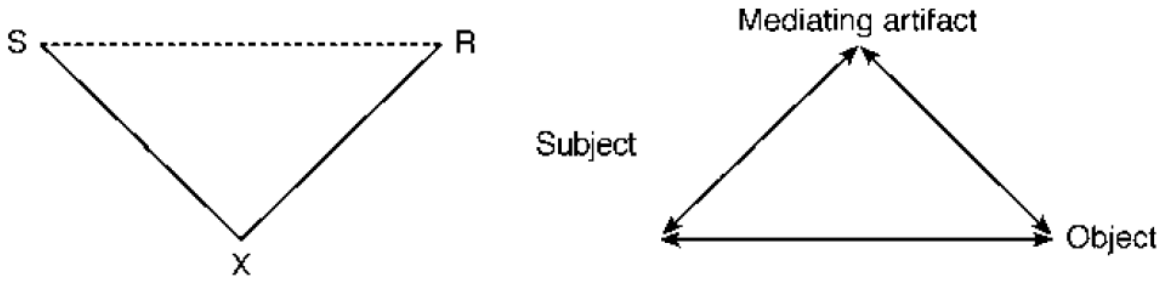


Figure 1. Vygotsky's model of mediated action and its common reformulation. From Engeström, 2001.

Vygotsky's conceptualization of activity theory, however, relied on the individual as the unit of analysis. In what Engström (2010) referred to as the "second generation" (p. 134) of activity theory, the unit of analysis shifted to the complex interrelations between the individual subject and his or her community. Within the bounded system, activity arises through a reciprocal process that transforms the subject, the object, and the relationship between the two and their context (Yamagata-Lynch, 2010). This new articulation provided a conceptual map to the major loci among which human cognition is distributed and includes other people who must be taken into account simultaneously with the subject as constituents of human activity systems (Cole & Engeström, 1993). The second generation model considers the community, the social rules that govern that community, and the division of labor between the subject and others as integral aspects of the activity system (Figure 2).

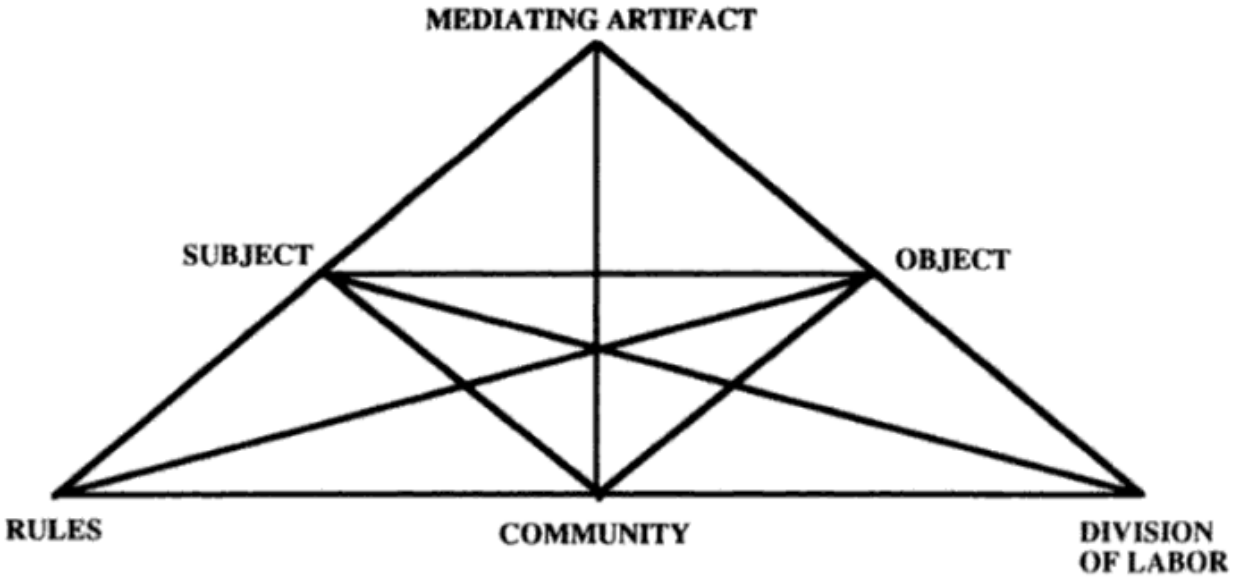


Figure 2. The activity system. From Cole & Engeström, 1993.

Activity theory is commonly used in educational research as a conceptual lens through which data are interpreted (Engeström, 2016). Furthermore, activity theory is a

useful framework for "illuminating how teachers choose pedagogical tools to inform and conduct their teaching" (Grossman, Smagorinsky, & Valencia, 1999, p. 4). Within the field of education, activity theory has been used to explore pre-service teachers' appropriation of pedagogical tools (e.g., Grossman et al., 2000; Leko & Brownell, 2011) and in-service teachers' professional development (e.g., Yamagata-Lynch, 2003; Yamagata-Lynch & Haudenschild, 2009). More recently, activity theory has been used as a lens to explore technology and online learning formats in education (e.g., Aguayo, 2016; Gedera, 2016; Mwalongo, 2016; Ramanair, 2016; Tay & Lim, 2016). Few studies have been conducted to examine education in rural contexts through the lens of activity theory, and most of those that do exist were conducted in other countries such as South Africa (e.g., Hardman, 2005; Mukeredzi & Mandrona, 2013) and Australia (e.g., Lloyd & Cronin, 2002). None of those studies, however, took a naturalistic approach to observing in-service teachers' practices. For example, Hardman (2005) and Lloyd and Cronin (2002) used activity theory to examine teachers' practices following the introduction of new technological tools into their activity system. A notable exception of the use of activity theory to explore a rural teacher's practice is *A Case Study of David, a Native Hawaiian Science Teacher* (Chinn & Hana'ike, 2010), which focused on a teacher of indigenous students in a rural context. Given the highly contextualized relationship between rural schools and the communities they serve (White & Reid, 2008), activity theory seems to be an ideal lens through which to examine teaching and learning in a rural context. Up to this point, however, activity theory's application in rural education research has been minimal with respect to exploring teachers' enactment of their role as teachers in a rural context.

In the sections that follow, I synthesize the findings of several studies of rural teachers to illustrate the elements of an activity system. I explore how subject, object, mediating artifact, rules, community, and division of labor might manifest in a rural education context based on the extant literature. Whereas the various nodes of the activity system have been teased apart for the purposes of explanation, it is important to remember that each of these elements is inextricably linked to the others.

Subject. In a Rural Network Monograph published in 1981 entitled *Training, Recruiting, and Retaining Personnel in Rural Areas*, the authors outlined characteristics of "individuals who are likely to most successfully work in the rural environment" (Casto et al., 1981, p. 3). According to the authors, "the necessary and sufficient conditions for living and working successfully in rural areas" (p. 3) include: (a) previous experience in a rural environment; (b) appreciation of rural culture; (c) professional independence; (d) a personal support system; and (e) rural recreational interests. As Casto and his colleagues (1981) pointed out, "one of the biggest frustrations for professionals in rural areas is not having the ability to consult with other professionals on a daily basis" (4). They also indicated that an inability to participate in meaningful in-service training could further compound the problem. To ameliorate this dilemma, they advocated for recruiting individuals who are self-sufficient and able to function independently on the job. Furthermore, they suggested that having a personal support system of friends and co-workers that live and work in the same rural area could provide professionals with people they can depend on and share feelings with, as well as who can provide them with reinforcement and constructive criticism.

Object. The object, or goal (Yamagata-Lynch, 2010), of rural classroom activity systems often includes building relationships to support student learning (e.g., Azano & Stewart, 2015; Chinn & Hana'ike, 2010). For example, in one case study, the teacher developed "strong bonds of 'mentorship'" with his students to build relationships and facilitate learning, particularly with "alienated students" (Chinn & Hana'ike, 2010, p. 240). Rural researchers have suggested that the ability to build strong relationships with students might be facilitated by involvement in the community (e.g., Kline, White, & Lock, 2013), small school size (Waller & Barrentine, 2015), or teaching students across multiple courses (Martin & Yin, 1999).

Mediating artifact. Studying teaching using the activity theory framework includes identifying the tools, or mediating artifacts, that teachers use to guide and implement their classroom practice (Grossman et al., 1999). Those pedagogical tools may take the form of conceptual tools or practical tools. Conceptual tools consist of the "principles, frameworks, and ideas about teaching, learning, and … [content] acquisition that teachers use a heuristics to guide decisions about teaching and learning" (Grossman et al., 1999, p. 14), such as constructivism or instructional scaffolding. Practical tools, on the other hand, include "classroom practices, strategies, and resources that do not serve as broad conceptions to guide an array of decisions but, instead, have more local and immediate utility" (Grossman et al., 1999, p. 14). Such practical tools could include textbooks, curriculum materials, and content-specific exercises.

Across the literature on rural teachers, pedagogical tools range from a basal series from a commercial reading program (Waller & Barrentine, 2015) to teacher-created place- and culture-based science curricula (Chinn & Hana'ike, 2010). For the teachers in

both Chinn and Hana'ike's (2010) study and Waller and Barrentine's (2015) study, lived experiences in their school's community contributed to their desire and ability to integrate place-based knowledge into their curriculum and help students make connections between their personal lives and the academic content, rather than formal training during their teacher preparation. Two specific pedagogical tools often referenced in studies of rural teaching are culturally relevant pedagogy and place-based education.

Culturally relevant pedagogy. Culturally relevant teaching is a pedagogy specifically committed to collective empowerment (Ladson-Billings, 1995). In order for teaching to be culturally relevant: "(a) Students must experience academic success; (b) students must develop and/or maintain cultural competence; and (c) students must develop a critical consciousness through which they challenge the status quo of the current social order" (Ladson-Billings, 1995, p. 160). Ladson-Billings (1995) articulated that academic success is about more than making students "feel good;" it is about helping students "choose" academic excellence (p. 160). For example, Ladson-Billings wrote about a White teacher who capitalized on her African American male students' social power by drawing on issues and ideas they found meaningful. As a result, these students began to take on academic leadership roles, serving as positive role models for their peers.

According to Ladson-Billings (1995), "culturally relevant teachers utilize students' culture as a vehicle for learning" (p. 161). Although the teachers that Ladson-Billings studied had unique characteristics, they all saw themselves as part of the community in which they taught and viewed teaching as a way to give back to that community. These culturally responsive teachers were able to help students learn more

about who they are and where they come from. In a similar way, place-based education provides a means by which students can learn more about where they are and the place they currently have in common, regardless of their cultural background.

Place-based education. Place-based education is a pedagogy aimed at grounding learning in local phenomena and students' lived experience (Smith, 2002). As such, place-based education "provides a rich avenue for learning centered on helping students make connections between curriculum and their community's culture, environment, and history (Lester, 2012, p. 409). In their introduction to a special issue of *Children, Youth and Environments* focused on place-based education, Barratt and Barratt Hacking (2011) stated that place-based education provides a relevant and meaningful learning context for students, which in turn provides the "opportunity for applied learning that supports knowledge transfer and application" (p. 8).

Extending and elaborating on the idea of place-based education, Gruenewald (2003) described place-conscious education as a pedagogy that "aims to enlist teachers and students in the firsthand experience of local life and in the political process of understanding and shaping what happens there" (p, 620). Although Gruenewald (2003) argued that improved standardized test scores are not the point of place-based or place-conscious education, evidence suggests that students in these sorts of programs learn more effectively than students who learn within a "traditional educational framework" (Lieberman & Hoody, 1998, p. 2). In their foundational study of 40 California schools that used the environment as an integrating context for learning, Lieberman and Hoody (1998) reported that participating students: (a) performed better on standardized measures of academic achievement in reading, writing, math, science and social studies; (b)

experienced fewer discipline and classroom management problems; (c) demonstrated increased engagement in and enthusiasm for learning; and (d) expressed greater pride and ownership in accomplishments.

In a smaller, more localized study of a place-based math and science initiative in a rural Louisiana parish, Emekauwa (2004) found that the performance gap between the district and the state decreased for all subject areas as teachers participated in professional development on place-based learning. Most notably, the greatest individual school success occurred at an elementary school where three of the district's place-based leadership team taught. Teachers in Emekauwa's (2004) study were able to use their pedagogical content knowledge of place-based education to support student learning and academic achievement.

On the other hand, in a recent study of Singaporean teachers' understandings of a newly introduced "place-based approach" (Tan & Atencio, 2016, p. 25), the authors found that teachers lacked the deeper understandings of place-based education necessary for full engagement with the learning process underpinning place-based pedagogies. Drawing on analysis of survey and interview data, Tan and Atencio (2016) suggested that teachers build their understanding of the history, culture, and ecology of specific local places and help students build connections with local people in the community. The authors recommended that professional development and teacher education help address the gap in teachers' knowledge of place-based pedagogies and advocated for additional research to explore how such efforts could further support teachers' enactment of place-based education.

Rules. Educators who draw on culturally relevant and place-based pedagogies must also meet the requirements placed on them by local, state, and national agencies (Chinn & Hana'ike, 2010), but the ways in which they meet and challenge those guidelines helps to define them (Ladson-Billings, 1995). In particular, the No Child Left Behind Act of 2001 (NCLB) had important implications for rural educators (e.g. Barley & Brigham, 2008; Powell, Higgins, Aram, & Freed, 2009; Shamah & McTavish, 2009; Yettick, Baker, Wickersham, & Hupfeld, 2014), especially the Highly Qualified Teachers requirements and the mandate that schools make Adequate Yearly Progress (Yettick et al., 2014). In rural districts in particular, "the standardized test scores of a single student could have a greater impact on the academic performance of the entire school than larger urban and suburban school districts" (Powell et al., 2009, p. 19). In his ethnographic study of teachers in a rural island community, Thomas (2005) explored the practices of teachers who had previously included an instructional focus on local topics in the years following the enactment of NCLB. Thomas found that the teachers in his study prioritized individual student's needs over meeting state standards. Moreover, teachers expressed awareness of the risks entailed in straying from the tested curriculum to address local topics, and most indicated they would stop teaching local topics if students' standardized test scores were low. Instead of viewing their rural school as particularly positioned to provide a sense of connection to the past, the present, and the future (Halsey, 2005), teachers in Thomas's (2005) study stated that "transmitting local heritage was not theirs or the school's exclusive responsibility" and that local non-profit groups were better equipped to provide students with opportunities to study local topics.

In contrast to the view held by the teachers in Thomas's (2005) study, Lyson (2005) stated that schools not only function as the center of community life but also serve as the primary institutions that maintain and transmit local community values to youth. The loss of schools as transmitters of community knowledge has serious implications for the purpose of education. For example, according to Corbett's (2007) case study of education in a coastal community in Nova Scotia, curriculum disconnected from place communicates the subtle but pervasive message that academic success is useful only in contexts beyond the local community. As Shamah and MacTavish (2009) elaborated in their research brief,

> For young people who enjoy rural living and see themselves living in rural places as adults, this message has important ramifications. If the skills taught in school are disconnected from rural life, then these youth either disengage from school because it feels unimportant or they conclude they can only use the skills they are learning at school in urban places and shift their aspirations toward an urban life. (p. 3)

As such, rural teachers are tasked with not only adhering to the rules placed on them by local, state, and national education agencies, but also preparing their students to be successful in the rural environment and beyond.

Community. According the Rural School and Community Trust (RCST; 2014), the school and the community should actively collaborate to make the local place a good one in which to learn, work, and live. Similarly, Avery (2013) stated, "rural schools are often epicenters of community activities and maintain that community's unique identity and heritage" (p. 29). Moreover, Eckert and Petrone (2013) suggested that being a rural

teacher implies having a real knowledge of and relationships with almost everyone in the community and that some rural teachers view the personal and pedagogical identities of a teacher in a rural context as essentially inseparable. As such, many rural teachers operate in what Zeichner and his colleagues (2015) referred to as a boundary zone. Such a boundary zone "creates the kind of fluctuating and flexible space in which continuing joint work can occur" (Zeichner, 2015, p. 126) and communities can provide a context for learning (RSCT, 2014).

Division of labor. Rural teachers often share the work of teaching and learning with their students (e.g., Chinn & Hana'ike, 2010; White & Reid, 2008). For example, in their case study, Chinn and Hana'ike described a teacher's instructional practices as learner-centered, focusing on relationship building and co-learning by teachers and students. White and Reid (2008) describe a similar blurring of the traditional division of labor between teachers and students in their exploration of teacher preparation for rural Australia. In this program, students introduced themselves and their place to the pre-service teachers, which positioned the students as experts who could "speak confidently and eloquently about what they knew, thus dispelling the urban myths about the limitations and deficiencies of rural schools and schooling" (White and Reid, 2008, p. 7). Both the teacher (Chinn & Hana'ike, 2010) and the teacher candidates (White & Reid, 2008) shared the work of teaching and learning with their students.

In contrast, Martin and Yin (1999) painted a more complicated picture of the division of labor in rural education. In their quantitative investigation of differences between classroom management styles of urban and rural secondary educators in the southwest, Martin and Yin (1999) concluded that rural teachers are more interventionist

than their urban counterparts when it comes to Instructional Management (e.g., "I believe it's important to continuously monitor students' learning behavior during seatwork" [p. 103]). In contrast, rural teachers were less interventionist than urban teachers in terms of People Management (e.g., "Students in my classroom are free to use any materials they wish during the learning process" [p. 103]). Martin and Yin attribute these findings to the contextual factors that differentiate these schools, such as the fact that rural teachers often know students' families outside of school, have taught students' older siblings, or have taught students in multiple classes. These various relationships further add complexity to the ways in which labor is divided between the teacher and students in rural classrooms.

Figure 3 illustrates a theoretical activity system of a classroom in a rural context and indicates what might be present in each node of a rural classroom's activity system based on a synthesis of previous research. However, at present I have only located one naturalistic case study that used activity theory to explore a teacher's practice in a rural context. The current study is intended to contribute to filling that gap in the knowledge base.

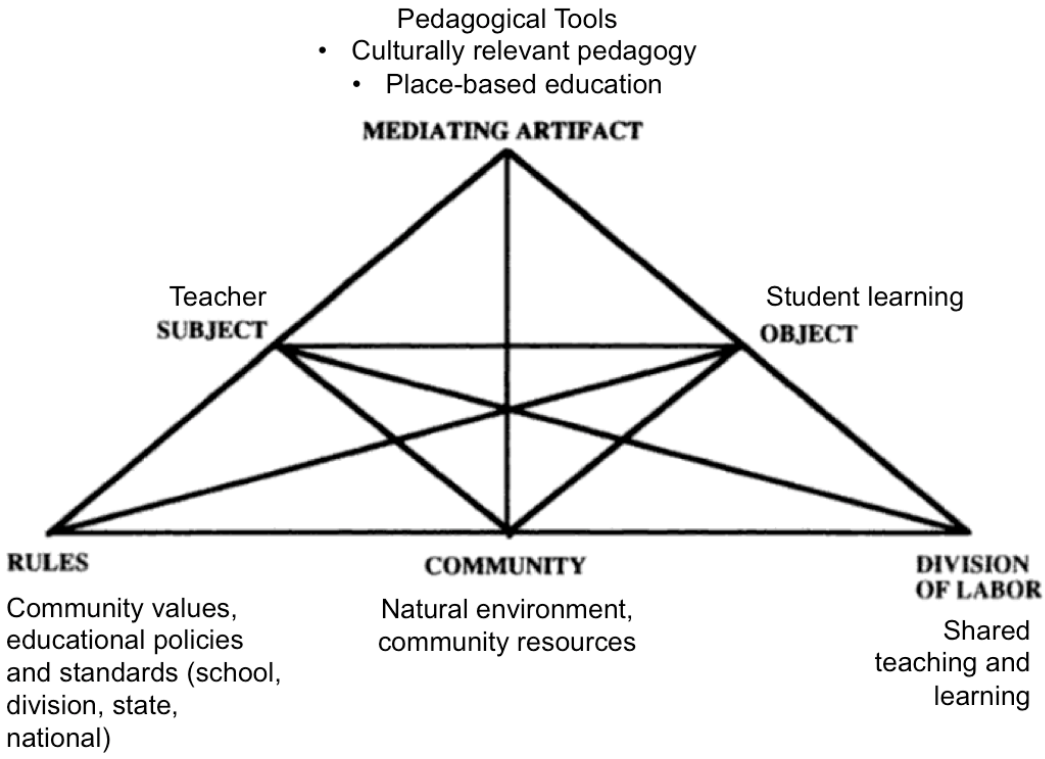


Figure 3. Activity system adapted from Cole & Engeström (1993) including specific elements that might be present within a rural classroom activity system based on prior research.

Conclusion

Although previous research has been conducted to understand rural education in general (e.g., Johnson et al., 2014), and rural teachers in particular (e.g., Burton et al., 2013), the proposed study addresses a gap in the knowledge base of rural education. Because each rural community is unique (Sher, 1978), highly contextualized research is necessary to understand the particular characteristics of teachers in specific rural school divisions. Moreover, few case studies have been conducted to explore rural teachers through the lens of activity theory, and even fewer have been conducted in rural schools in the United States (e.g., Chinn & Hana'ike, 2010).

In 2013, Burton and her colleagues called for research that would "generate more complete and complex storylines about rural educators" (p. 10). Since the publication of the "Storylines" article (Burton et al., 2013) in the *Journal of Research in Rural Education*, five additional articles on rural teachers have been published in that journal. Of those, three focused on rural teachers' professional development (i.e., Barrett, Cowen, Toma, & Troske, 2015; Glover et al., 2016; Hunt-Barron, Tracy, Howell, & Kaminski, 2015). In a fourth article, the authors reported on findings from a qualitative study based on interviews with 24 atheist and agnostic teachers in rural schools across the United States (Howley, Howley, & Dudek, 2016). Only one study, Waller and Barrentine's (2015) study of rural elementary teachers' attempts to make place-based connections to text during reading instruction, focused on teachers' enactment of their role as teachers in a rural context. Though the proposed study, I intend to address this knowledge gap by conducting a multicase study of teachers in one rural school division, using activity theory as the guiding framework for data collection and analysis.

Summary

Through a literature review, I have demonstrated a gap in the knowledge base of rural education, and in particular the practices of rural teachers. In the next chapter, I detail the methodology I used to contribute to addressing the knowledge gap identified by Burton and her colleagues (2013).

Chapter 3: Methodology

Through this qualitative multicase study, I examined the practices of teachers in a particular rural school division. Specifically, this research addressed the questions, How do teachers in a rural school division,

- Conceptualize their role as teachers in a rural context?
- Enact their role as teachers in a rural context?

For an in-depth discussion of the current knowledge base of rural education and the theoretical framework guiding this study, please refer to the previous chapter.

Qualitative Multicase Study Research Design

Given the highly contextual nature of rural communities and the schools within those communities, to answer the research questions I used a qualitative multicase study design, which involved collecting and analyzing data from a couple of cases (Merriam & Tisdell, 2016) in order to understand a particular collection of cases (Stake, 2006). According to Stake (2006), "the power of case study is its attention to the local situation, not in how it represents other cases in general" (p. 8), making case study the ideal research design for developing an in-depth portrait of teaching in a particular rural context.

Additionally, the choice of a qualitative multicase study approach arises out of a constructivist worldview and an intention to establish the meaning of a phenomenon from the views of participants (Creswell, 2014). As Merriam (1998) stated, "the key

philosophical assumption upon which all types of qualitative research are based is the view that reality is constructed by individuals interacting with their social worlds" (p. 22). Through interviews and observations of rural teachers during their engagement in their classroom activity systems, I sought to understand the meaning or knowledge constructed by those teachers within their context. Particularly because research addressing a problem of practice occurs within social, historical, and political contexts, a constructivist approach supports the understanding of multiple, context-bound realities (Merriam & Tisdell, 2016).

According to Stake (2006), "research questions form the kind of conceptual structure suitable for designing and interpreting educational research" (p. 3). Yin (2009) elaborated that case study research questions are asked to explain some present circumstance and ask "how" or "why" some social phenomenon works (p. 4). To answer the research questions, I employed a parallel multicase study design in which all of the cases were selected in advance and were conducted at about the same time (Chmiliar, 2012). Following Stake (2006), the individual cases were analyzed first "to learn about their self-centering, complexity, and situational uniqueness" (p. 6). Once each case was understood in depth, I explored what was similar and different about the cases in order to better understand the collection of cases.

Participants and Setting

The sample of teachers invited to participate in this study was purposively selected from the population of teachers from a rural school division who had participated in a course, Mentoring Novice Teachers, through the teacher education program at the Curry School of Education. Among other things, the course focused on

understanding the Teaching Through Interactions framework (Allen, Pianta, Gregory, Mikami, & Lun, 2011) and coaching pre-service teachers using the domains of the Classroom Assessment Scoring System (e.g., Pianta, La Paro, & Hamre, 2008). All teachers recommended to take the course had to be approved by school building and division leadership and were required to submit an application in which they described their prior mentoring experience, their teaching approach, and what they hoped to learn through the class. Focusing on the purposive sampling of these teacher-leaders allowed me to begin from an asset-based perspective in which the teachers were assumed to be competent and among the best in their school division. Both teachers in the study, furthermore, were awarded the distinction of "Teacher of the Year" at their school. By examining the practices of teachers who are successful and competent in their setting, I was able to learn about their practices, which enabled me to make recommendations for better preparing pre-service teachers for this context.

All of the teachers invited to participate in this study teach in the same school division, Barratt County Public Schools (BCPS; all names are pseudonyms). Selecting teachers from the same school division ensured that the cases shared some link (Goddard, 2012) and allowed for the development of a better understanding of and the ability to theorize about (Chmiliar, 2012) rural education in this particular context. Five teachers were invited to participate to represent a range of elementary grade levels. Two fourth grade teachers at Queen's River Elementary School—Abbie and Ainsley—responded promptly to the invitation, and are the participants in this study (see Table 1 for teachers' demographic information). A third teacher responded after data collection had begun, and

for pragmatic reasons—including the fact that data collection could no longer take place at about the same time—I decided not to include her in this study.

Table 1

Demographic Information for Study Participants

Name	Age	Racial/Ethnic Identity	Years of Teaching Experience	Years in Current Position
Abbie	42	Caucasian	12	4
Ainsley	37	White	10	5

Since the institution of urban-centric locale codes by the National Center for Education Statistics (NCES; n.d.) in 2006, Barratt County Public Schools has been classified as rural, distant. According to the NCES, the rural, distant locale code describes a,

> Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as a rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster. ("New Urban-Centric Locale Codes", para. 11)

As such, Barratt County is farther from an urban area than a rural, fringe county, but closer to an urban area than a county designated as rural, remote. The BCPS has five schools serving over 3,600 students in grades PK-12. At the time of the last census in 2010, Barratt County had a population of just under 25,700 (U.S. Census Bureau, n.d.). Over three-quarters of BCPS students are White, and about one-fifth are Black.

One of the distinguishing features of BCPS is the fact that one school serves all of the students from across the county in each grade band. As such, there is one school for students in pre-Kindergarten through second grade, one school for third and fourth graders, one middle school for fifth through seventh graders, and one high school for eighth through twelfth graders. Prior to the opening of the new high school five years ago, there were two smaller elementary school serving students through second grade in other parts of the county. When the new high school opened, however, all of the primary students were consolidated into one school, third and fourth grade relocated to the old middle school building, and the middle school moved to the old high school building.

Instrumentation

To examine teacher's practices in Barratt County Public Schools, I conducted semi-structured interviews with teachers and observations of those teachers' classrooms, and analyzed their applications to the Mentoring Novice Teachers course and their instructional documents. Drawing on multiple methods of data collection to answer the various research questions (see Table 2) allowed for methodological triangulation and added to the depth and breadth of understanding of rural education in this context (Evers & van Staa, 2012).

Table 2

Primary Data Sources Used to Address Research Questions

Research Question How do teachers in a rural school:	Application	Interview	Observation	Document Analysis
Conceptualize their role as teachers in a rural context?	X	X		
Enact their role as teachers in a rural context?			X	X

Semi-structured interview protocol. I used a semi-structured interview protocol to help answer the first research question, How do teachers in a rural school conceptualize their role as teachers in a rural context? (Appendix A). Kvale (1996) described qualitative interviewing as "a construction site of knowledge" (p. 2) and a semi-structured protocol affords a balance between allowing the participants' perspectives to unfold as the participants view them while also ensuring a degree of systemization necessary for a multicase study (Marshall & Rossman, 2011).

In designing a semi-structured interview protocol, I drew on previous research at the intersection of activity theory (e.g. Cole and Engeström, 1993) and rural education (i.e., Chinn & Hana'ike, 2010). Whereas the interview question "How would you describe your role as a teacher at your school?" is most directly related to the research question, the other questions provided additional insights into each teacher's role and support elaborations that illustrate how they (the subject) connect with other elements of

the activity system. The interview protocol also included questions inspired by Casto and his colleagues' (1981) characteristics of "individuals who are likely to most successfully work within the rural environment" (p. 3). For example, the question "How would you describe your elementary school experience?" was intended to uncover whether participants had previous experience in the rural environment. On the other hand, participants' answers to the question "How would you describe the community in which your school is located?" shed light on their appreciation of rural culture. Additionally, questions such as "How would you describe your elementary school experience?" and "What experiences best prepared you for your current teaching position?" allowed me to build on work in the area of preparation of successful rural teachers (e.g., Azano & Stewart, 2015).

Secondarily, I used the interview to begin to explore the extent to which teachers in this rural school incorporate students' lived experiences into their instruction. In particular, the interview question "What life experiences do your students bring to their education?" and the follow-up question "In what ways do you link school curriculum to your students' lives?" were designed to access participants' views of their students' lived experiences.

Because I created the semi-structured interview protocol specifically for the proposed study, it was important that I validate the measure against how respondents interpret the questions (Desimone & Le Floch, 2004). Prior to conducting interviews with study participants, I conducted cognitive interviews (Desimone & Le Floch, 2004) with peer debriefers, one of whom has taught in rural contexts. Although Desimone and Le Floch (2004) advocated using cognitive interviews to improve survey design, they

nonetheless provide "an excellent methodology for examining the extent to which tools of inquiry validly and reliably capture respondents' experiences" (p. 6). Using a "think-aloud interview" format (Desimone & Le Floch, 2004, p. 6), I captured respondents' thought processes as they talked through their thinking about and their answers to the interview questions. I then used my peers' responses to adjust the semi-structured interview protocol as needed. For example, as a result of the cognitive interview process, I changed a question that originally read "What do you wish you had learned prior to your current teaching position that you know now?" to "What opportunities to learn do you wish you had had prior to your current teaching position?"

Following data collection with Abbie and Ainsley, I also adapted the interview protocol I used with the teachers to interview Erin, the teaching intern who was placed with Ainsley during the fall semester prior to my study (Appendix B). By interviewing Ainsley's intern, I was able to triangulate data sources and clarify my understanding of the ways in which the teachers in this study conceptualize and enact their role. For example, I asked Erin to describe the role that Abbie and Ainsley play in their school. Furthermore, I was able to explore my developing assertions by asking Erin to comment on her observations of their independence and interdependence. Additionally, having recently completed her internship in Barratt County Public Schools, Erin was able to provide a perspective as to what would be most useful for future interns in that setting. Due to the way I used Erin's interview to confirm and add depth to my assertions, I only transcribed selected sections and did not code her interview.

Observation running field notes. To document how teachers in a rural school enact their role as teachers in a rural context, I conducted classroom observations.

Observations entailed the "systematic noting and recording of events, behaviors, and artifacts" (Marshall & Rossman, 2011, p. 139) within each teachers' classroom activity system. During each observation, I recorded field notes—detailed, concrete narrative descriptions of what was observed (Marshall & Rossman, 2011). I used running field notes (Appendix C) to record both observations, such as reconstruction of dialogue and accounts of particular events, and my thoughts and reactions to those observations.

Procedure

Prior to beginning data collection, I submitted a protocol to my university's Institutional Review Board (IRB) for approval. Once the study was approved by IRB, I coordinated with the assistant superintendent of Barratt County Public Schools and followed their approval process for securing permission to conduct research in this school division. Once approved by BCPS, I invited the purposively selected teachers to participate in the study. Both teachers and the intern who agreed to participate in the study signed an informed consent agreement (Appendix D and Appendix E), which outlined the purpose of the study, what the participant would do, the time required, and the risks involved. This study was of minimal risk to participants and the probability and magnitude of harm or discomfort encountered in the research was not greater than ordinarily encountered in daily life. Additionally, the informed consent agreement indicated that participation was voluntary and that participants had the right to withdraw from the study at any point. I assured participants that confidentially of recovered data would be maintained at all times, and identification of participants would not be available during or after the study. At that time, I also asked the participating teachers to complete

a demographic questionnaire (Appendix F), indicating their birth date, gender, and racial and ethnic identity.

Once informed consent was obtained from participants, I began scheduling interviews. All teacher interviews were audio recorded and transcribed verbatim using the Transcribe application. I decided to transcribe the interviews verbatim to preserve the authenticity of the teachers' words and to enable text analysis (Marshall & Rossman, 2011) should their utterances and hesitations reveal information that might be important for further investigation. In order to give the reader a clearer sense of the point being made with each quote (Corden & Sainsbury, 2006), I have removed utterances (e.g., um, uh) and used ellipses to indicate other words that I have removed from the quotes presented in the following chapters. In each case, I have been careful to preserve the original meaning of the speaker's words.

Following the initial semi-structured interview with each participant, I began conducting classroom observations. I observed each teacher's classroom about twice a week over the course of two months for a total of eight observations of each teacher (see Table 3). I conducted observations at various times during the school day in order to capture a variety of classroom activities. During classroom observations, I also collected instructional documents—including photographs of notes written on the whiteboard, slides projected on the Promethean board, and student assignments—for further analysis.

Table 3

Observation Timing

Date	Abbie	Ainsley
February 27	8:15 am	11:00 am
March 1	9:30 am	8:30 am
March 16	11:00 am	9:30 am
March 17	1:20 pm	2:00 pm
March 21	9:35 am	11:00 am
March 24	11:10 am	1:15 pm
March 31	9:30 am	
April 14	12:50 pm	
April 21		9:30 am; 11:00 am

Analysis of collected instructional documents allowed for methodological triangulation—with the observation—in answering the second research question regarding how teachers in a rural school division enact their role as teachers in a rural context. It also allowed me to capture some of the practical tools the teachers chose to support their instruction. Moreover, I accessed the teachers' applications to participate in the Mentoring Novice Teachers course as an additional data source to help answer the first research question, how teachers in a rural school division conceptualize their role as teachers in a rural context.

Data Analysis: Single Cases

According to Stake (2006), "the first objective of a case study is to understand the case" (p. 2). By focusing on and analyzing one case at a time, I worked "vigorously to understand each particular case" (Stake, 2006, p. 1). Only once each case had been explored and understood in depth did I turn my attention to the collection of cases.

Interviews and applications. Following transcription, I coded interviews using both deductive codes based on existing theoretical frameworks, as well as inductive codes that emerged from the data (Marshall & Rossman, 2011). Using both deductive and inductive coding allowed me to better understand the ways in which participants conceptualize their role as teachers in a rural context. I relied on the same deductive and inductive codes to analyze the archived applications to the Mentoring Novice Teachers course. I used the Dedoose application—designed for analyzing qualitative and mixed methods data—to support data management, excerpting, coding, and analysis.

Coding the data. Drawing on the activity theory (e.g. Cole & Engeström, 1993) literature, I anticipated several themes that were likely to emerge from the interview data. With regards to activity theory, I coded interviews for statements relating to subject, object, mediating artifact, rules, community, and division of labor. Coding using this theoretical framework allowed me to triangulate the interview data with the observation and document data, enriching the completeness of the findings and leading to a more in-depth understanding (Evers & van Staa, 2012).

Additionally, I coded interview transcripts for the characteristics of "individuals who are likely to most successfully work in the rural environment" (Casto et al., 1981, p. 3), including previous experience in a rural environment, appreciation of rural culture,

and rural recreational interests. Furthermore I coded interview transcripts for evidence of culturally relevant pedagogy and place-based education. Appendix G shows the deductive, theory-generated codes and an example quote illustrating each code.

Writing analytic memos. As data accumulated, I wrote about the patterns or themes that emerged (Marshall & Rossman, 2011). By writing notes, reflective memos, thoughts, and insights, I was able to identify emergent themes that I had not planned for in the original coding scheme. For instance, as a result of my memoing, I added codes for student autonomy, prompting questions, and relationships as I noted instances of each in the collected data and interpreted what those instances had in common. Appendix H shows the inductive, emergent codes and an example quote illustrating each code.

Credibility. I used several strategies to safeguard the accuracy of findings generated from analysis of the interview data. I was not only able to triangulate the interview data by comparing it with the observation and document data, but I was also able to compare responses across interview participants. I also used member checking by sharing my descriptions and themes with participants to determine whether the participants felt that my interpretations were accurate (Creswell, 2014). Additionally, I used peer debriefing to enhance the accuracy of my interpretations and ensure that my findings resonateed with a broader audience than just myself (Creswell, 2014). For example, different colleagues read the interview transcript and a few observation field notes for each participant and shared their general impressions with me. We then engaged in a conversation to explore the ways in which our interpretations aligned based on the data.

Observations and instructional documents. After recording and cleaning observation field notes, I coded them using both deductive, theory-generated and inductive, emergent codes (Marshall & Rossman, 2011) in order to capture how participants enact their role as teachers in a rural context. I used the same deductive and inductive codes to analyze the instructional documents. As with the interview data, I used the Dedoose application to support data management, excerpting, coding, and analysis.

Coding the data. Drawing on activity theory (e.g. Cole & Engström, 1993), I anticipated several likely themes to emerge from the observation field notes and the collected instructional documents. As with the interview transcripts and applications, I coded field notes and instructional documents for evidence relating to subject, object, mediating artifact, rules, community, and division of labor within the activity system. Additionally, I coded observation field and instructional documents notes for evidence of culturally relevant pedagogy and place-based education. Coding using the framework of activity theory allowed me to triangulate the observation and instructional document data with the interview data, enriching the completeness of the findings and leading to a more in-depth understanding (Evers & van Staa, 2012).

Writing analytic memos. As additional data accumulated, I wrote about the patterns or themes that seemed to be emerging (Marshall & Rossman, 2011). By writing notes, reflective memos, thoughts, and insights, I was able to identify emergent themes that I had not planned for in the original coding scheme, such as student autonomy, prompting questions, and relationships.

Credibility. I used several strategies to safeguard the accuracy of findings generated from analysis of the observation and document data. I used member checking

by sharing my descriptions and themes with participants to determine whether the participants felt that my interpretations were accurate (Creswell, 2014). In addition, peer debriefing enhanced the accuracy of my interpretations and ensured that my findings resonated with a broader audience than just myself (Creswell, 2014).

Data Analysis: Multicase

According to Marshall and Rossman (2011), "identifying salient themes, recurring ideas or language, and patterns of belief that link people and settings together is the most intellectually challenging phase of data analysis" (p. 214). To analyze the collection of cases, I relied on Miles and Huberman's (1994) analytic strategy, including the use of matrices and other forms of graphic representation. Additionally, I used Stake's (2006) matrix for generating theme-based assertions from case findings as a way to develop assertions that emphasized the findings from the individual cases. Through visual representations, I was able to explore connections between cases and uncover patterns, themes, and categories (Marshall & Rossman, 2011), as well as counter-narratives (e.g. Burton et al., 2013).

To facilitate understanding of the collective cases, I used multiple forms of triangulation: data source triangulation, methodological triangulation, data type triangulation, and analysis triangulation. The purpose of triangulation was not to pursue an objective truth, but to add to the depth and breadth of understanding (Evers & van Staa, 2012) of teachers' practices in this particular context. Instead of using it as a means of achieving convergent validity, the objective was crystallization, which "provides us with a deepened, complex, and thoroughly partial understanding of the topic. Paradoxically, we know more and doubt what we know. Ingeniously, we know there is

always more to know" (Richardson & St. Pierre, 2005, p. 963). As such, self-critique and self-reflexivity on my part were crucial as the participants and I worked together to construct situated knowledge and co-construct an understanding of the world (Marshall & Rossman, 2011).

The Researcher's Role

I grew up and went to school in a rural area quite similar to Barratt County. Although I have not taught in a rural elementary school, my experiences as an elementary classroom teacher tend to color my observations of elementary classrooms. I taught in a progressive school that prides itself on its student-centered philosophy and the fact that all members—staff, students, and parents—have equal participation and voice in the school's democratic process. We had "family groups" instead of classes, my students called me by my first name, and we were all encouraged to be lifelong learners. This was an ideal environment for me as a teacher, and serves as a lens through which I view all other schools.

Furthermore, I conducted an action research self-study of my use of place-based education to integrate the curriculum for my master's research and incorporated place-based practices into my instruction as a fourth and fifth grade teacher. Over the past few years, I have contributed to oral history interviewing, ethnographic research, and curriculum development intended to give voice to rural residents and highlight the funds of knowledge present in rural communities. Due to my experiences in and empathy for rural contexts, I endeavored to practice disciplined subjectivity in my data collection, analysis, and interpretation. As mentioned previously, triangulation of data collection

strategies and sources, member checking, and peer debriefing all helped to enhance the accuracy of the account.

It also bears noting that I have a previous relationship with the teachers I invited to participate in the proposed study. I was a teaching assistant for the Mentoring Novice Teachers course from which the sample of participants was purposively selected. Whereas such a previous relationship could certainly contribute to researcher bias, "one could argue that the success of qualitative studies depends primarily on the interpersonal skills of the researcher…. This caveat is often couched as building trust" (Marshall & Rossman, 2011, p. 118). To continue to build trust with participants, I drew on my awareness of the politics of schools in general—and rural schools in particular—to maintain good relations, respect norms of reciprocity, and sensitively consider ethical issues (Marshall & Rossman, 2011).

Summary

I used a qualitative multicase study to answer the research questions: How do teachers in a rural school division,

- Conceptualize their role as teachers in a rural context?
- Enact their role as teachers in a rural context?

To answer these questions, I collected data from multiple sources and analyzed that data using both deductive and inductive codes. In the next chapter, I share the findings from each individual case followed by my multicase assertions.

Chapter 4: Findings and Assertions

I embarked on this qualitative multicase study to examine the practices of teacher-leaders in a particular rural school division in which the teacher education program at the Curry School of Education places pre-service teachers for their teaching internship. Following the recommendation of Burton and her colleagues (2013) to conduct "qualitative research that explores the stories of teachers in rural areas, their successes, and their needs" (p. 9), I collected data from interviews, observations, and documents to better understand the complex nature of rural teaching. An analysis of the data gathered through these methods allowed me to address the questions, How do teachers in a rural school division,

- Conceptualize their role as teachers in a rural context?
- Enact their role as teachers in a rural context?

In order to answer these research questions, I first present findings from Abbie's case, in which I document how Abbie conceptualizes and enacts a shared role with her students and colleagues. I then present findings from Ainsley's case, in which I document how Ainsley conceptualizes and enacts a leadership role with her students and colleagues. Each teacher's case is presented within the context of activity theory. I first present the *subject*, or teacher, and detail the ways in which she demonstrates the characteristics of individuals who are likely to be successful in the rural environment (Casto et al., 1981). Second, I present each teacher's *object*, or her goal for her students.

Next, I present the *mediating artifacts* or pedagogical tools each teacher uses to achieve the object. Additionally, I detail the *rules* under which and the *community* within which they enact their role. Finally, I present the *division of labor*, or the ways in which the work of teaching and learning is divided in each teacher's classroom. To conclude each case's findings, I synthesize the various elements of the activity system to answer the research questions.

Following presentation of the individual case findings, I present the multicase assertions based on cross-case analysis. The case findings and multicase assertions represent a counter-narrative to the "rural problem" storylines presented by Burton and her colleagues (2013). Instead of being professionally isolated or resistant to change, I assert that the rural teachers in this study are professionally independent and interdependent.

Abbie: A Shared Role

Students are scattered around the room—sprawled on the floor, perched on stools, and sitting in chairs tucked under desks. As seemingly random as the seating arrangement are the students' and teacher's socks—striped, knee-high, and mismatched. As I take my usual seat in the back of the room, the teacher pauses her instruction to share with me that they are wearing crazy socks in honor of World Down Syndrome Day.

"Even though they're all different," she tells me, "they're still socks. This is what happens when your teacher has a son with Down syndrome!"

The teacher returns her attention to the probability problem she had drawn on the board: four blue marbles, six green marbles, and three yellow marbles. She instructs the students to come up with both the fraction and the words to describe the probability of

picking a green marble. After a few minutes to think through the problem on their own, students volunteer that the probability is 6/13.

"So is it impossible to pick a green marble?" the teacher asks.

"No!" chorus the students.

"Equally likely?" asks the teacher.

"No!" the students intone.

"Certain?"

"No!" the students respond again.

The teacher questions, "What about unlikely?"

There's a noncommittal rumble from the students. The teacher writes a question mark on the continuum she's drawn on the board halfway between "Impossible" and "Equally Likely." Several students express that they think that it is likely they would draw a green marble from the bunch.

"Okay, so there are six green and seven not green marbles," the teacher says, noting those numbers on the board, "and we're torn between likely and unlikely that we're going to get green. Talk to your partner. What do you think now that I've put those numbers up there?"

As students begin to talk with their partners, the teacher makes her way to the back of the classroom where one boy sits without a partner. "What are you thinking?" she asks. He tells her he still thinks that drawing a green marble is likely.

The teacher pauses the partner talk and says, "This is the hardest, most craziest part about probability." She invites a student to explain why he thinks it is likely.

"Because…" he trails off.

"Hmmm, now he's thinking about it."

Another student offers, "I think it's not likely because there's more not green than green."

"I think it's likely because there are two other colors," responds another student.

"It makes sense," says the teacher. "If the question was, 'What color am I most likely to draw?' then the answer would be green. But the chance to draw green is less likely than getting another color. That's so common. That's why you all missed this question. You all break it down. But that's not the question. It's either going to be green or not green. You do have a better chance of drawing green over yellow or blue. So the answer is actually unlikely."

A few students hiss, "Yessss!"

"This is where I'm going to leave it today. We'll pick it back up tomorrow."

The boy in the back of the room is still puzzling through the probability problem. He raises his hand. "What would the question be if the answer was likely?" he asks.

The teacher pauses and thinks about how she would word the question. She invites me to join the discussion, and together we come up with the question, What color are you most likely to draw?

"Talk to your partner," the teacher instructs. "See if you can come up with a question where the answer is that you're likely with green."

As students begin to talk, the teacher tells the boy who asked the question, "You've stumped me. That is a very good question."

Students begin volunteering questions. The answer to the first one is still unlikely. Another student contributes something similar to what the teacher and I came up with.

"There's your homework," the teacher says. "Come up with a question with green as likely using this data. We'll come back to this tomorrow."

The above vignette illustrates a fairly typical day in Abbie's fourth grade classroom at Queen's River Elementary School. From the outset of this classroom interaction, relationships are at the forefront, as evidenced by the fact that the members of the classroom community were unified in celebrating World Down Syndrome Day. But in little ways, too, Abbie facilitated interdependence between herself and her students and between the students. She made sure to check in with the boy who had no partner and toward the end of the lesson, after he had publicly expressed his confusion, she let him know that he had asked a good question. She also provided students with opportunities for purposeful peer interaction, both through whole-class and partner discussion.

In addition to facilitating interdependence between herself and her students, Abbie supported students' autonomy and independence. Even when Abbie was ready to move on from math for the day, a student was comfortable enough to not only express his confusion in front of his peers but also suggest a deviation from the teacher's plan. Furthermore, Abbie honored that students' question by not only puzzling through it herself, but also by posing the question back to the students. In this classroom snapshot, the seemingly contradictory characteristics of independence and interdependence instead seem to be interrelated, one supporting the other.

As this vignette illustrates, both independence and interdependence are present in this classroom activity system. In the sections that follow, I detail the elements of the activity system of this classroom, highlighting the ways that independence and

interdependence manifest within the subject, object, mediating artifact, rules, community, and division of labor nodes of the activity system.

Subject. Abbie is a 42-year-old woman who self-identifies as Caucasian. She has been a teacher for 12 years and has taught fourth grade at Queen's River Elementary School for four years. Prior to her position at Queen's River Elementary, she taught in two other school divisions and then stayed home with her son for several years until he was in first grade.

In their 1981 Rural Network Monograph, *Making it Work in Rural Communities*, Casto and his colleagues outlined characteristics of "individuals who are likely to most successfully work within the rural environment" (p. 3), including previous experience in a rural environment, appreciation of rural culture, professional independence, a personal support system, and rural recreational interests. Abbie demonstrates each of these characteristics to varying degrees.

Previous experience in a rural environment. Much of Abbie's life has been spent in rural environments. She grew up in a rural area outside of Knoxville, Tennessee. In our initial interview, she told me,

> So I grew up in Knoxville, so Knox County, Tennessee, and more on the east side of Knoxville, because Knoxville's such a wide, big area, so west Knoxville is a lot—not so rural area. [laughs] So I grew up more in east Knoxville.

When asked to describe her elementary school experience, Abbie shared,

> So I actually did grow up in a rural kind of setting. And honestly it was a predominantly White school, just because of where we were located. It was very positive, though. Like I still have contact with my elementary school teachers. My

> mom still lives—we lived very close to the school. Very specific things I remember about my elementary school teachers, and I was not that perfect straight A, non-troubled kid…. But overall, I mean it was a very positive—like I had great teachers, very positive teachers, very good experiences. And like I said, it was very similar kinda to this school, like that kind of population to a certain degree. This one's a little different but not—not a whole lot.

In this interview excerpt, Abbie described several features of her elementary school experience. She characterized her school as "rural" and "predominantly White," clarifying that the demographics of the school were a result of its location. She also explained that, regardless of these classifications, her experience at that school was "positive" and that she had "great teachers." Furthermore, without prompting, Abbie compared her elementary school to the school in which she currently teaches. She stated that the schools were "very similar," the predominant difference being the diversity of the student population at the school where she currently teaches, a feature that will be explored more in depth within the community aspect of the activity system.

In addition to attending school in the Knoxville area, Abbie also had her first teaching job there. Abbie's teaching experiences, however, have not all been in rural contexts. Before Queen's River, Abbie taught at a school in Newport News, Virginia, that was "extremely different":

> We were actually a magnet school because of the population of where the school lived was on the James River so we had doctors and those kind of kids there, so it wasn't as diverse as it needed to be so they made the school into a magnet school so that we could draw kids in from the other areas. And so those kids are bussed

> in so they applied to come to school there … and so we had kids from all over Newport News area coming to our school. But it was very small. We only had three teachers in each grade level, which is—which is really, really small.

Unlike rural Barratt County, Newport News is classified as a midsize city (Virginia Department of Education, 2009). Abbie's school in Newport News was also much smaller than Queen's River, where there are twelve teachers in each grade level. However, although Queen's River is not considered a magnet school, third and fourth grade students are bussed from all over Barratt County to attend the school. Even though teaching in Newport News did not provide Abbie with previous work experience in a sparsely populated area, it did provide her with experience teaching students from different communities who come together to attend one school.

Appreciation of rural culture. In her interview and other conversations, Abbie demonstrated a deep appreciation of rural culture. During an informal conversation while students were having indoor recess, she talked fondly of visiting a school that she characterized as more rural than Queen's River and giving students Christmas gifts and donating dollar paperback books from Target for a classroom library. She said some older students would ask if they could pick a gift that was intended for a younger child so that they could give a gift to their younger sibling, even though that may be the only gift they get for Christmas. She spoke of how respectful the students were and how grateful the teacher was that she could provide her students with classic literature.

Abbie told me that she would teach in a more rural school if she could but that it was best for her family to live close to a city. In her interview she said,

> So, my husband works in an even more rural area … and so we decided to live in the middle, so Barratt is in the middle between [another county] and Charlottesville, so having a child with special needs, we wanted access to UVA and that kind of stuff, but not living all the way in [another county]. So this was a great place to live and I also choose to work where I live.

For Abbie, teaching in a "rural, distant" (NCES, n.d.) school division allows her to work with a rural population of students while also having access to the amenities afforded by a small city.

In her interview and other conversations, Abbie spoke of her desire to work and live in the same area:

> I love going to the grocery store and seeing the kids at the store. I love going to the pool in the summer and having that interaction with my students. I love coming into school at the new year and my students saying, "I saw you at the pool this summer," you know, that kind of thing. That interaction doesn't bother me and it actually—I love it…. I didn't look outside of this community where I live, so living here made that choice for me because that's what I like is to work in the same community that I live.

These outside-of-school interactions that Abbie described in her interview represent her appreciation of living in the community in which she teaches, rather than her appreciation of rural culture. She clarified that seeing students at the pool or the grocery store does not really give her insight into the rural aspect of some of her students' lives. Due to the size of the county and the smaller communities within it, she would only see a certain subset of her students at the pool—the ones that live in the same community she does. Abbie

characterized that community as less rural than other parts of the county due to the fact that the parents in those families tend to commute into the city for work.

Abbie demonstrates both an appreciation of community culture as well as an appreciation of rural culture. She speaks with passion and reverence of the rural communities in which she has lived, worked, and volunteered. She appreciates being a part of the community in which she teaches, but she does not characterize it as being as rural as other places she has experienced.

Professional independence. Of all the characteristics of individuals who are likely to most successfully work within the rural environment (Casto et al., 1981), Abbie most notably embodies the quality of professional independence, including self-sufficiency and the ability to function independently on the job. In her teaching career, Abbie has served as a math lead teacher, a social studies lead teacher, and a mentor teacher for both early career teachers in her school division and teacher candidates from two different teacher preparation programs. In her application to participate in the Mentoring Novice Teachers course, Abbie wrote,

> I enjoy helping other teachers as well as sharing ideas and working with other educators to improve those ideas. I have a fair amount of experience working with both experienced and novice teachers. That experience has helped make me into the teacher that I am today…. I believe that I have valuable teaching strategies and methods that could be useful to a beginning teachers [*sic*] and a personality that encourages discovery.

As this quote illustrates, Abbie has served as a teacher-leader and provided guidance to teachers as they begin their careers, both of which require a degree of self-sufficiency and independence.

Furthermore, Abbie appreciates the fact that Queen's River provides a working environment in which her professional independence is valued. According to Abbie, the teachers at Queen's River,

> have a lot of input. So pacing: how do you want to teach? What do you want to teach? What order do you want? How long do you need to teach each subject? Creating unit tests. It's very much teacher-led. Now, all the teachers have the same test, but we had input in creating that test. So, I would, as a whole, describe as very—I have lots of input. I'm able to input a lot. Which also having 12 teachers—so six of us teach math and science—it's a lot of teachers with different viewpoints. So sometimes it can cause [laughter] it can cause a little—a little bit of stress [modulates voice to indicate stress] … about making decisions, and so sometimes it's hard because you want the higher up to just step in say, "Okay, this is what you're gonna do, now do it." But it's nice having that input and that kind of thing. But we're also left alone. Like this is my classroom, and I get to do with it as I so choose, as long as I'm being successful within the parameters that are set up for us.

Whereas Abbie values the amount of input that teachers have at her school, she also understands the challenges presented by including so many diverse voices in the decision-making process.

The final line of the above excerpt—"this is my classroom, and I get to do with it as I so choose, as long as I'm being successful within the parameters that are set up for us"—reveals a lot about the ways in which Abbie exercises her professional independence at the classroom level. She recognizes that there are requirements placed on her by local, state, and national education agencies and that she has an obligation to meet those requirements. Nevertheless, she does not feel confined by those requirements and is able to act self-sufficiently and independently to meet those requirements in a manner of her choosing, as I will explore in more depth with regard to the rules facet of the activity system. In an informal conversation, Abbie shared with me that she knows that her job is to help her students master the Virginia Standards of Learning (SOLs) but as long as she does that, she can "do her own thing." For example, during my time in her classroom, Abbie became an "ambassador" for a marble run company and secured five sets of marble maze runs for her classroom, acquired additional beanbag seats for her students to use, and purchased owl pellets for dissection in a science lab. Furthermore, when I asked Abbie about her interests outside of school, she told me,

> I love planning, so I will spend hours looking up stuff…. I mean, I love to check out Pinterest and try to find, like, fun things to do. While at the same time, like, I love cooking, I love baking. But I really do love planning…. Like, we're starting the review thing, so what are things that I can do that are fun that are not just worksheets that my kids can do to review these different skills and that kind of thing? So I spend a lot of my free time doing that … but I think my kids benefit from the fact that I'm a geek and I try to look up stuff for them to do.

Even during her personal time, Abbie is independently thinking about ways to meet her students' needs and improve her instruction in the classroom.

Personal support system. Abbie's professional independence makes her self-sufficient and able to function independently on the job (Casto et al., 1981), but she also has a personal support system consisting of family and coworkers. As mentioned in the section on appreciation of rural culture, Abbie's family provides her with a personal support system; she lives in this particular area and teaches in this particular school division because of them. However, much of this support is provided by her co-worker, Ainsley.

Abbie and Ainsley, the other teacher in this study, have a strong friendship and a strong teaching relationship. Abbie told me that she and Ainsley used to be partner teachers,

> but then whenever we switched to this whole model of one teacher teaches math and science and the other teaches literacy and Virginia studies, we both wanted to teach math and science. So we stopped partnering and picked up new partners who were literacy/Virginia studies people.

Their supportive relationship intersects with their professional independence and their pursuit of continuous learning. For example, they attended the Mentoring Novice Teachers course together, presented at the Virginia Children's Engineering Convention together, and implemented a new pedagogical tool called Scrum together.

Abbie's appreciation for this supportive relationship is evident in the advice she would impart to a new teacher at her school:

> Find one teacher that you can—that you know that you can absolutely trust and count on. You don't need the advice of 50 teachers, you need the help of one teacher that you learned the first [day] back to school … that you're like, "They're good." You need to find that one teacher, and talk to them, say, "Hey, I need one teacher who I can come to and count on to ask questions, run things by," that kind of thing. That will save you. That would be big.

For Abbie, Ainsley serves as that "one teacher" she can "absolutely trust and count on." The strong, interdependent relationship between these teachers seems to facilitate, rather than hinder, their ability to be professionally independent.

Rural recreational interests. Among Abbie's recreational interests are scrapbooking, cooking and baking, and spending time with her family. Her family enjoys being outdoors and spending time at the pool in the summer. Whereas Abbie has recreational interests, they are not constrained to a rural area. Even her son's participation in 4-H is not a uniquely rural activity, as over half of 4-H'ers live in urban and suburban communities (4-H, 2017). Abbie is able to pursue her recreational interests in the rural environment—even though they are not inherent to a rural environment—and has access to leisure time activities that "can serve as beneficial 'time outs' from job stress" (Casto et al., 1981, p. 4).

Abbie possesses several characteristics—most notably professional independence and a personal support system—that allow her to be successful teaching in a rural environment. These qualities that describe Abbie as the subject of the activity system relate to the object, or goals she has for her students, and the mediating artifacts she uses to achieve those goals.

Object. Within activity theory, the object is the goal of the activity system. One of Abbie's primary goals is to meet the needs of her students. In her application to the Mentoring Novice Teachers course she wrote,

> I believe that students have different needs when they enter my classroom. It is my job to meet those differing needs as best as I can. I recognize that some children have emotional needs that need to be meet [*sic*] before we can really work on the academic needs. At the beginning of the year I do my best to find out my students [*sic*] interests as well as their family dynamics. I try to make sure my students know that they are cared for and feel safe. In addition to different emotional needs, students have different academic needs.

In both the interview and in my observations of her interactions with students, Abbie demonstrated her commitment to meeting students' needs—be they emotional needs or academic needs. How she met those needs, however, varied based on the context.

Consistent with the ways in which relationship building has been previously shown to be important for rural teachers, Abbie discussed meeting students' emotional needs by getting to know her students and building relationships based on mutual respect. In her interview Abbie said,

> So I try to set up my classroom in a sense of very much mutual respect and that works well for me. And I hope you see that. I hope you see that. I hope you see that, and I guess I wanted to tell you that so if you see me talking to kids, like, I—I'm just—I just don't beat around the bush with them. I'm not mean to them, but I'm very just direct. And, and like I said, they respond very well to that. And, yeah, it works well. That's how I keep them—mutual respect. And they know that

> if they—like Jacob, I'm like, oh man, high five. I love it. I've got the old Jacob, and this huge smile on his face because he wants to please me, because he knows that, that we have this mutual respect for each other, and I'm gonna be tough on him, but he also knows I'm tough on him because I care about him. And he knows that, because I set that up at the beginning of the year. So hopefully that's something that you'll see kinda come across with them.

Abbie stressed that her frank demeanor with her students comes from a place of caring and has developed over the course of the year. My observations occurred in the later half of the school year, well after she had laid the foundation for her classroom environment of mutual respect. She wanted me to understand both the purpose and the intention behind the way in which she interacts with students and the role that plays in meeting her students' emotional needs. In addition to viewing relationship building as critical for her own practice, Abbie said that her primary advice for a new teacher at Queen's River Elementary would be to "get to know your kids well… that has to be number one. You have to know your kids."

One way that Abbie meets students' academic needs is through the use of rotations. In her application, she wrote,

> I try to meet Academic needs by understanding their different learning styles as well as learning levels. When possible, I like to work with my students in small groups by utilizing a rotation system. This allows me to work with students on a more individual basis, giving me time to remediate and/or accelerate student learning. Students who have already mastered the current skill begin to work on advanced level work or problem solving skills. Those students who need

> additional help get it in a small group setting with peers who may be having the same problem. My small groups are fluid and are created by formative and summative assessments given throughout the unit. When completing rotations, students are given opportunities to work together, talk with each other, share ideas, and practice current and past skills.

In two of my eight observations, I saw students completing rotations in which they worked on various math activities—some that every student completed and others that only certain groups completed. During one observation in particular, Abbie engaged groups of students in different activities—from converting inches to feet to writing algebraic expressions with unknowns—when they met with her.

At Queen's River Elementary, all of the students identified as gifted are placed on one team, along with other students who may be performing on, above, or below grade level. As a teacher on the gifted team, Abbie teaches students with a range of academic needs. In her interview, she reported that her teacher education program prepared her for the "middle of the road kid," but she learned a lot from her own son about meeting the needs of students who struggle academically and did research to learn strategies for gifted students:

> First of all, I'm a researcher, like I—so coming in, probably two, three years ago, Ainsley and I became—and our community became the gifted community. So, not that we only have gifted students because we by far don't, but all the gifted students were placed into our community, which is a very new role for me. And how to meet the needs of those students. So, I had to do a lot of research, like what does that mean? How do you teach those kids and how does that—how do

> you differentiate their education with a typical child, et cetera, et cetera? I definitely—and I don't know that you can hit all those—but I definitely was not prepared in that area at all. And to be real honest, before I had my own child, I wasn't very prepared to teach kids with special needs. Like, I feel like, for the most part, education in general teaches you to serve like the middle of the road kid. Like, okay, if your classroom was a bunch of average kids, you're good to go, but you know you take your one, you know, one or two class for sped. You don't take really any—I mean at least I didn't for—for gifted children or high-achieving students. So that was definitely, like, the spectrums—the opposite spectrums of those were a little overwhelming and daunting.

Abbie sees her use of rotations and hands on learning as a way to meet her students' diverse academic needs, and I detail how she uses pedagogical tools in this way in more depth in the next section.

On some occasions, Abbie's dual goals of meeting students' academic and emotional needs intertwine. During an observation, a student came in from the hallway to report that one of his classmates was cheating. Abbie called the accused boy into the room and quietly asked him who he would hurt if he cheats and told him that she will know if he cheated based on how he performs when he is working by himself. After he returned sullenly to his group, Abbie followed him and asked him if he "got in trouble." In this example, Abbie demonstrated sensitivity to the student's emotional needs, particularly by checking in with the accused boy after the confrontation to make sure that he understood that he was not in trouble. She also demonstrated sensitivity to his academic needs by explaining that it is important that he learn that material, not simply

complete the assignment by copying from a friend. In another example, a student who was having a tough day—and was missing notes in her notebook—stayed at a station more than one rotation to work with Abbie:

> Teacher directs student who joined the group late to look at the anchor chart on the board and then to get her math notebook. Teacher notices she didn't write the conversion in her notebook and directs her to copy down the weight conversion in her notebook…. Teacher, to the girl who arrived late, "That's why [I tell] you to put things in order, so they're together … so we can easily find it."

At the end of this exchange, Abbie asked the girl if she wanted to stay at the back table for the next rotation, too, and moved the anchor chart closer to the station for her to copy the conversions.

From an activity theory perspective, Abbie achieves her object through the mediating artifact—the pedagogical tools she uses to meet students' emotional and academic needs. Spanning the object and mediating artifact nodes of Abbie's classroom activity system is an element of student autonomy. As evidenced by the importance Abbie seems to place on recording notes to refer to when working independently, Abbie facilitates opportunities for students to be autonomous and self-sufficient. There is a positive feedback between the ways in which she fosters student autonomy through pedagogical tools that teach independence and her use of pedagogical tools that require a degree of independence. I explore these pedagogical tools in depth in the section that follows.

Mediating Artifact. Abbie uses pedagogical tools in order to achieve the object of meeting students' needs. Some of those tools are conceptual—the "principles,

frameworks, and ideas about teaching, learning, and content acquisition that teachers use as heuristics to guide decisions about teaching and learning" (Grossman et al., 1999, p. 14)—and some of those tools are practical—the "classroom practices, strategies, and resources that do not serve as broad conceptions to guide an array of decisions but, instead, have more local and immediate utility" (Grossman et al., 1999, p. 14). These pedagogical tools are the means by which she is able to realize her conceptions of teaching and learning—that it should be both independent and interdependent.

Given the nature of the activity system—that the elements are interconnected and interrelated—it makes sense that the edges between the object and the mediating artifact are blurry. In fact, Abbie related her teaching approach to the object in her application, "I use hands on learning as often as possible because I believe that if [students] 'experience' the skill they have a better chance of understanding it." In the rubric for a food web project, for example, Abbie outlined what she wanted students to do and provided them with criteria for success (see Figure 4). The rubric for the food web project also illustrates a way in which Abbie facilitates student autonomy: by stating the procedure and expectations for the project and leaving the execution of those expectations to the students.

Food Web Project

Procedure:

1. Select a specific ecosystem in which you would like to create a food web.

2. Label each organism with its name, and whether it is a **producer, consumer, or decomposer.** Each consumer must be labeled as an herbivore, carnivore, or omnivore. If you can't identify the organism as one of the above because you don't know- Look it up! **Your Food Web Should Have Pictures!!**

3. Remember, a food web contains **many food chains**; make sure your consumers have a variety of food to eat.

4. Begin constructing your food web **by placing the producers at the bottom** and then adding 1st, 2nd and 3rd level consumers.

5. You must include at **least 5 food chains**, each consisted of a producer, a primary consumer, and a secondary consumer. They must be realistic feeding relationships! **You shouldn't have a shark eating a bear- THAT is NOT REALISTIC.**

6. Draw all the connections within your web neatly with arrow pointing to where the energy is going. In other words, the arrow should point towards who is doing the eating.

Making A Poster: Food Web Project- Staple to back of Food Web

Student Name _____ Hr. _____

CATEGORY	4	3	2	1
Required Elements	The poster includes all required elements as well as additional information, 5 or more food chains are displayed on the food web.	All required elements are included on the poster. 4 food chains are displayed on the food web.	All but 1 of the required elements are included on the poster. 3 food chains are displayed on the food web.	Several required elements are missing. 2 or less food chains are displayed on the food web.
Attractiveness	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout and neatness.	The poster is acceptable attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed. It is not attractive.
Use of Class Time	Used time well during each class period. Focused on getting the project done. Never distracted others.	Used time well during each class period. Usually focused on getting the project done but occasionally distracted others.	Used some of the time well during each class period. There was some focus on getting the project done but occasionally distracted others.	Did not use class time to focus on the project AND/OR often distracted others.
Labels	All organisms are labeled as	All organisms are labeled as	All organisms are labeled as	Few to no labels were present on

Figure 4. Procedures and portion of rubric provided to students detailing a food web project.

In her interview, Abbie discussed how she believes she simultaneously meets students' needs and supports student autonomy by creating an active classroom in which multiple things are happening at any one time:

> It takes somebody who's like, okay, oh my gosh, I've gotta figure out how this is going to work and how am I gonna—you know, what does the classroom look like whenever you do that, because I have 50 things going on here at one time, and people are like, "How do you do that?" And I'm like, "I don't know how I do it." [laughter] I'm like, I don't exactly know, but it's just what has to happen to make sure everybody's getting what they need. So I definitely feel like that's one area, you know, you hit the middle of the road, but now what happens in the reality of a classroom when you have kids that are way high, kids that are average, and kids that are struggling? How do you distribute your time and your resources and your energy to make that work?

Abbie is able to have "50 things" happening in her room at any one time because she has distributed her time and resources in such a way that her role is shared between herself and her students. For example, in the interview, Abbie told me that she supports students—even if she cannot provide a lot of one-on-one time—by giving them opportunities to work together: "So even though it's not me and I'm spread out between 25 kids per class, you can buddy them up with somebody so they feel important, they feel like they're helping somebody else, they feel like they're getting information." Abbie also referred to her use of purposeful peer interactions in her application:

> I also use the motto, "If you can talk about it you know it. If you can't talk about it you don't know it." The more students are given chances to talk about what

> they are leaning the better they grasp it. One way I get students talking about what they are learning is through STEM group projects…. The knowledge the students share during these projects is amazing and valuable. It gives me time to talk with groups and help them work on problem solving skills.

Through the use of these group projects, Abbie provides her students with opportunities to talk to one another and fosters a sense of interdependence. Over the course of my time in Abbie's classroom, I observed her shift from STEM group projects to using a new format called Scrum. This pedagogical change represents a shift in Abbie's use of pedagogical tools to those that support even greater levels of independence and interdependence.

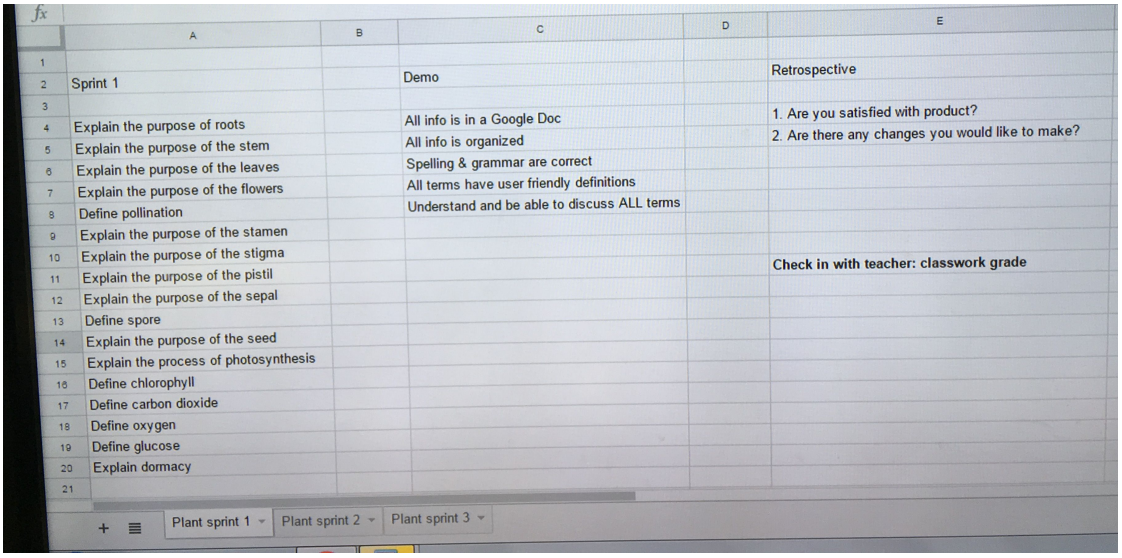
Scrum, developed by information technology businesses as a way to manage seemingly uncontrollable and complex IT projects, provides a detailed method for people to work together (eduScrum, 2012). The Dutch company eduScrum defines Scrum's adaptation for an educational context as "a framework within which students can tackle complex adaptive problems, while productively and creatively achieving learning goals and personal growth of the highest possible value" (Delhij, van Solingen, & Wijnands, 2015, p. 5). Through the Scrum process, the teacher determines what needs to be learned; monitors, improves, and evaluates the quality of educational results; and is a "servant leader to the Student Teams" (Delhij et al., 2015, p. 10). Students, in turn, work in teams to achieve the required learning goals as established by the teacher. Student teams collaboratively decide how they will work toward the established learning goals through a series of Scrum Sprints during which they research, plan, and complete a project. To do

this, students create a Product Backlog, an ordered list of the tasks that need to be completed, and work through them one at a time.

Abbie and Ainsley's interest in Scrum came about in early February, when they participated in the Virginia Children's Engineering Convention, where they attended a presentation by a teacher who uses Scrum with his fifth graders. Abbie and Ainsley were interested in the way in which Scrum was shown to be a structure for students to work on a project in groups with minimal off task behavior and arguments. On a Friday morning in mid-March, Abbie and Ainsley visited the classroom of the Scrum teacher to learn more about this pedagogical tool and how he uses it with his students. The following Tuesday, the two teachers introduced Scrum to their students. When I visited that Friday, a week after the teachers had seen Scrum in action for the first time, their students were demonstrating a level of ease with the procedure.

Only three days after introducing Scrum to her students, Abbie joked, "Sometimes you feel useless. I don't have anything to do." Her students were exercising leadership and autonomy and demonstrating independence and interdependence. I watched one boy—who was not even the designated leader of his group—take on a leadership role, referring to the tasks outlined on the Promethean board and delegating them to his teammates. I watched another group share with Abbie the way they had decided to organize their research in their Google Doc; later, Abbie referred another group—that had used a similar but less user-friendly chart to organize their research—to check out the first group's organization and decide which was more useful. Abbie may have quipped that she felt "useless," but during this time she was also circulating around the room, checking in with groups, and asking prompting questions such as, "What can

you go on to double-check? If you're not sure, what can you do to double check?" referring to the document she had projected on the Promethean board and had shared with students through Google Classroom (see Figure 5). She provided the guidelines, the structure, and the support necessary for fourth graders to demonstrate this level of autonomy. She had done the planning to put the learning in her students' hands.



	A	B	C	D	E
1					
2	Sprint 1		Demo		Retrospective
3					
4	Explain the purpose of roots		All info is in a Google Doc		1. Are you satisfied with product?
5	Explain the purpose of the stem		All info is organized		2. Are there any changes you would like to make?
6	Explain the purpose of the leaves		Spelling & grammar are correct		
7	Explain the purpose of the flowers		All terms have user friendly definitions		
8	Define pollination		Understand and be able to discuss ALL terms		
9	Explain the purpose of the stamen				
10	Explain the purpose of the stigma				
11	Explain the purpose of the pistil				Check in with teacher: classwork grade
12	Explain the purpose of the sepal				
13	Define spore				
14	Explain the purpose of the seed				
15	Explain the process of photosynthesis				
16	Define chlorophyll				
17	Define carbon dioxide				
18	Define oxygen				
19	Define glucose				
20	Explain dormacy				
21					

Plant sprint 1 | Plant sprint 2 | Plant sprint 3

Figure 5. Student tasks outlined for Scrum Sprint 1.

Abbie's implementation of Scrum illustrates the ways in which her professional independence and interdependence intersect with student autonomy and purposeful peer interactions. In much the same way that Abbie is "left alone" to do with her classroom as she so chooses as long as she is "being successful within the parameters" that are set up for her, Abbie established parameters for her students and then allowed them to complete their Scrum tasks in the manner of their choosing. Furthermore, similar to the ways in which Abbie and Ainsley worked interdependently to adopt and implement Scrum, Abbie structured the Scrum activities in a way that required students to engage with one another in purposeful conversations in order to both complete the tasks and learn the required material. In this way, Scrum serves not only as a mediating artifact to allow Abbie—the

subject—to meet her students' needs—the object—but also provides insight into the ways in which the characteristics of the subject influence the selection of pedagogical tools. The ways in which Abbie's implementation of Scrum supports students' individual accountability and positive interdependence aligns with Abbie's qualities of independence and interdependence. Although her selection of pedagogical tools does not align with previous storylines about rural teachers, she has adopted novel tools that add to the multidimensional story of rural education.

Rules. Classroom activity systems are influenced by requirements placed on them by local, state, and national education agencies, including mandated learning objectives and high-stakes tests. Both Abbie's professional independence and her ability to adhere to the rules contribute to her ability to implement Scrum in her classroom. As a result of her professional independence, Abbie presented at the Virginia Children's Engineering Convention, was introduced to Scrum, and wanted to learn more. However, in order to get release time to both attend the convention and observe a teacher in another school division, Abbie needed the consent of her administrators. In an informal conversation after an observation, Abbie told me that she is able to exercise her professional independence because she ensures that her students perform well on the SOLs. She shared that she knows her job is to help the students master the SOLs, and as long as she does that she can "do her own thing." Abbie adheres to the rules—preparing her students for the ways they will be assessed on the end-of-year test, for example—but is not constrained by them.

It may seen counterintuitive that rules and professional independence could be so interwoven; nevertheless, the two permeate the way Abbie conceptualizes her role as a

teacher and a teacher leader. For instance, in her application to the Mentoring Novice Teachers course she wrote,

> While working for Newport News Public Schools I was selected to participate in their teacher mentorship program as mentor. I worked with new teachers by preforming [*sic*] observations prior to their official observations by supervisors, meeting weekly with my mentee to discuss problems they may be having in areas such as lesson planning, behavior management, and time management. I also helped them prepare lesson plans ensuring they covered SOLs.

In this example, Abbie is sharing her leadership abilities and how she has used them to support novice teachers in addressing the standards.

Consistent with the findings in previous studies indicating the importance of student performance on standardized tests in rural schools and given the amount of emphasis placed on school performance and accountability at national, state, and local levels, Abbie's attention to the standards seems appropriate. That attention seems especially appropriate within the context of Barratt County Public Schools. According to Abbie, a substantial amount of responsibility and pressure is associated with the SOLs, especially at Queen's River:

> Because we're the only school in the county, like, when it comes to testing and when it comes to stuff like you're it…. So there is a lot of pressure here, like right now, that's what I was saying, there's a lot of talk and that's what we're—you know, lots of meetings and that kind of thing, because there's a lot at store, you know, there's not a variety of things like other school systems. You can kind of go

> to another school in that system and kind of check it out, and they're doing well. This is it. End all, be all.

As the only school serving the third and fourth graders of Barratt County, students at Queen's River Elementary are not able to choose another school if theirs is underperforming. Statements from Abbie, such as "my class has created roller coasters, parade floats, and stop motion movies all while working on, and mastering, current SOLs," reinforce the idea that doing "her own thing" and adhering to the rules go hand-in-hand.

During my observations, I recorded multiple references to the SOLs and "the test." For example, while working with a small group during math rotations, Abbie told the students, "That's why we have to be very careful. Look at me in the eyeballs." She continued by saying that simple mistakes are what will mess them up on the test. During that same lesson, Abbie told another small group, "All our measurement, we can use our calculator on, because they're not testing if you know how to multiply or divide, they're testing if you can do this." On another day, in the midst of a whole group math lesson Abbie warned, "On your test, they love doing that to you," indicating how problems on the test will use words like "sum" to signal an addition problem. All references to the SOLs and testing that I recorded occurred during math instruction; I did not record any references to SOLs and testing when students were working on STEM or Scrum projects. Notably, Virginia fourth graders are tested in math, but not in science, which seems to explain the difference in emphasis on tested material and the selection of pedagogical tools between the two subjects.

Especially for the tested subject of math, Abbie's enactment of her role as a teacher in a rural context includes particular attention to the rules that dictate what students must know and be able to do at the end of fourth grade. Although teachers in public schools across the county are confronted with similar rules, individual student's performance on high-stakes tests could have greater implications for schools in rural areas where lower population density means that each student's test score may factor more heavily into an individual school's or division's overall performance.

Community. Activity theory can also be used to consider the complex interrelations between the subject and her community. Abbie possesses a nuanced sense of the community in which she lives and works. She understands the encompassing community of Barratt County and the individual communities in which her students live within the county. Abbie described the community in which Queen's River is located as "very diverse" in terms of features such as race, socioeconomic status, and family structure:

> So this school has Mulberry Lake—very middle class, yeah, very middle class. Diverse as far as the population goes in subcategories, I would say, but yes, still predominantly White. And then you get to the outer—outside of the lake, and it is extremely diverse. So we still have students who have no Internet access. We have students who, lots of students who are still on free and reduced lunch. We have students who come in who, you know, live with grandma and grandpa because mom and dad are not available…. In the sense of students and their background—and I kinda said that early on—it's extremely diverse. You still have a pocket of students who are English learners … you have students who are

> living in very dire situations, all the way up to students who don't think twice about buying a new pair of shoes to match every outfit that they have, which is very interesting within a classroom.

As Abbie illustrates with this quote, there is not one single community in Barratt County, but, instead, a collection of diverse communities.

When asked to elaborate on the ways in which these diverse communities influence the life experiences that students bring to their education, Abbie told me,

> Again, very diverse. And, yeah, and I think that goes back to knowing—and that's what I was saying about new teachers, like, get to know your kids, because if Johnny's coming to school and Johnny's hungry, Johnny's not going to pay attention to your math lesson in the morning, because Johnny's hungry. And I think it's extremely important to know that Johnny's hungry. At the same time, it's also just as important to know that I have a doctor's child and nurs—you know, mom and dad are doctors and nurses but there's also seven kids in the family, so [laughs] mom and dad might be doctors and nurses but that also means mom and dad probably aren't home a lot and whenever you have six siblings to go along with you, there's not a lot of time to be passed around. So I feel like that those kind of things are just super—like those are just super important.

Through this quote, Abbie demonstrates a familiar knowledge of her students and the diverse experiences they bring to the classroom. She also indicates the importance of learning about her students and reiterates her advice to new teachers to become familiar with individual students' experiences outside of school.

Abbie's knowledge of the community and her students' lives undergirds her practice. It influences how she interacts with students and manifests in the way she values and builds relationships; it also serves her in helping students master content. For example, in her reference to the fictional student, "Johnny," Abbie illustrates the connection between students' lived experiences and the ways she can use her knowledge of those experiences to make pedagogical decisions such as the ways she builds relationships. Furthermore, that relationship building extends beyond the classroom. For example, in her interview, Abbie told me about attending students' ballgames and conversing with them at the grocery store. She added,

> Makes a huge, huge impact, I feel like. And especially for the students who, you know, sometimes they need that connection. Students who are living with grandma and grandpa, they need to know that you care about them; they need to know that you're invested in them. And so I try to do that as much as I possibly can.

Abbie also admitted that she wishes she had more time for home visits, which would help her better understand her students' lives in the diverse communities within the county. Although Abbie did not engage in any formal home visits during this study, she did participate in a fundraiser for the school in which families could pre-order pizzas and have teachers deliver them to their homes. Following Teacher Delivery Night, Abbie remarked on how she had learned things about her students' families, such as who has more siblings than she thought and what families' houses looked like.

Teacher Delivery Night represents one of the ways that Queen's River Elementary School facilitates a community that unifies the diverse areas of Barratt

County. However no activity brought the community and Queen's River together like Ag Day. Sponsored by 4-H, Queen's River's Ag Day is an opportunity for students to spend the day rotating through stations provided by organizations such as the U.S. Department of Agriculture, the Barratt County Master Gardeners, and the James Barratt Soil and Water Conservation District. At one station, two sisters from the agriculture clubs at the middle and high schools shared facts about sheep and invited students to pet their woolly livestock.

During this station, the teacher leaned over and whispered to me, "This is a rural activity." As students picked handfuls of grass to feed the sheep, Abbie told me that this kind of activity would not happen in an urban school. She went on to say, however, that some of her students, such as those who live by the lake, might not have ever touched a sheep before. Her comment provides another example of Abbie's understanding of the diverse communities in which her students live and the ways their experiences in those communities impact that experiences that students bring with them to school.

From an activity theory perspective, the larger community in which the school is located is not the only community that influences what happens in the activity system. The community facilitated by the school—through such events as Ag Day and Teacher Delivery Night—spans the boundary between the school and the larger Barratt County community. Furthermore, the ways in which Abbie strives to build relationships with her students supports community building within her classroom.

Division of labor. Division of labor constitutes the ways in which the responsibilities are divided among participants in the activity system. In her interview, when asked how she would describe her role as a teacher at Queen's River Elementary

School, Abbie said that it is a "shared role." She went on to describe how she shares her role with other teachers:

> Because of how we break things up, I only teach math and science. My partner teaches Virginia studies and literacy…. So again, there's a lot of pressure because now I'm not only responsible for one classroom but I'm responsible for 50 students, individually.

In addition to sharing 50 students with her partner teacher, Abbie also mentioned that all of the teachers at Queen's River share responsibility for providing input and making decisions about pacing and end-of-unit tests.

However, Abbie does not only share her role with her fellow Queen's River teachers; she also shares her role with her students. The line between the teachers and the learners in Abbie's classroom is blurred. For example, on the day that she introduced Scrum to her students, Abbie asked, "What happens when you learn something new?" She explained that she is constantly learning new things and new ways to do things, and that sometimes she needs to practice that. She told students, "I am learning with you…. Are we gonna make mistakes together…? I'm learning along with you on this." She continued by telling students about making the slides she used to introduce Scrum and how going through the process of making them helped her get the information straight in her mind—that she is learning it by teaching it. That sentiment resonates with a statement she had made in her application with respect to her students' learning: "If you can talk about it you know it. If you can't talk about it you don't know it."

At other times, instead of the work of teaching and learning being shared, the responsibility for teaching and learning shifted between the teacher and the students over

the course of an interaction. During a whole-group math lesson, for example, Abbie asked for volunteers to model their solutions to problems on the board:

> Teacher: "Who did number 1 for me?"
>
> Student goes to board to explain what she did. Teacher reminds students to quietly raise their hands if they disagree.
>
> Teacher: "Raise your hand if you agree."
>
> Teacher: "Good job. Amanda, can you reduce that?"
>
> Student: "No, because 11 is a prime number."
>
> Teacher: "Number 2. Who did number 2 for me?"
>
> Student explains solution.
>
> Teacher: "Do we agree? Raise your hand if you agree. Here's my question: How many of you drew the big G like we did in the past…?"
>
> Teacher: "I was just curious. Does it matter which method you used?" Students respond, no, as long as you get the right answer.
>
> Teacher: "Freeze. Does everybody agree with Anthony so far?" Student explains lattice method for solving the multiplication problem.
>
> Teacher: "Okay, John sees a mistake."
>
> Teacher goes to the board. Checks the multiplication first. Then checks the addition.
>
> Turns out Anthony "absolutely had it right." Directs students to check their work to find their mistake and if they can't find it, bring her their notebook and she will look.

During the portion of the lesson detailed in the above excerpt, the responsibility for teaching and learning seamlessly shifted between Abbie and her students. In one moment, a student was doing the teaching, explaining the solution to a problem. In the next moment, Abbie took over the teaching, asking follow-up questions and prompting students' thinking.

In many ways, the level of autonomy her students possess supports the shared nature of teaching and learning in Abbie's classroom. For example, as students worked to complete their first Scrum Sprint, they shouldered much of the responsibility for recording their progress. Their Scrum Boards and Google Docs made it easy for Abbie to tell the projects' status with just a glance. Instead of using a tracking sheet to check in with each individual to monitor students' progress, Abbie told me that she can tell by looking at the "Done" column of the Scrum Board if students in the group are doing equal work. She said that she can see what they are working on as she circulates around the room by looking at their computer screens. She reminded me that she will also check in with each group when they present their Demo at the end of the Sprint and pointed out that she only has eight groups to check in with, rather than 25 individuals.

Despite her joke, Abbie is not rendered "useless" by this sharing of the labor of the classroom. Instead, she facilitates—through the use of such pedagogical tools as fostering student autonomy, providing supporting documents, and asking prompting questions—a community in which all members are both teachers and learners and students are empowered to be leaders of their own educations.

Conclusion. Taken together, the elements of the activity system indicate the ways in which Abbie conceptualizes and enacts her role as a teacher in the context of Barratt

County. Abbie conceptualizes her role as a teacher at Queen's River Elementary as a "shared role." She shares her role with other teachers both in educating a group of students and in taking responsibility for decision-making with all of the fourth grade teachers.

Consistent with the ways in which she conceptualizes her role, Abbie shares her responsibilities for teaching and decision-making not only with her fellow Queen's River teachers but also with her students. As she enacts this shared role, Abbie uses pedagogical tools that allow students to receive support not only from her, but also from each other. Through those purposeful peer interactions, students work interdependently to complete tasks and learn content. That interdependence with peers, in turn, allows students to act with autonomy. What is more, Abbie is professionally independent, which leads to her selection of pedagogical tools such as the group work model, Scrum. Using Scrum, in turn, allows her to foster autonomy among her students. Abbie is independent and capitalizes on opportunities for student autonomy to cultivate independence in her students. Moreover, Abbie's collaboration with other teachers and implementation of novel instructional approaches contrast sharply with previous storylines of rural teachers.

Ainsley: A Leadership Role

There's something about those light periwinkle walls that just turns the volume down on everything. They might be made of painted cinderblock, but they seem to issue quieting vibes. When Ainsley talked of the "out of the box teacher" she had in elementary school—who had painted the desks and the chalkboard ledge in pastels and showed that teachers can be themselves in the classroom—it was easy to see how it had influenced who she has become as a teacher.

The seating options, like the wall color, seem not to be standard issue. Along with typical desks and chairs, students have selected director's chairs, barstools, short metal stools, and carpet squares at tables and on the floor. As I settle onto my usual pink metal stool near the semicircle table at the back of the room, I hear Ainsley say, "This isn't going to be a free-for-all like our usual group projects."

"Today during science," she says, "we're going to be doing Scrum." Ainsley indicates the slideshow projected on the Promethean board and tells students, "Scrum is a way to work together as a group." She cues up a video of fifth graders talking about Scrum and how it has helped them complete projects where everyone knows what to do and there are few conflicts.

At the conclusion of the video, Ainsley asks, "So what are some words that you heard that might help you with this project?"

One student says, "Scrum Master."

Another student contributes, "Cooperate."

"I will be the Scrum Master," Ainsley clarifies. "Students will be the Scrum leaders." She indicates a slide that says SCRUM MASTER ≠ LEADER. "You're not the leader of the group. You're not in charge of the group."

Ainsley continues, "And when the Scrum leaders choose people for their teams, you'll be choosing not based on friends but based on skills, like writing, drawing, organizing, coding, animation. And somebody will get chosen last because somebody's got to be last." She asks, "If you feel like you're last a lot, what's something you could do?"

A student suggests, "Improve your skills."

"Or let other students know what you're good at," Ainsley adds. "Everybody has something you're good at. You should advocate for yourselves. Actually, tomorrow. Hint, hint."

Ainsley continues explaining Scrum. "So each Scrum session will have three parts, a beginning Stand Up, a Sprint, and an ending Stand Up." She details the questions students will answer during the Stand Ups and what they will do during each Sprint. Then Ainsley explains the Scrum Board, a manila folder filled with sticky notes listing each task to be completed during the Sprint. Ainsley stresses, "Each task is something that one person can work on."

"Questions, comments, concerns?" Ainsley asks. The students remain quiet.

"What is the beginning Stand Up?" Ainsley asks.

A student answers but the answer is not quite right. Another student raises her hand and answers correctly, but she doesn't remember the three questions they are supposed to answer. Other students contribute the questions.

"Is it okay to need help?" Ainsley asks. "Are you going to do everything right the first time? Do I do everything right the first time?"

A student chimes in that she put "master" instead of "leader" on a slide in her presentation.

Ainsley continues to verbally quiz students about the details of Scrum. After several other questions she asks, "How are you going to choose your group?"

"Based on the skills you need for that project," a student responds.

"Guess who's gonna know if you pick a group that's all your friends?" Ainsley asks.

"You!" the students chorus.

Ainsley moves on. "Today is just an overview. We'll start on this tomorrow."

This vignette of Ainsley's classroom at Queen's River Elementary School illustrates a fairly typical interaction between Ainsley and her students. During this lesson, she led her students through an overview of the activity they would complete and checked for understanding using a series of questions. Ainsley maintained her focus on the task of sharing information while demonstrating an awareness of her students—recognizing that they all have skills to share and that she knows who their friends are. Furthermore, she engaged in a back-and-forth with students during which she made sure that students had the knowledge necessary to begin their first Scrum Sprint the following day when they would have a greater degree of autonomy and responsibility.

When I visited her classroom a month after Ainsley first introduced Scrum, her students were hard at work completing their third and final Scrum Sprint. The open-ended nature of the assignment allowed students to approach their final project in a variety of different ways. Ainsley had provided guiding documents through Google Classroom so that students knew what was required; students were able to exercise their creativity within those parameters. By gradually releasing responsibility to her students during this Scrum process, Ainsley facilitated student autonomy.

In addition to allowing students to exercise autonomy, Ainsley used Scrum to facilitate productive group work. At the beginning of each Sprint, students identified the important tasks to be completed and broke those tasks down so that one person could be responsible for each task. Students worked on one task at a time, completing one task before starting another. For example, one student may be responsible for looking up

designated vocabulary terms. To ensure that every member of the group was learning through the Scrum process, Ainsley indicated to students that they should all know and be able to discuss the terms and definitions, even if they were not the ones to look them up. In this way, students were both working independently to complete individual Scrum tasks yet were interdependent in their reliance on one another for information and a complete understanding of the project.

In much the same way that her pedagogical practices facilitate both student autonomy and meaningful interactions between her students, Ainsley also demonstrates similar qualities of independence and interdependence. In the sections that follow, I detail the elements of the activity system of Ainsley's classroom, highlighting the ways that independence and interdependence manifest within the subject, object, mediating artifact, rules, community, and division of labor nodes of the activity system.

Subject. Ainsley is a 37-year-old woman who self-identifies as White. She has been a teacher for 10 years and has taught fourth grade at Queen's River Elementary School for five years. Ainsley is also the cheerleading coach for Barratt County High School. Prior to her position at Queen's River, she taught in two other rural school divisions, one adjacent to Barratt County and one on the Eastern Shore of Virginia. Ainsley demonstrates to varying degrees each of Casto and colleagues' (1981) characteristics of "individuals who are likely to most successfully work in the rural environment" (p. 3): previous experience in a rural environment, appreciation of rural culture, professional independence, a personal support system, and rural recreational interests.

Previous experience in a rural environment. Ainsley spent much of her early life in Newport News—a midsize city (Virginia Department of Education, 2009)—prior to moving with her family to Charlottesville—a small city. Ainsley completed her teacher preparation program at the University of Richmond, which is in an urban setting. For the most part, however, Ainsley's teaching experiences have been in rural school divisions. During our interview she told me, "I kinda like the rural. I couldn't do city teaching." Even though she had attended school in small and midsize cities, Ainsley prefers teaching in a rural setting.

In addition to the rural, distant (NCES, n.d.) school division of Barratt County, Ainsley also taught in in a rural, remote school division on the Eastern Shore of Virginia. When I asked her to compare Queen's River to the other schools in which she's taught, Ainsley reported,

> It depends on what aspect you're talking about. Environment-wise—environmental-wise I'd say they're very similar. Rural county, you know, you have your kids who can't afford anything to your kids who can afford everything. So in that aspect it's the same. The Eastern Shore was very poor. I mean there were kids who—we did a writing prompt and it was, like, tell about your favorite place to go, your, you know, vacation or whatever, and, I mean, kids were literally writing about their backyards 'cause they had just never experienced anything. So that was really hard. But I'd say it's pretty similar.

Ainsley "hated" working on the rural, remote Eastern Shore—particularly being so far away from her friends and family—and, after a year, retuned to this area which is closer to her personal support system.

Appreciation of rural culture. Ainsley and her family live in a rural county adjacent to Barratt where her husband grew up. Although she does not live in Barratt County, Ainsley demonstrates appreciation of the rural culture of the Barratt County community. In her interview, Ainsley shared,

> Well we're definitely a rural community. It's a—it's a funny community. It's—it's very tight-knit, but not at the same time. I mean, it's weird—I guess being part of the school and coaching I get to see, you know, kind of multiple sides—and, I mean, we did live in the community for a little while. So it's like—there are definitely, like, the lake is the lake and those are the people, you know, and then the rural people are—not rural, but like, Guildtown is a group. So it's like everybody kinda has their niche in their community, which is kind of cool. But the people have always been very open, for the most part, you know, accepting. It's never been like, oh, you don't belong here. I've never had anyone say they felt like that in this community, which is kind of cool. I mean everybody's pretty friendly.

In this excerpt, Ainsley demonstrates both an understanding and an appreciation of the culture of rural Barratt County. She recognizes the different communities the county encompasses and acknowledges that they are both unified within the county and yet distinct from one another. Although she characterizes the community as having "multiple sides," she finds it to be welcoming and the people to be friendly. Furthermore, just as she recognizes that areas within the rural community of Barratt County are different, Ainsley also recognizes differences between rural communities in general—for example the differences between Barratt County and the Eastern Shore.

Professional independence. Of all of the characteristics of individuals who are likely to be successful working in a rural environment (Casto et al., 1981), Ainsley most strongly demonstrates professional independence. One of the most notable manifestations of Ainsley's professional independence is through leadership roles. For example, Ainsley has been a mentor teacher for both pre-service and early career teachers. At Queen's River, Ainsley is also on the leadership team and is the math lead teacher for fourth grade. Through these roles, Ainsley has "facilitated PLCs and various professional developments."

Ainsley shared that she continues to grow as a teacher and that she adjusts her instruction to meet the needs of her students. During the interview, she told me,

> This is my tenth year teaching and I think every year I've just grown and I've changed. I don't keep lesson plans from year to year. I say, okay, who do I have this year? You know, there are certain activities that are the same, of course, but, I, you know, I really look at my students and my data and what does this particular group of students need.

As she has grown and changed and incorporated new activities into her teaching repertoire, Ainsley continues to share what she has learned with other professionals. For example, she and Abbie co-presented about their STEM projects at the Virginia Children's Engineering Conference. Not only does she possess the professional independence to seek out opportunities to improve her practice, but Ainsley also takes the initiative to share what she has learned with others.

Personal support system. In her interview, Ainsley revealed the importance of her personal support system:

> So I worked in [an adjacent county] for three years and lost my job there because of budgets and stuff like that, and so then we moved to the Eastern Shore for a year and I hated it. It was really bad. I had a really hard time being so far away from my family and friends and stuff. So I was just looking for jobs in the area, and, I mean, we're from—my husband's from [an adjacent county], so I, you know, this is kind of the area we want to be in. And my mom and my brother and my sister all live in Charlottesville and Barratt, so I was like, let me check out Barratt. My nephew was in the school system at the time and I was like, that would be perfect. It's super close to [the adjacent county] where we live, so I was kind of looking here and [another county].

This excerpt clarifies that it was the remote nature of the Eastern Shore—and in particular its distance from her personal support system—that was a factor in her decision to return to this area to teach.

In addition to the importance of a personal support system, Ainsley also recognizes how professional support systems have helped her. In her application to the Mentoring Novice Teachers course, Ainsley shared,

> When I was a first year teacher I did not have the support of a strong mentor or team mates. At the beginning I often felt stressed and alone. I sought help from the teacher I student taught with and gained a great mentor. I learned so much from her that year about teaching and about how to balance life as a new teacher. I had a very successful year my first year and having a mentor definitely helped in that. It has been my goal to make sure that others do not feel as I did. Whether

> teachers are new to our school, my team or teaching, I feel it is important to be there to support and encourage them.

Her own appreciation of a professional support system translates into the importance she places on being a mentor to novice teachers.

Furthermore, when I asked Ainsley what advice she would give to a new teacher at Queen's River, without hesitation she said,

> Oh my gosh. Ask for help. Do your job, and ask for help. It's just—it's a hard profession to go alone, for sure. It's—it's a lot of work, it's a lot of pressure, and so asking for help—finding the people that are like you and asking them for help—not asking everybody, 'cause you'll get 18 different answers and somebody's gonna tell you you're wrong and this person's wrong, so finding the people that are most like you in your teaching and asking them, like, "Well if this happened in your classroom, what would you do?" And I think mentorship is definitely important for a new teacher. And then just not be afraid. Don't be afraid to fail, don't be afraid. I mean, Abbie and I stand in the hallway and I'm like, "Gosh, that lesson did not go well." And it's okay, I mean it happens, but I think new teachers think they have to be, you know, so perfect. And a lot of times you see new teachers coming out feeling like, oh, I already know all of this, and then sometimes it's like, no, you need to take a step back. This is, you know, really what happens and how it works, you get in the classroom—[university] classes to the classroom don't always equate, so I would just—I mean, I think that's the biggest thing is, you know, just being open and it's okay if you get overwhelmed and, you know, have that support system in place.

Not only does Ainsley recommend a support system for new teachers in this excerpt, she also reveals that Abbie is a crucial aspect of her support system. As Ainsley's former teaching intern reported, "Ainsley and Abbie are like best friends." Moreover, during an observation, I noticed the extent to which her students recognize this supportive relationship when Ainsley told her students that they would be completing their standardized testing with Abbie. Ainsley said, "You all know that [we] talk a lot," to which a student responded, "A lot!"

Rural recreational interests. Rural recreational interests seems to be the least important characteristic of Ainsley's success in the rural environment. Her interests include spending time with family, cooking, reading, shopping, and drinking wine. While these activities are not inherently rural, this particular rural area does boast a substantial number of wineries and Ainsley remarked,

> It's funny because in such a small community, like, you do know the parents and if you are at a winery you're gonna run into someone. And so I think it's having that professionalism of, I'm an adult, you're an adult, this is what happens. You know, I know when I first started teaching it was like I didn't even want to buy anything at the grocery store 'cause oh my gosh, what if somebody saw me? And now it's like, okay, as long as I'm being a responsible adult, nobody's gonna say anything.

Even though drinking wine within view of students' parents could be a potential pitfall of living in a "tight-knit" rural community, Ainsley does not see it that way. Instead, Ainsley thinks that it is important for her students to "know that I'm an actual person who goes home and puts their PJs on, you know, or plays outside." Furthermore, sharing

aspects of her life with students facilitates her goal of building relationships with students.

Ainsley possesses several characteristics—particularly professional independence and a personal support system—that allow her to be successful teaching in a rural environment. These qualities that describe Ainsley as the subject of the activity system relate to the object, or goals she has for her students, and the mediating artifacts she uses to achieve those goals.

Object. Within activity theory, the object is the goal of the activity system. As a primary object of her classroom activity system, Ainsley has both academic and affective goals for her students. In her application she wrote,

> When a student leaves my classroom at the end of the year I have 2 hopes for them: One- that for the 180 days they spent in my classroom they felt safe, loved, encouraged, inspired, and free to be themselves; two- that they learned the curriculum in a meaningful and creative way so that they can continue their life-long journey of learning. Put simply, I want my students to be better both educationally and emotionally then [*sic*] when they started with me.

Ainsley not only has both educational and emotional goals for her students, but she also sees those goals as intertwined. In her interview Ainsley told me,

> I think, you know, the students will relate to you more and they'll want to perform better for you if they know that, like, you're there for them and you're a real person and, you know, you want to have fun, too.

The relationships that Ainsley strives for in her classroom are consistent with relationships documented across the literature on rural teachers.

Ainsley sees building relationships with her students as facilitating their academic outcomes. During an observation of math rotations, for example, Ainsley engaged students in a conversation about their activities outside of school before beginning the academic work. When students joined Ainsley at the semicircular table at the back of her classroom, they chatted about the things they had done over the weekend, including the movies they watched, where they went, and what they ate. Furthermore, in her interview Ainsley reported,

> I think it's fun for the kids to know me. You know, we were talking about a measurement thing and I was like, "Y'all, [my husband] and I were measuring something the other day," and I'm like, "and he was measuring it wrong … because of the zero…. And I was telling him, 'Oh, I have to teach you….'" You know, so the fact they know I talk about them at home and … [my son has] actually come into the classroom. They see him quite regularly, so, I think it's important. You know, I want them to know that I, you know, they see me at games, they see me at events all the time. You know, whenever we have things in the community we try and go to, so I think it's really important… You know, just makes those connections a little more meaningful I think.

In this excerpt, Ainsley revealed that she shares about her students and what they are learning with her family and also shares about her family with her students. Through those meaningful connections, Ainsley works to build relationships that she believes support students' academic growth.

Ainsley is able to hone in on students' academic growth across the year through the use of a test called the Student Growth Assessment (SGA). She explained to me that

after students complete the SGA she makes a list of specific skills each student needs to work on and has them put that list in their planners to share with their parents. During her math rotations, Ainsley works with small groups of students on the specific skills they need to target and the students are instructed to work on those skills during their independent review time. During her interview, Ainsley shared, "I really look at my students and my data and what does this particular group of students need." This data analysis supports Ainsley's selection of the pedagogical tools she uses to mediate her dual academic and affective goals. I explore these pedagogical tools in depth in the section that follows.

Mediating Artifact. Ainsley uses pedagogical tools as the mediating artifact to achieve the object of helping her students be "better both educationally and emotionally." During my time in Ainsley's classroom, I observed her using a variety of pedagogical tools—both conceptual and practical—to achieve her educational and emotional objectives for students. The tools Ainsley uses range from direct instruction to rotations to STEM projects to Scrum. In math, for example, I observed lessons that involved direct instruction followed by rotations. In science, I saw students working on projects to create food webs or learn about and construct a flower. I also observed a subset of Ainsley's most advanced students in the class working on a zoo project that spanned their math and science studies in which students had to design a zoo by choosing animals, researching their habitat needs, and planning exhibits to ensure that animals have adequate space, shelter, food, and water.

Across these various pedagogical tools, the level of student autonomy varied. During my first observation, for example, Ainsley began her math lesson using the

pedagogical tool of direct instruction to teach metric conversions. She wrote notes on the board for students to copy:

cm → mm → move decimal 1 place to the right

mm → cm → move decimal 1 place to the left

m → cm → move decimal 2 places to the right

cm → m → move decimal 2 places to the left

m → mm → move decimal 3 places to the right

mm → m → move decimal 3 places to the left

Off to one side of the board, she wrote, "10 mm = 1 cm," "100 cm = 1 m," and "1000 m = 1 m." Ainsley quietly walked around the room as students copied down the notes and then led guided practice: "It looks like most people have finished writing. Let's look at an example. If I have 18 meters, how many centimeters is that going to be and how many millimeters is that going to be?" Following this guided practice phase of the direct instruction model, Ainsley prepared students for independent practice by explaining the day's rotations and indicating that students would access the needed materials from a purple plastic basket located at the front of the room. The procedural nature of the first part of the lesson enabled students to create a resource in their notebooks that they could refer to later when they worked on this skill independently during rotations.

During a subsequent observation, students individually worked on a probability practice sheet and then played probability games online. Later in the observation, the

teacher administered a formative assessment in which students recorded their answers to a probability problem on sticky notes and placed them on their designated number on an "I Know" poster (see Figure 6). Ainsley then reviewed students' answers on the sticky notes in order to assess their progression toward mastery of the topic and determine what additional instruction might be necessary. According to Ainsley, the "I Know" poster provides her with a way to assess her students "beyond testing." Following this formative assessment, students were directed to work individually or in groups of two or three on their animal slide or review math.

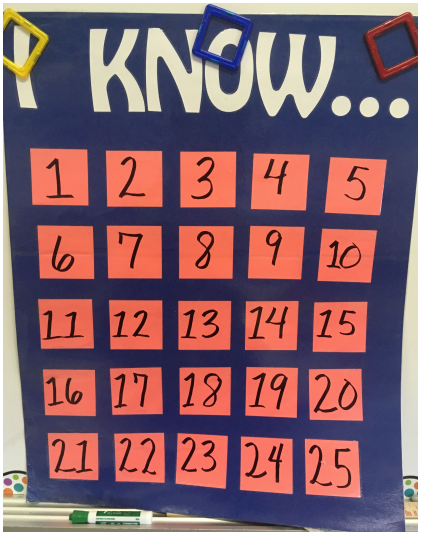


Figure 6. Ainsley's "I Know" poster, which she uses as a formative assessment tool.

In both of these examples, the level of student autonomy increased as the lesson progressed. Both began with more structured and teacher-directed activities—note-taking and independent practice, for example. Later in the lessons, however, students were provided more choices and were responsible for working with less direct support from

the teacher. Instead, Ainsley provided students with the materials necessary to be autonomous and take responsibility for their learning, such as zip-top baggies filled with review materials or links to online games. The way that Ainsley employs the pedagogical tool of the direct instruction model indicates a clear division of labor, which will be further explored in a subsequent section.

In contrast to the way autonomy shifted during individual math lessons, that shift took place over a longer timescale when students were working on science-related activities. For example, Ainsley used an entire science lesson to introduce Scrum to students using a Google Slides presentation; students did not start using Scrum until the following day. During an observation after the introduction, however, Ainsley gave a brief overview of "next steps" and provided students with supporting documents such as a rubric that could guide their work. Ainsley also provided support by checking in with groups, clarifying progress, and offering reminders as students worked on their Scrum Sprints.

Even though Ainsley provided documents and support to guide students' work, the Scrum tasks were open-ended enough that students could make decisions and were not confined by the explicit directions. During one observation, I noted an exchange between Ainsley and a group of her students in which she acknowledged how students were thinking beyond the directions:

> Teacher indicates that she's noticing that students are labeling who is doing what in the Google Doc but that she'll be able to see who did what on their Scrum Board but that when they "go to organize it," they should take those names off.

> She mentions that some groups are using different color fonts to track individuals' work. "You guys are thinking of things that I didn't think of. Awesome."

In this excerpt, the students were accomplishing their tasks in a way that the teacher had not previously envisioned. In her response, Ainsley demonstrated flexibility as she acknowledged the choices students had made regarding how they approached the assignment.

Similarly, students working on the zoo project in two different classes went about creating their maps in two different ways. In one class, students created maps of their zoos on the computer using Google Slides. In the other class, students sketched their maps on paper. Ainsley told me that she did not expect students to create them on the computer—she expected them to draw—but that she is "cool with it." She also explained that the students' selection of the media through which to create their maps fits the personality of those classes in that one is more tech-savvy whereas the other is more artistic. Even though both classes had the same instructions, the flexible nature of the assignment allowed students the autonomy to tackle the project in the way that best suited them.

Ainsley's ability to be "cool with it" represents her willingness to be flexible and follow students' leads. During one observation, students were assigned to either work on their zoo or food chain project or to work on math review. However, two boys who were partners for the zoo project were assigned to opposite rotations:

> Teacher sits at the semicircular table and talks with two boys about one of their presentations. She begins to send one of them back to work since he's supposed to be doing review instead of working on the computer, but she lets him stay….

> Teacher, to the two boys: "You're lucky that you've made it so far working together." Teacher lets the student who was on review switch to working on the computer so he and his partner can work together.

Because these boys had demonstrated that they were making progress on their project, Ainsley granted them permission to deviate from her original instructions and continue to work together.

In addition to the direct math instruction and more open-ended rotations and projects, I also observed a number of lessons that emphasized test preparation. In fact, my final observation of Ainsley's classroom consisted exclusively of preparation for the upcoming math SOL test. During this lesson, Ainsley introduced students to an online practice test similar to the SOL they would take in a few weeks and instructed them to practice using the tools provided in the software so that they could become familiar with them and the types of questions they will encounter. As the math SOL test approached, I observed Ainsley employ more teacher-directed preparation and more individual student practice. At the same time, however, in science—which is not a tested subject for Virginia fourth graders—students were provided with a great deal of autonomy as they completed their Scrum Sprints and constructed unique final projects.

In Ainsley's classroom, the provision of student autonomy is context-dependent, particularly varying between the tested subject of math and the non-tested subject of science. Her selection of pedagogical tools to mediate the teaching-learning process seems to shift most noticeably in relation to the rules—and particularly the mandated assessments—that govern the classroom activity system. Moreover, although Ainsley's selection of pedagogical tools does not align with previous storylines about rural

teachers, she uses new tools that contribute to the multidimensional story of rural education and the ways that rural teachers enact their role.

Rules. Classroom activity systems are subject to the rules placed on them by local, state, and national education agencies, including mandated learning objectives and high-stakes tests. The rules encountered by Queen's River teachers—especially those which stipulate what students are required to learn and how they are to be assessed—played a role in Ainsley's selection of pedagogical tools. During the spring semester in particular, the end-of-year test was on Ainsley's mind. During her interview she told me, "We are the only elementary school [in the school division] that has to deal with testing as far as on the elementary level, so there's a lot of pressure, especially this time of year." The pressure of the test, however, did not deter Ainsley from exercising her professional independence and implementing novel pedagogical tools like Scrum. For instance, when I asked Ainsley what it is like to be a teacher at Queen's River she reported,

> We're very data-driven. But it's weird because it's very data-driven but in a student-centered world, which people are like, well how can you kinda do both, but I think it's because, like, teachers like myself and even Abbie, like I pour over the data constantly and then I'm like, okay, well how can I take this and make it good for my classroom and my students. I think working here, we're really open to try new things. I'm really into, like, the STEM and, you know, trying—keeping up with the times of what we want to do for teaching and they really allow us to kind of branch out and do new things as long as we can show that we're still being successful, our kids are still getting what they need…. They know that if we're doing our job then we're being successful, they can see it in our data.

By branching out and doing new things—like implementing Scrum in her classroom—Ainsley was able to ameliorate the tension she felt between data-driven and student-centered instruction by focusing on ways she could make her instruction "good for [her] classroom and [her] students." Moreover, Ainsley indicated that she is able to exercise her professional independence as long as she can show that her "kids are still getting what they need" based on their performance on assessments such as the SGA and SOL.

Furthermore, Ainsley sees her objective of supporting students emotionally as facilitating their educational growth. In her application Ainsley wrote,

> I feel that I have had successful test scores because I truly believe in teaching the whole child. I do not look at my students as test scores, subgroups, or categories but as individuals. In doing so, I learn how to teach each child in my classroom.

Ainsley wrote this excerpt in response to the question, "Describe your teaching approach (strategies, methods, or tools) and tell us how that reflects your goals for students." Although this question did not explicitly mention test scores or student performance, Ainsley cited "successful test scores" and then went on to describe using data to drive her instruction. She wrote,

> I enjoy using data, both formative and summative to drive my instruction. I feel it is important to know where my students are and where they need to go every day. I am always looking for and implementing new ways to assess my students beyond testing. I have an "I Know" poster that allows students to post an answer to my lesson's guided question. This strategy helps me remediate or enhance my student's instruction at any given time. The Interactive Achievement and MAP

> [Measures of Academic Progress] data give invaluable amounts of information that I use in my daily planning.

For Ainsley, data plays a pivotal role in her selection of pedagogical tools.

Students were involved in preparing for standardized assessments during three of my eight observations in Ainsley's classroom. For example, I captured this exchange during preparation for an upcoming SGA:

> Teacher: "On Wednesday… you have your math SGA." "This test will cover some stuff you've had and some you haven't."
>
> Teacher closes the door. She tells the students that "they" don't expect them to do well on the test. "So what are we gonna do?"
>
> Students: "Do well!"
>
> Teacher: "We're going to show that you are ready for this end-of-the-year test coming up."
>
> The teacher explains that the "they" she referred to are "people who don't come into this class every day… they're the ones who are like, I don't think they can do it."

For me, Ainsley's words at first resonated with what Azano (2017) referred to as rural stereotype threat (Steele, 2010). However, because Ainsley did not mention students' rural identity as a reason "they" did not expect them to do well, it seems that Ainsley's comment was instead aimed at unifying students against an external naysayer and motivating them to perform well on the assessment. The motivating purpose behind Ainsley's words is further explicated by the fact that she went on to explain that students who pass the SGA will receive a treat and if the whole class passes they will receive an

additional treat. She then clarified that students would not be receiving a grade based on the SGA, but that following the test she would meet with individual students regarding their performance and work with small groups of students on concepts from the test that they had not yet mastered. After the SGA, Ainsley sent information home to students' parents regarding areas for improvement prior to the end-of-year SOL.

Notably, all of this test preparation took place in math, as math is the only subject that Ainsley teaches that is tested at the fourth grade level. Through her enactment of her roles as a teacher in a rural context, Ainsley pays particular attention to the rules that dictate what her students must know and be able to do at the end of fourth grade and how they will be assessed to demonstrate mastery of the requisite knowledge and skills. Although teachers in public schools across the county are confronted with similar rules, individual students' performance on high-stakes tests could have greater implications for schools in rural areas.

Community. Activity theory also accounts for the complex interrelations between the subject and her community. This community aspect of the activity system is not comprised of a single community, but a series of nested communities. The larger Barratt County community itself consists of multiple diverse communities. The school draws students from across those diverse communities and seeks to unify them through logos and branding that reflect school division pride. Additionally, Queen's River Elementary School serves as its own community of teachers, learners, and families. Furthermore, Ainsley's classroom possesses its own unique community environment.

Ainsley described the community in which Queen's River Elementary is located as rural. Moreover, in her interview, she highlighted the way that the community served

by the school is not one single community: “We're definitely a rural community. It's a—it's a funny community. It's—it's very tight-knit, but not at the same time.” Ainsley continued by describing the various communities that comprise Barratt County and that “everybody kinda has their niche in their community.” Barratt County Public Schools bring together individuals from these diverse communities through the schools that serve all the students at a particular grade band. The Barratt County Public Schools logo, for instance, is the logo for all of the schools and appears on the Queen’s River Elementary sign, gym floor, and apparel.

Queen’s River Elementary functions in many ways as its own community. As Ainsley shared in her interview,

> I love Queen’s River. We've only been open five years, I think this is our fifth year, and I was one of the teachers that came over when it first started, so I really feel like I'm part of this school, like I really feel like I've helped develop the school atmosphere that we have and so many people will come in and just say, "Wow, like your school just has this like feel about it," and it really does. I mean, we're very split, third and fourth, which is kind of weird that we're only two grade levels, but then there's twelve classes of each so we're still pretty large. But it's just—the environment is just so welcoming, I feel like. And we're all so different in what we—how we teach. Not all of us, but a lot of us are very different in what we teach, but yet somehow we always seem to make it work, which is nice.

Similar to the way in which Ainsley described how “everybody kinda has their niche” in the broader Barratt County community, she indicates that the Queen’s River community is comprised of different teachers who “always seem to make it work.”

This community within the school also supports connections between students' homes and the school. After engaging in a conversation in the hallway with the assistant principal and her partner teacher, Ainsley relayed to me their conversation about a particular student:

> The teacher tells me about a student who has been struggling and getting an attitude and that they've been trying to arrange a meeting with the parent, and that she did track the parent down in the office and scheduled a meeting, but the parent didn't show up. She says that she doesn't just want to bash the kid in front of her mom, but right now the bad is outweighing the good. She indicates that she learned something about the student yesterday that shed light on her behaviors and that she wishes everyone could have a "normal life."

As evidenced by this exchange, teachers and administrators within the school were collaborating to meet the needs of the student while also recognizing the need to bring the other important members of the child's community—namely her mother—into the conversation. Furthermore, Ainsley's wish that all of her students could have a "normal life" reveals her concern for her students, yet also complicates the notion of her wholesale embrace of the diversity of lifestyles that exist in Barratt County.

Additionally, even though Ainsley does not live in Barratt County, she values being a part of the community in which she teaches. During her interview she told me,

> Beyond the school I coach, as well, so I'm the head cheerleading coach at the high school, which I've done that for six years, so pretty much since I've been here. So I'm a big believer in, you know, not just teaching at the school but being part of the community, as well. So, even if I don't live here.

Furthermore, she expressed the value of engaging the young people she coaches in their community:

> I always try and reach out, like, with cheerleading we try and have like community events, like Saturday we're having a clinic for little girls in the elementary school, so I really want my girls to go out and, you know, be part of the community themselves to give, you know, our program a good name, the high school a good name and things like that, so, I think it's important.

Ainsley appreciates the Barratt County community and the people that comprise it, who she described as "just friendly, you know, they'll just—you find the right people and they'll give you their shirt off their back if you need it."

Ainsley also values building community within the classroom. As we wrapped up her interview she told me,

> I feel like I build a pretty strong environment within my classroom. It's different now that I have two, but I really worked to build it with both of them. Now obviously, my homeroom is still—you're a little bit closer with them, but I feel like the other class—we still, you know, I spend two and a half hours with them every day.

One way that she builds that environment is through reading and talking about the book, *Wonder*, in which a 10-year-old boy with a facial deformity enters public school for the first time. When I snapped a picture of a handmade poster depicting the book's cover, Ainsley said to me,

> I love the book *Wonder*… That's like the biggest thing. Like, that is, like, my theme through the whole year. It's like if somebody's being mean I'm like, "No,

> we choose kind." Like, I just think it's important that they understand that we're all different and it doesn't matter, you still need to be nice to your friends and we don't act like that. I don't tolerate—they know, like, I don't tolerate them being ugly to each other, which is awesome.

Prior to my observations, Ainsley urged me to pay attention to how students interact with one another, which would indicate the "strong environment" she builds within her classroom. In her interview, Ainsley shared that in students' "interactions with each other you can see kind of where they're coming from and how they approach situations." Through this comment, Ainsley revealed how she sees the ways in which students' interactions in the classroom are related to "where they're coming from" in the broader community in which her classroom is nested.

Division of labor. Within the activity system, labor is divided among the participants. When I asked Ainsley to describe her role as a teacher at Queen's River Elementary she responded,

> I like to be in charge of things. I like to be a leader of things. I am the math chair. I do a lot of our grade level stuff. We semi-departmentalize, so I teach math and science, so I do a lot of the math stuff. I am on the leadership team, like I'm our community leader. So I do—so I pretty much do all of that. I really am wanting to move into more leadership roles as I grow up.... Our principal is new this year and he's been great but our principal before him and our assistant principal both knew that so they both allowed me to step into roles to help me further my abilities in leadership. I like running PLCs and things like that, you know, kinda taking me out of the classroom sometimes and putting me into those roles, which has been

> really nice to have people who have your back and know, like, that I, you know, I want to be able to do that one day and they're gonna help me get there, so. And then, of course, I teach math and science [laughs] to 50 students.

This excerpt illustrates that, within Queen's River Elementary, Ainsley plays a strong leadership role and is interested in pursing additional leadership opportunities in the future. In her application to the Mentoring Novice Teachers course Ainsley wrote, "I am an aspiring principal or curriculum specialist. I believe this program would be the perfect first step in furthering my education and career path."

Erin, Ainsley's teaching intern, confirmed that the other teachers at Queen's River also viewed Ainsley as a leader. In our interview, Erin told me,

> Ainsley got there at 6:30 in the morning and so I got there at 6:30 in the morning…. I really valued that time. I mean, I know it's early, but I would, I would get there that early, like, when your teacher gets there, because Ainsley being the way she is, once all the teachers got there, her door was like a revolving door of people. Just like Abbie or [her partner teacher] or whoever, and so the only time the two of us got to talk about me was that 6:30 in the morning time. And so it was a time we could debrief about the day or things like that, where, if I got there at 7:00 when all the other teachers got there, like, I wouldn't have had that.

I also observed this "revolving door of people" that Erin described and on multiple occasions noticed Ainsley talking to Abbie or her partner teacher in the hallway or just inside her classroom door. The frequency with which other teachers sought Ainsley's advice and guidance provides further evidence of the leadership role she enacts at

Queen's River. In both formal situations such as PLC meetings and professional development and informal conversations in the hall, Ainsley is a respected leader within the school.

Ainsley reported in her application the reasons that she is drawn to a leadership role:

> First and foremost, I absolutely love helping others. I thrive on being able to teach not only my students but also the teachers around me. I am the mentor this year for a teacher fresh out of college. We met several times over the summer so that I could help her understand our pacing guides, navigate the VDOE website and begin planning lessons. Knowing that I was helping her year get started in a positive way was very rewarding.

As illustrated by this excerpt, she enjoys helping others—be they her colleagues or her students. Moreover, Ainsley maintains the role of leader in her interactions with both colleagues and with students.

Within in her classroom, Ainsley maintains her leadership role; the division of labor is clearly delineated. Through the use of pedagogical tools such as direct instruction, Ainsley leads her students by providing them with the resources they need to work with a great degree of autonomy during math rotations or Scrum Sprints. She promotes student autonomy within a framework in which she as the teacher is the leader of the classroom.

Conclusion. Taken together, the elements of the activity system indicate the ways in which Ainsley conceptualizes and enacts her role as a teacher in rural Barratt County.

Ainsley conceptualizes her role as a teacher at Queen's River Elementary as a "leader." She provides leadership to both her colleagues and her students.

As she enacts this leadership role, Ainsley uses pedagogical tools that allow her to lead students during portions of her instruction while at other times allowing students a greater degree of autonomy. Ainsley's leadership is indicative of her professional independence; her independence, in turn, allows her to foster autonomy in her students. Taking a leadership role in implementing Scrum, for instance, required a degree of professional independence on her part—to request time away from her classroom and employ a new pedagogical tool that she believed allowed her to meet, but not be constrained by, the state standards. Furthermore, Ainsley's implementation of Scrum also provided an opportunity for students to experience autonomy as they worked within their groups to complete their tasks. Ainsley is independent and capitalizes on opportunities for student autonomy to cultivate independence in her students. Moreover, Ainsley's pursuit of professional development and novel instructional approaches contrast sharply with previous storylines of rural teachers.

Multicase Assertions

I engaged in this multicase study to explore how teachers in a rural school division,

- Conceptualize their role as teachers in a rural context.
- Enact their role as teachers in a rural context.

I used activity theory to explore the ways in which the subject, object, mediating artifact, rules, community, and division of labor contribute to the ways in which these two rural teachers conceptualize and enact their role (see Figure 7). In particular, the subject

element of the activity system provided the most insight into how these rural teachers conceptualize their role; the mediating artifact and division of labor elements of the activity system provided the most insight into how these rural teachers enact their role. Although both teachers are independent and interdependent and employ similar pedagogical tools, differences in the ways the teachers enact their role can be explained by the differences in the way they conceptualize their role, which leads them to divide the labor of teaching and learning in their classrooms differently. Based on the findings from the individual cases presented in the previous sections, I posit the following assertions:

- The teachers in this study conceptualize and consequently enact their role in different ways, which are particularly evident with respect to how the labor of teaching and learning is divided in their classrooms.
- The teachers in this study demonstrate characteristics of independence and interdependence, and those characteristics play a role in their selection of pedagogical tools—such as math rotations, STEM projects, and Scrum—that foster student autonomy and purposeful peer interactions.
- Although the teachers in this study select the same pedagogical tools that align with their characteristics of independence and interdependence, their implementation of those pedagogical tools varies based on how they conceptualize their role.

I explore these cross-case assertions in more depth in the sections that follow.

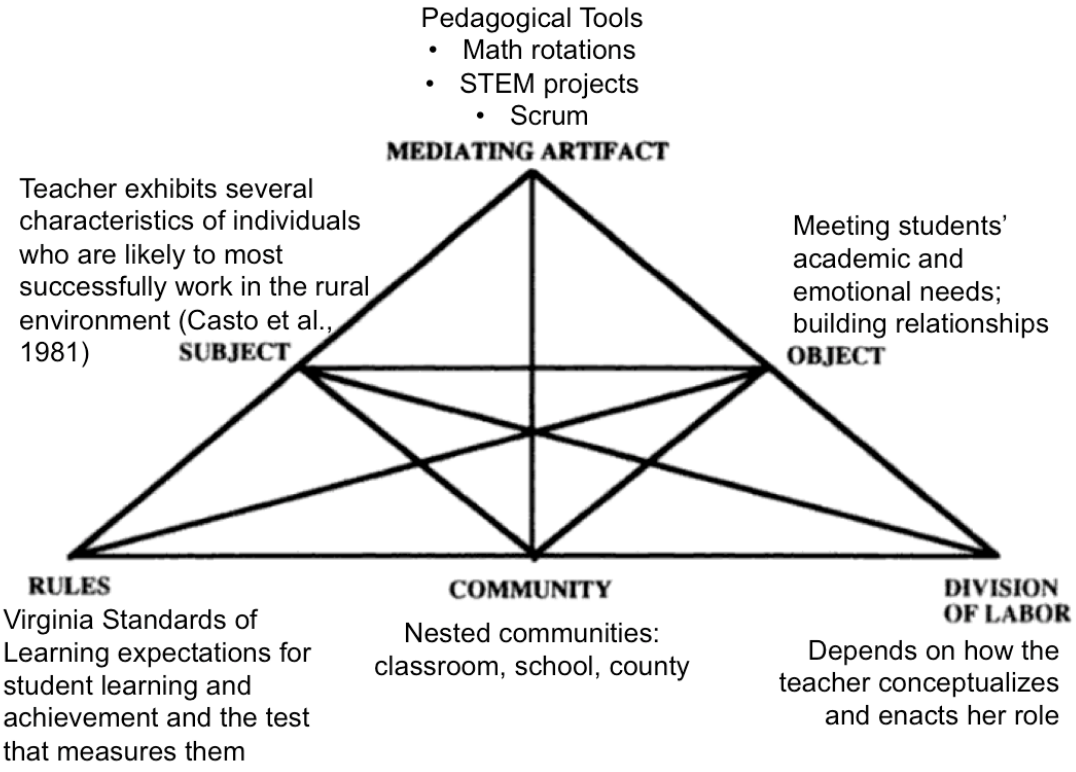


Figure 7. Activity system adapted from Cole & Engeström (1993) including specific elements present within the activity systems of Abbie's and Ainsley's rural classrooms.

Teachers conceptualize and enact their role differently. The language Abbie and Ainsley used to introduce Scrum to their students serves as an illustrative example of the different ways in which they conceptualize and enact their role. Abbie, who defined hers as a shared role, asked her students, "Are we going to make mistakes together? I'm learning along with you on this." In contrast, Ainsley, who defined hers as a leadership role, asked her students, "Are you going to do everything right the first time? Do I do everything right the first time?" Although the difference is subtle, Abbie's language suggested that she and her students were sharing the role of learner. Ainsley's word choice, on the other hand, placed her in the role of leading by example. Both teachers

indicated that students might make mistakes as they implement this new model of learning. However, Abbie's words assured students that she was going through the process with them, whereas Ainsley's questions provided reassurance that mistakes were to be expected.

Furthermore, although Abbie and Ainsley both learned about Scrum at the same conference and, together, observed the same teacher enact it, they used different language to explain the role of Scrum Master to their students. Abbie presented students with a slide that read "Scrum master = Leader" (see Figure 8) and explained to students, "But this is key… servant leader." She went on to explain that a servant leader asks, "How can I help you?" Abbie's word choice clarified the manner in which students would lead their peers. Furthermore, on a slide entitled "How does SCRUM work?" Abbie used passive voice to describe the role that she would perform—"A SCRUM master will be selected"—and used active voice to describe what the students would do:

- SCRUM master will select their group
- Group will create their SCRUM board
- Group will work together to complete Sprints

Through her voice and word choice, Abbie indicated that she was sharing with students much of the Scrum decision-making.

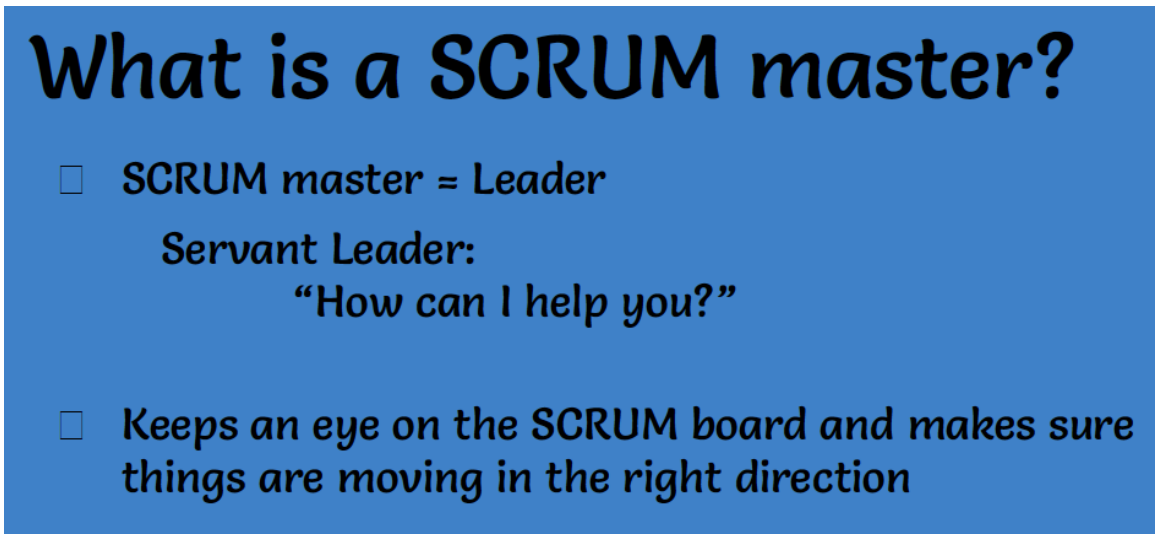


Figure 8. Slide Abbie used to introduce the role of SCRUM Master to her students.

On the other hand, when Ainsley introduced the role of Scrum Master to her students, her slide indicated "SCRUM MASTER ≠ LEADER" (see Figure 9) and explained to students, "You're not the leader of the group. You're not in charge of the group." Moreover, she clarified that she would be the Scrum Master and she would select students to be the Scrum leaders, a term which she used to describe the student role in subsequent slides. By elucidating her role as Scrum Master, Ainsley maintained her leadership role with her students.

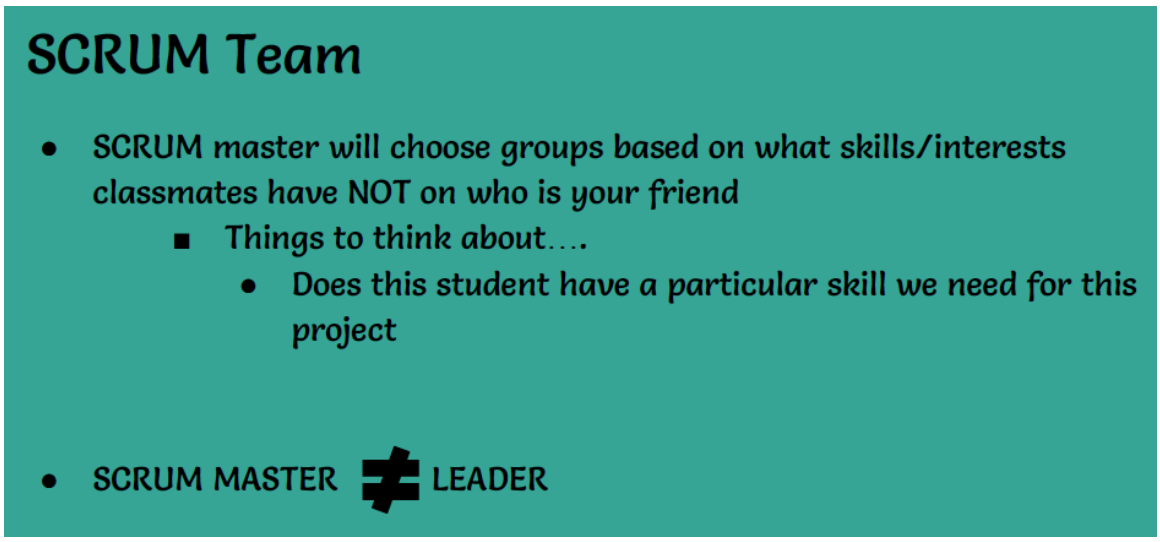


Figure 9. Slide Ainsley used to introduce the role of SCRUM Master to her students.

Although the way each teacher introduced Scrum to her students represents only one instance of how they enact their role, these examples are indicative of the way they enact their role more broadly. Abbie shares the work of teaching and learning with her students; the labor of her classroom is distributed. As in the opening vignette of Abbie's case, the role of teacher shifts between Abbie and her students during any one learning activity. The work of teaching and learning in Ainsley's classroom, on the other hand, is more clearly divided. Ainsley is always in the role of teacher; she gives students responsibility and opportunities for leadership while they remain in the role of students.

Notably, Abbie and Ainsley have different goals for their careers that relate to the ways they conceptualize and enact their role as teachers. In her interview Abbie told me, "I have no desire to be anything but a schoolteacher. I do not want to be admin." In contrast, during her interview Ainsley told me, "I am really wanting to move into more leadership roles as I grow up." Abbie's desire to remain in the classroom resonates with her shared role; Ainsley's aspirations beyond the classroom match her leadership role.

Whereas both Abbie and Ainsley both have leadership responsibilities at Queen's River Elementary, Abbie tends to act as the servant leader she described to her students and Ainsley tends to embody the attributes of a more traditional leadership style. Despite these differences, however, Abbie and Ainsley share characteristics that have contributed to their success in this rural environment.

Independence, interdependence, and the selection of pedagogical tools. Abbie and Ainsley display the characteristics of both independence and interdependence—characteristics that align with those of individuals identified as most likely to be successful in a rural environment (Casto et al., 1981). Casto and his colleagues defined professionally independent people as "those individuals who are self-sufficient and able to function somewhat independently on the job" (p. 4). Furthermore, they stipulated, "having a personal support system consisting of friends and co-workers who live and work in the same rural area… and who provide positive reinforcement and constructive criticism is crucial" (Casto et al., 1981, p. 4). Although being both independent and interdependent may at first seem contradictory, these two characteristics instead reinforce one another. For instance, Abbie and Ainsley displayed independence and interdependence by creating STEM projects in which their students created an amusement park and parade floats. They displayed independence in their creation of a new project and interdependence in their collaboration. Moreover, they presented both projects at the Virginia Children's Engineering Convention, embodying independence in their decision to share their work with other teachers and interdependence by co-presenting.

Furthermore, the ways in which these characteristics manifest in these two teachers are quite similar, as is their selection of pedagogical tools. I first explore the teachers' characteristic of independence and how that influences their selection of pedagogical tools that facilitate student autonomy. Then I explore the teachers' interdependence and how that influences their selection of pedagogical tools that provide opportunities for purposeful peer interactions.

Independence and student autonomy. Abbie and Ainsley are teacher-leaders at Queen's River Elementary. Both teachers have served as mentor teachers for pre-service as well as novice teachers. Furthermore they have both served as math lead teachers, Ainsley at Queen's River and Abbie at a previous school. Their desire to step into leadership positions represents a shared aspect of their independence.

Another facet of their shared independence is their willingness to adopt new pedagogical tools like Scrum, which allows them to foster autonomy among their students. In particular, their adoption of Scrum as an alternative to STEM projects increased the level of autonomy afforded to students. In fact, Abbie explained to her students that the three Scrum Sprints are the same as a STEM project except that now students come up with the information.

Abbie and Ainsley also employed additional pedagogical tools to support student autonomy as they engaged in their Scrum Sprints. The teachers provided students with flexible seating options and access to materials such as tape and markers. Furthermore, the teachers assigned each student a laptop computer. Using their laptops, students accessed Google Classroom, where they could locate guiding documents for the project and online resources that were prepared by their teachers. By providing students with the

project documents in a centralized location, Abbie and Ainsley gave students the responsibility to manage the project within their teams. Moreover, it allowed the teachers to shift into a role of active facilitation in which they prompted students' thinking and provided information and feedback. Such active facilitation provided the support students needed to work successfully with such a high degree of autonomy.

Interdependence and purposeful peer interactions. It is telling that both teachers mentioned finding another teacher for support among the advice they would give a new teacher at Queen's River. In particular, Abbie suggested that a new teacher,

> Find one teacher that you can—that you know that you can absolutely trust and count on. You don't need the advice of 50 teachers, you need the help of one teacher that you learned the first [day] back to school … that you're like, "They're good." You need to find that one teacher, and talk to them, say, "Hey, I need one teacher who I can come to and count on to ask questions, run things by," that kind of thing. That will save you. That would be big.

Similarly, Ainsley advised new teachers to,

> Ask for help. Do your job, and ask for help. It's just—it's a hard profession to go alone, for sure. It's—it's a lot of work, it's a lot of pressure, and so asking for help—finding the people that are like you and asking them for help—not asking everybody, 'cause you'll get 18 different answers and somebody's gonna tell you you're wrong and this person's wrong, so finding the people that are most like you in your teaching and asking them, like, "Well if this happened in your classroom, what would you do?"

Moreover, Ainsley went on to share how she and Abbie frequently have hallway conversations about their teaching. The interdependence that Abbie and Ainsley share means that they do not have to "go alone."

Their provision of pedagogical tools, in turn, ensures that their students do not have to "go alone" either. When she introduced Scrum to her students, Abbie explained that this new model of group work helps students draw on each other's strengths and that Scrum Masters should build a team based on students' skills. Within each Scrum team, students relied on each other to select and complete tasks to research, plan, and complete their project. Furthermore, just as Google Classroom apps facilitated student autonomy, they also facilitated purposeful peer interactions as students collaborated in shared documents. The importance of their interdependent relationship is reflected in their implementation of Scrum, which Ainsley defined in her introductory slides as "a way to work TOGETHER [*sic*] in a group."

Abbie and Ainsley are both professionally independent and interdependent—two characteristics of those most likely to be successful in the rural environment (Casto et al., 1981). In turn, they select pedagogical tools like Scrum that—through the provision of student autonomy and purposeful peer interactions—foster independence and interdependence in their students. By supporting their students in becoming both independent and interdependent, Abbie and Ainsley are fostering characteristics in their students that will help them be successful in the rural environment (see Figure 10).

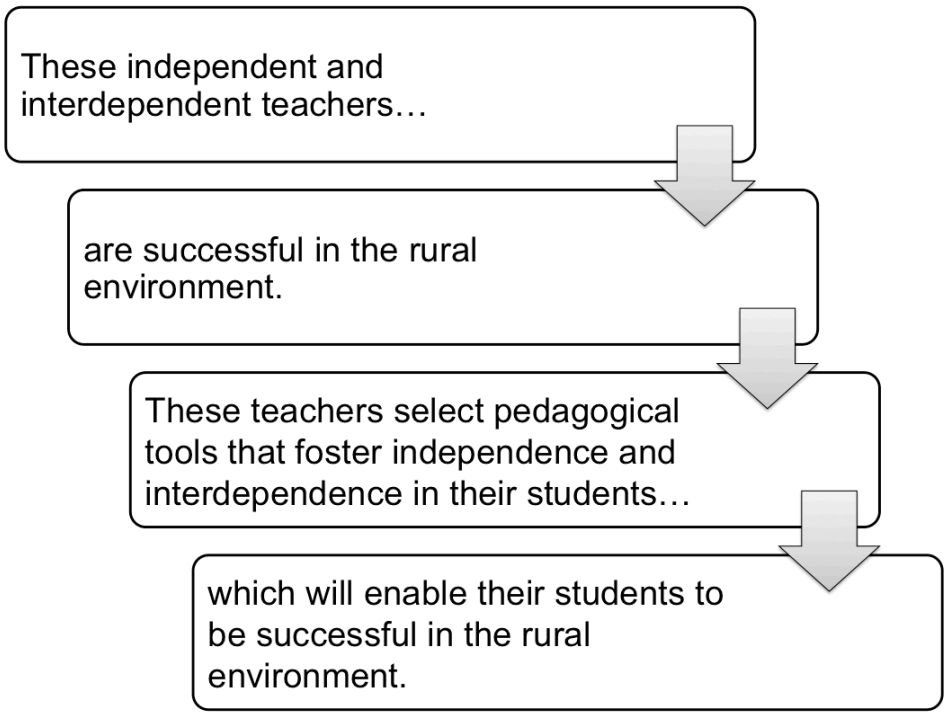


Figure 10. Teachers' characteristics play a role in their selection of pedagogical tools, which in turn foster the same characteristics in their students.

Conceptualization of role and the implementation of pedagogical tools. Even though Abbie and Ainsley select the same pedagogical tools that align with their sense of independence and interdependence, their implementation of those pedagogical tools varies based on the ways they conceptualize their role. For example, whereas both teachers used prompting language with students during math rotations, the ways in which they phrased their prompts differed. Abbie, who described hers as a shared role, tended to ask prompting questions, for example, "What's the first thing we're gonna do? What are we going to ask ourselves? What's our next question?" Consistent with her shared role, Abbie's questions engaged her in the problem-solving process alongside her students. In contrast, Ainsley, who described hers as a leadership role, tended to use prompting statements, for example:

> Look at your notes and tell me what you notice about going left or going right. If I'm going bigger to smaller, I'm going some number of places to the right. If I'm going bigger, I'm going to go to the left.

In keeping with her leadership role, Ainsley's prompts provided additional information to expand on students' understanding. Even though they phrased their prompts in different ways, both teachers provided feedback that extends student learning.

Similarly, Abbie and Ainsley chose different words when talking about the divergent paths students took in completing open-ended projects. For instance, when a student asked Abbie if she could use pictures during the research phase of the plant project, Abbie responded, "Good question. Did I tell you you couldn't?" Abbie's word choice suggests that the stated project parameters were a baseline and that students were allowed and even expected to go beyond them, encouraging student ideas. Although also providing opportunities for flexibility and student focus, Ainsley's response to the different ways students decided to design their zoo maps—draw them by hand or create them on the computer—was that she was "cool with it." A shade different from Abbie's, Ainsley's word choice indicates flexibility and her willingness to follow students' leads.

Despite the different ways in which they conceptualize and enact their roles, Abbie and Ainsley both use pedagogical tools aligned with indicators of quality instruction. The ways in which their chosen pedagogical tools represent quality instruction, as well as the ways in which they align with prior research on rural teaching, will be explored in the final chapter.

Conclusion

In this chapter, I presented the case findings and multicase assertions that enabled me to answer the research questions, How do teachers in a rural school division,

- Conceptualize their role as teachers in a rural context?
- Enact their role as teachers in a rural context?

Analysis of Abbie's and Ainsley's cases—both individually and together—enabled me to make the following assertions:

- The teachers in this study conceptualize and consequently enact their role in different ways, which are particularly evident with respect to how the labor of teaching and learning is divided in their classrooms.
- The teachers in this study demonstrate characteristics of independence and interdependence, and those characteristics play a role in their selection of pedagogical tools—such as math rotations, STEM projects, and Scrum—that foster student autonomy and purposeful peer interactions.
- Although the teachers in this study select the same pedagogical tools that align with their characteristics of independence and interdependence, their implementation of those pedagogical tools varies based on how they conceptualize their role.

In the fifth and final chapter, I connect my assertions to the existing literature on rural education—and rural teachers in particular—discuss the implications for practice, and suggest possibilities for future research.

Chapter 5: Discussion and Implications

I began this capstone research with a desire to address a problem of practice confronting the University of Virginia's Curry School of Education. Although many of Curry's pre-service teachers are placed in rural schools for their teaching internships, there have been no specific structures in place to support their preparation for the rural context. In their report, *Preparing Teachers to Teach in Rural Schools*, Barley and Brigham (2008) identified several program components intended to support pre-service teachers for teaching in rural contexts, including courses focused on rural issues—courses which Curry does not currently offer. I wondered what elements might best support pre-service teachers' preparation for successful teaching in the rural schools in which Curry pre-service teachers are placed, elements which could be included in existing coursework or contribute to the creation of a new, context-focused course.

Through this capstone, I examined the practices of teachers in one rural school division in which Curry places pre-service teachers in order to answer the research questions, How do teachers in a rural school division,

- Conceptualize their role as teachers in a rural context?
- Enact their role as teachers in a rural context?

Using qualitative analysis of interviews, observations, and documents through the lens of activity theory, I developed individual case findings and multicase assertions to answer the research questions. In the sections that follow, I first discuss these assertions and

position them within the literature on rural education. Then I outline what these assertions imply for practice, particularly at the Curry School of Education. Finally, I share directions for future research that could contribute to further understanding the multidimensional story of rural education.

Discussion of Assertions

Based on this multicase study exploring how teachers in a rural school division conceptualize and enact their role as teachers in a rural context, I posit the following assertions:

- The teachers in this study conceptualize and consequently enact their role in different ways, which are particularly evident with respect to how the labor of teaching and learning is divided in their classrooms.
- The teachers in this study demonstrate characteristics of independence and interdependence, and those characteristics play a role in their selection of pedagogical tools—such as math rotations, STEM projects, and Scrum—that foster student autonomy and purposeful peer interactions.
- Although the teachers in this study select the same pedagogical tools that align with their characteristics of independence and interdependence, their implementation of those pedagogical tools varies based on how they conceptualize their role.

In what follows, I discuss these assertions and the ways in which they relate to the extant literature on rural education and rural teachers in particular.

Teachers conceptualize and enact their role differently. Abbie and Ainsley, the two teachers in this study, each conceptualize their role differently, and as a result, they

enact their role differently. On one hand, Abbie described hers as a shared role, and just as she shares decision-making with her Queen's River Elementary colleagues, she also shares the work of teaching and learning with her students. Ainsley, on the other hand, described hers as a leadership role, and embodies a leadership role both within the school and within her classroom.

In hindsight, I realize that it should have come as no surprise to me that these teachers would conceptualize and enact their roles in different ways, regardless of the fact that they are partner teachers or even "best friends." Ladson-Billings (1995), in her seminal article on culturally responsive pedagogy, remarked that even though all of the participants in her study were successful teachers in the same school district, their practices were all quite different. Although the teachers that Ladson-Billings studied did not employ uniform instructional approaches, they all identified strongly with teaching and saw themselves as part of the community in which they taught. These unifying characteristics of culturally responsive teachers are also characteristics that Abbie and Ainsley embody.

Like the teachers in Ladson-Billings's (1995) study, both Abbie and Ainsley identify strongly with teaching. For instance, Abbie said, "I have no desire to be anything but a schoolteacher," and that she has always had her "hand in education." Although Ainsley did not always picture herself as a teacher—reporting, "I hated school growing up… My mom always said, 'You're gonna be a teacher,' and I'm like, 'I'm not spending my life in school. You are crazy."—she realized in college that that her mom was right and teaching was the career for her. Furthermore, even though Ainsley began her career

developing curriculum materials for pre-schools, she "always felt like something was missing." Working with students in the classroom was that missing piece.

Also like the culturally responsive teachers Ladson-Billings (1995) studied, Abbie and Ainsley see themselves as part of the community of Barratt County. As Abbie reported, "I love being in this community and being able to see [students] out, whether it's sports or church … or grocery store." Similarly, although she does not reside in Barratt County, Ainsley stated that she thinks involvement in the community is "important." Particularly through her role as the high school cheerleading coach, she facilitates opportunities for the girls she coaches to "be a part of the community." Moreover, both teachers possess an in-depth knowledge of the diverse communities that comprise Barratt County and the ways in which those communities influence students' lived experiences. Their place-consciousness allows them to "structure learning opportunities that are framed as meaningful and relevant to their students because they are connected to their own places" (White & Reid, 2008, p. 6).

The teachers' sense of place-consciousness is notable in that it supports them in understating and relating to the rural community in a productive and sustaining manner (White & Reid, 2008), particularly in the way that they build relationships with students. Abbie's and Ainsley's place-consciousness is consistent with other research on rural teachers (e.g., Azano & Stewart, 2015; Gruenewald, 2003; Kline et al., 2013; Moffa & McHenry-Sorber, in press; White & Reid, 2008). Although their place-consciousness does not lead them to select necessarily place-based pedagogical tools, the pedagogical tools they do select foster student autonomy and purposeful peer interactions. Through the provision of autonomy and interactions, Abbie and Ainsley support their students in

developing the characteristics of independence and interdependence—characteristics of those who are most likely to be successful in the rural environment (Casto et al., 1981). I explore Abbie and Ainsley's selection of pedagogical tools in the next section.

Independence, interdependence, and the selection of pedagogical tools. Consistent with the characteristics of individuals who are likely to most successfully work within the rural environment (Casto et al., 1981), Abbie and Ainsley are professionally independent and provide a support system for one another. This storyline of independence and interdependence contrasts sharply with the "rural problem" storylines pervasive in the literature about rural teachers from 1970 to 2010 (Burton et al., 2013, p. 1). Through a narrative literature analysis, Burton and her colleagues (2013) uncovered one-dimensional characterizations of rural teachers who were portrayed in one of two ways: either as the "problem" within the rural teaching context or as those working to address the "problem" of the rural context (p. 8). Abbie and Ainsley are neither the problem nor working to solve the problem of their rural context; instead, they are working to meet the academic and affective needs of their students.

It is notable that the teachers in the outlier article identified by Burton and her colleagues (2013) bear some similarities to the teachers in the current study. Like Abbie and Ainsley, the rural teachers at Mollusk Island School in Thomas's (2005) study were influenced by rules such as state-based accountability exam requirements. Like the teachers at Mollusk Island, the Queen's River teachers demonstrated awareness of the pressure to prepare students to perform well on the state-mandated tests. Furthermore, like the teachers at Mollusk Island, the Queen's River teachers felt they could, as Ainsley put it, "branch out and do new things as long as we can show that we're still being

successful, our kids are getting what they need" based on their performance on standardized assessments. This assertion is also consistent with the teachers in Ladson-Billings's (1995) study who were also confronted with state and local rules in that "the way they met and challenged those guidelines helped to define them" (p. 163).

One way that Abbie and Ainsley met and challenged those guidelines was through their selection of Scrum (Delhij et al., 2015) as a pedagogical tool. Scrum, although not a place-based or culturally relevant pedagogy per se, enabled the teachers in this study to foster autonomy and purposeful interactions among their students. By affording students opportunities for autonomy and peer interactions, Abbie and Ainsley are in turn fostering independence and interdependence, characteristics that will enable their students to work successfully within the rural environment (Casto et al., 1981). Therefore, although their selection of Scrum as a pedagogical tool may have had nothing to do with its relevance for place or culture, it does support their students in their rural setting.

Additionally, there are several ways in which Scrum intersects with the language of the Classroom Assessment Scoring System (CLASS; Pianta, Hamre, & Mintz, 2012). Even though CLASS serves as the common language to describe effective classroom interactions used to coach pre-service teachers at the Curry School of Education, and even though both Abbie and Ainsley were trained in CLASS and had coached practicum students using CLASS language a year prior to this study, I did not expect ideas from CLASS to emerge as such an integral aspect of their classroom activity systems. However, as I began coding my observations, I soon realized the need for an emergent code to capture instances of student autonomy, which is an aspect of the Regard for Student Perspectives dimension of CLASS.

Within Regard for Student Perspectives, Pianta and his colleagues (2012) described high quality support for autonomy and leadership as when "students are provided with meaningful choices within lessons and are given authentic opportunities for leadership and responsibility" (p. 35). Moreover, support for autonomy and leadership also includes a relaxed structure for movement. Furthermore, Regard for Student Perspectives also includes "opportunities for peer-peer interactions that are meaningful and serve an integral role within the lesson" (Pianta et al., 2012, p. 35). Choice, chances for leadership and responsibility, freedom of movement, and meaningful peer interactions were all observed as students engaged in their Scrum Sprints.

Abbie's and Ainsley's demonstration of regard for student perspectives aligns with findings from Martin and Yin's (1999) investigation of the differences between the classroom management styles of urban and rural teachers. Like Abbie and Ainsley, the rural teachers in Martin and Yin's study were less interventionist than their urban counterparts with respect to people management, indicated by responses such as, "Students in my classroom are free to use any materials they wish during the learning process" (p. 103). Furthermore, in demonstrating a high regard for students' perspectives by providing support for autonomy and meaningful peer interactions, Abbie and Ainsley support their students in developing the characteristics of independence and interdependence.

Conceptualization of role and the implementation of pedagogical tools. Although both Abbie and Ainsley choose the same pedagogical tools—such as Scrum or rotations in math—the ways in which they implement those pedagogical tools differ, particularly with respect to the ways they provide feedback to students. While students

were working in small groups on math rotations or Scrum Sprints, Abbie and Ainsley both circulated among groups, providing feedback that expanded and extended learning and understanding and encouraged student participation—aspects of the CLASS dimension of Quality of Feedback (Pianta, La Paro, & Hamre, 2008). What differed, however, was that Abbie tended to prompt students' thought processes by asking questions whereas Ainsley tended to provide students with additional information to expand on their understanding. Although prompting thought processes and providing information are both indicators of Quality of Feedback, they represent nuanced differences that align with the ways these teachers conceptualize their role.

In sum, Abbie and Ainsley share many qualities with rural educators documented previously in the literature, including those who are culturally responsive and place-conscious. Abbie and Ainsley also display regard for student perspectives, and how they enact their role as teachers in a rural context provides additional insights into the work of teaching in a rural setting beyond the previously identified storylines (Burton et al., 2013).

Limitations

This study was bounded by and situated in the specific context (Marshall & Rossman, 2011) of two classroom activity systems at Queen's River Elementary in Barratt County Public Schools. Whereas it is up to the reader to determine the study's usefulness for other settings, the study's purpose was to understand how teachers conceptualize and enact their role in this particular context. The teachers participated in this study voluntarily, and unexplored differences likely exist between the teachers who welcomed me into their classrooms and those who did not respond to my invitation to

participate in the study. Furthermore, my presence in Abbie's and Ainsley's classrooms may have altered the typical provision of activities, as the teachers indicated that they were excited for me to see certain things and apologized when a day's activities were less dynamic. Additionally, the timing of this study in the spring semester may have affected my observations as the school year drew to a close and the end-of-year tests approached. In particular, due to reasons unrelated to the study, my final two observations of each teacher were not conducted on the same day and I was in Ainsley's classroom two weeks after I had completed my observations with Abbie.

This study builds on research on rural education and rural teachers (e.g., Azano & Stewart, 2015; Burton et al., 2013), and particularly research that examines rural education through the theoretical framework of activity theory (e.g., Chinn & Hana'ike, 2010). Other voices and perspectives, however—particularly those of students, administrators, and community members—are not included. Moreover, whereas fully documenting the complex and multidimensional nature of rural teaching will require studying teachers who both struggle and succeed in the rural environment, in adopting an asset-based perspective, I only included teachers who have been successful teaching in the rural environment. Nevertheless, deepening understanding of the activity systems of these classrooms and how teachers in this context conceptualize and enact their role has contributed to the generation of recommendations to support Curry's pre-service teachers placed in this school division for their teaching internship.

Implications for Practice

Three-and-a-half decades ago, Gardener and Edington (1982) declared that rural schools "must not only prepare their students for life in the local community but also for

the adjustment into more urban communities so that their students are able to function efficiently in both environments" (p. 1). I would argue that the same imperative exists for teacher preparation programs—that they must prepare pre-service teachers to function efficiently in any context in which they might teach. For instance, Azano and Stewart (2015) advocated for a teacher preparation model "in which the experiences of all cultural, racial, geographic, and socioeconomic contexts are valued and integrated into the curriculum" (p. 3). Furthermore, the American Association of Colleges for Teacher Education's (AACTE) Clinical Practice Commission (2017) recently released a draft white paper of essential proclamations for highly effective clinical educator preparation, advancing that "while there are common stages and actions identified with successful [clinical] partnerships, each also possesses unique characteristics and requirements specific to its local context" (p. 16).

However, the prospect of creating a singular model of teacher preparation for all contexts could be daunting considering that "if you've seen one rural community, you've seen one rural community" (Theodori, 2003, para. 1), let alone one rural classroom or one rural teacher. Given the insights gained from this multicase study that teachers in a rural school—even those that share the characteristics of independence and interdependence and select the same pedagogical tools—conceptualize and enact their role as teachers in a rural context differently, implications for practice must be flexible and transferable between contexts. Therefore, teacher preparation programs like the Curry School of Education—which prepares candidates who ultimately teach in various contexts across Virginia, the nation, and the world—should invest their efforts in preparing teachers to recognize that context matters and to examine any context and identify its assets. To

facilitate that vision, I assert the following three implications for preparing Curry School of Education pre-service teachers for internship placements not only in Barratt County Public Schools, but also in any local placement in Charlottesville and the surrounding counties:

- Facilitate learning experiences that support pre-service teachers in understanding and seeing themselves as a part of the community in which they teach.
- Support pre-service teachers in developing the characteristics of independence and interdependence.
- Provide opportunities for pre-service teachers to learn about and practice interactions with students that display a regard for student perspectives and in particular foster student autonomy and meaningful peer interactions.

Although these implications for practice are specifically targeted to the context of internship placements in Barratt County Public Schools, they will also support Curry pre-service teachers placed in other rural and non-rural contexts. I detail these implications in the following sections.

Opportunities to understand and see themselves as part of the community. Both Abbie and Ainsley possess a nuanced understanding of the various communities that comprise Barratt County and both teachers appreciate being a part of the community. Notably, neither Abbie nor Ainsley grew up in Barratt County, and their place-consciousness developed as a result of their involvement in the community. Because it is important for teachers to see themselves as part of the community (Ladson-Billings, 1995), pre-service teachers arriving in Barratt County for their 16-week internship will

need to rapidly develop the place-consciousness that Abbie and Ainsley have cultivated over many years.

In order to help pre-service teachers develop place-consciousness of their internship contexts, I recommend that seminar instructors incorporate activities that engage interns in gathering information about and discovering the assets of the communities in which they are teaching. For one such activity, teaching interns could involve their students in writing introductory letters, acquainting interns to students' families, pets, and other interests. In this way, students could introduce themselves and their place to the interns, elucidating what they see as important to them in their everyday lives. Students, positioned in this way as experts on their own experiences and communities, can take on a teaching role, blurring the division of labor within the classroom.

Incorporating an introductory letter activity into the internship seminar requirements would not only provide interns with a child's-eye view of the community in which they are teaching, but would also serve to confront any preconceptions the pre-service teachers might hold about the context, helping them gain a more nuanced understanding of rural diversity. In order to facilitate interns' rapid development of place-consciousness of their teaching context, this activity should be incorporated into interns' seminar course early in their student teaching semester.

To further support interns in recognizing the assets of the communities in which they are teaching, seminar instructors could invite interns to use students' letters—as well as interns' personal experiences in their student teaching communities—to construct community assets maps (Kretzmann & McKnight, 1993). Such maps would detail the

people, places, and organizations that comprise each school's community and illuminate for interns the diverse features and capacities of that community. This activity would not only support interns in confronting any preconceptions of that particular community but also provide them with the tools to identify the assets of any community in which they may ultimately teach.

Rather than creating new context-specific or rural-focused coursework, activities like these—that support interns in building place-consciousness—should be embedded in existing teacher preparation coursework. In order for Curry to prepare teachers who are equipped to work in any context—ranging from a large city to a remote rural area—coursework needs to provide pre-service teachers with opportunities to understand and see themselves as part of the community. Consequently, the introductory letter and community assets map activities should be used with all interns to provide them with students' perspectives on their context, be it rural, suburban, or urban.

Develop characteristics of independence and interdependence. Abbie and Ainsley display the characteristics of independence and interdependence, characteristics that likely have contributed to Abbie's and Ainsley's success in the rural environment. The characteristics of independence and interdependence, however, are not limited to descriptions of successful rural workers. For example, among the characteristics of 21st-century teachers, Palmer (2015) listed that they innovate and keep learning, collaborate and connect. To innovate and keep learning implies a level of independence; to collaborate and connect implies interdependence.

Abbie and Ainsley support their students in developing independence and interdependence through the provision of pedagogical tools that cultivate student

autonomy and purposeful peer interactions. University-based teacher educators should support pre-service teachers' development of independence and interdependence in a similar manner. For example, in-class activities could involve Scrum-like cooperative learning, in which students are required to have both individual accountability and positive interdependence (Kagan, 2011).

To further develop pre-service teachers' sense of interdependence during their teaching internship, the Curry Office of Teacher Education should strive to place interns in pairs so that there are at least two interns at a given school. Paired placements would provide interns with a peer who is experiencing a similar context and with whom interns can collaborate, process their experiences, or stand in the hallway and grumble, "Gosh, that lesson did not go well," as Abbie and Ainsley do.

Furthermore, during their teaching internships, university-based professional development could support pre-service teachers in increasing their sense of both independence and interdependence with colleagues at the schools in which they are placed. One way that the Curry Office of Teacher Education currently supports collaboration is by encouraging intern-mentor pairs to use co-teaching models in their instruction (Curry School of Education, 2014). Moreover, Curry already provides training for mentor teachers—ranging from one-day orientations to the Mentoring Novice Teachers course. Curry could expand on this professional development by creating opportunities for pre-service teachers and mentors to engage in professional development together.

For example, to support the use of co-teaching, university-based teacher educators could offer professional development sessions focused on the implementation of co-

teaching models that interns and mentors attend together. Furthermore, to support those who are teaching in more rural contexts and for whom it is not as convenient to attend professional development at the university, it could be conducted in an interactive, online format. In this way, the Curry School of Education would support both pre-service and in-service teachers by giving them tools to function independently on the job, as well as augment their professional support system and support their interdependence. Providing professional development in this manner would address two "frustrations for professionals in rural areas" (Casto et al., 1981, p. 4): the inability to consult with other professionals and the inability to participate in meaningful in-service training.

Implementing such a pre-service/in-service professional development model could not only draw on the expertise of mentor teachers—rural or otherwise—but also further support the developing interdependence between interns and mentors. Moreover, such a professional development model could be mutually beneficial, creating a boundary-spanning "third space" in which "school-based and university-based teacher educators play necessary, vital, and synergistic roles in clinical educator preparation" (AACTE Clinical Practice Commission, 2017, p. 9).

Develop regard for student perspectives. Abbie and Ainsley display regard for student perspectives through their provision of activities that allow for student autonomy and meaningful peer interactions. Currently, pre-service teachers at the Curry School of Education receive instruction and coaching on CLASS dimensions, which may include a focus on Regard for Student Perspectives. I recommend that additional emphasis be placed on preparing pre-service teachers to demonstrate high levels of Regard for Student Perspectives, which will allow pre-service teachers to "meet and capitalize on the social

and developmental needs and goals of students by providing opportunities for student autonomy and leadership" (Pianta, Hamre, & Mintz, 2012, p. 35). Whereas displaying regard for student perspectives will allow pre-service teachers placed in Barratt County Schools to make content useful and relevant to students, the same will be true for pre-service teachers placed in any context.

Additional emphasis on Regard for Student Perspectives should involve pedagogies of practice such as representations, decomposition, and approximations of practice (Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009). This should take place during the curriculum and instruction course prior to the internship and include watching videos of teachers who demonstrate high levels of Regard for Student Perspectives, naming individual teacher moves using CLASS language, and then practicing those moves in peer-teaching scenarios. Following these pedagogies of practice in the university setting, pre-service teachers should receive coaching from their university supervisors on their use of Regard for Student Perspectives in the K-12 classroom during their field experience.

Currently, Regard for Student Perspectives is not a required dimension of focus for elementary pre-service teachers at Curry, meaning they may not receive coaching on this dimension during either their practicum or internship. I recommend that Regard for Student Perspectives becomes a dimension of focus for either the first or second observation cycle during the teaching internship. This will provide pre-service teachers an opportunity to plan for flexibility and student focus, student autonomy, and meaningful peer interactions, enact that plan, and receive coaching on their efforts. Again, although focusing on Regard for Student Perspectives would be especially useful

for pre-service teachers placed in Barratt County Public Schools, it would be beneficial for all pre-service teachers, regardless of context.

Future Research

Although this capstone research provides a glimpse into two rural teachers' classrooms, many voices are missing that would help tell a more complete story of teaching and learning at Queen's River Elementary School. For instance, Abbie and Ainsley teach on the gifted team; how do teachers on other teams conceptualize and enact their role as teachers in a rural context and how does that differ from the ways in which Abbie and Ainsley conceptualize and enact their role? How do teachers at the primary, middle, or high schools conceptualize and enact their roles? How do students' experiences differ between teachers based on how those teachers conceptualize and enact their role? Future research might investigate these questions, gradually adding more nuance to the understanding of teaching and learning in this one rural context.

This study serves as a counter-narrative to the "rural problem" storylines pervasive in the literature about rural teachers (Burton et al., 2013). However, this study is but a drop in the bucket toward understanding the complex and multidimensional story of rural education. I echo Burton and her colleagues in calling for additional small-scale, qualitative research that explores the complex nature of teaching in a rural area.

Conclusions

It's Ag Day. In the field in front of me are four wooly sheep and 25 completely engrossed fourth graders. Abbie leans over and whispers to me, "This is a rural activity."

While we watch the students engage with the sheep, one boy explains to Abbie what he just learned about why the sheep have such short tails. It turns out that sheep have no muscles in their tails to raise and lower them when they go to the bathroom, so their owners docked their tails to keep them clean and healthy.

Abbie turns back to me. "And we talk a lot about pooping on Ag Day. Just saying."

Ag Day may have been filled with rural activities—and, admittedly, poop—but it represented just one day at Queen's River Elementary. To constrain the narrative of rural teaching to quintessentially rural activities like Ag Day would neglect the complex and multidimensional work of teaching in a rural context. Whereas the rural setting of Barratt County is always in the background, informing teachers' place-consciousness and students' lived experiences, a myriad of additional factors interact to shape the activity systems of these rural classrooms.

I embarked on this multicase study to address the research questions, How do teachers in a rural school division,

- Conceptualize their role as teachers in a rural context?
- Enact their role as teachers in a rural context?

Abbie and Ainsley, both independent and interdependent, conceptualize and enact their roles differently. Of course they do. After all, when you've seen one rural classroom, you've seen one rural classroom.

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Appendix A

Semi-Structured Interview Protocol: Teacher

Interviewer: _____

Interviewee: _____

Date: _____

Location: _____

1. How would you describe your elementary school experience?
    a. Where did you go to school?
    b. How does your elementary school compare to the school in which you currently teach?

2. How would you describe the school in which you currently teach?
    a. What factors impacted your decision to teach at this school?
    b. What other schools have you taught in? Please describe them.
    c. How does your current school compare to other schools?

3. What is it like to be a teacher in your school?

4. How would you describe your role as a teacher at your school?

5. What experiences best prepared you for your current teaching position?
    a. What about those experiences made them particularly effective?

6. What opportunities to learn do you wish you had had prior to your current teaching position?

7. If you could give advice to a new teacher coming into your school, what would it be?

8. How would you describe the community in which your school is located?
    a. Some teachers are very involved in the communities where they teach; other teachers are not. To what extent are you involved in the community in which your school is located?

9. What life experiences do your students bring to their education?
    a. What should I look and listen for in my observations that would provide me with insights into students' life experiences?

10. What are your interests outside of school?
    a. Some teachers integrate their personal interests into their instruction; other teachers tend to keep their personal and professional lives separate. What are your thoughts on integrating personal interests into instruction?

11. Is there anything else you would like to tell me that I didn't think to ask?

Thank you very much for taking the time to participate and share your experiences.

Appendix B

Semi-Structured Interview Protocol: Teaching Intern

Interviewer: _____

Interviewee: _____

Date: _____

Location: _____

1. How would you describe your elementary school experience?
    a. Where did you go to school?
    b. How does your elementary school compare to the school in which you completed your teaching internship?

2. How would you describe the school in which you completed your teaching internship?
    a. Can you tell me a bit about how you came to be placed at that school?
    b. What other schools have you taught in? Please describe them.
    c. How does your teaching internship placement school compare to other schools?

3. How would you describe what it was like to be a teacher at the school where you completed your internship?

4. How would you describe the role that [the teachers in the study] play at the school where you completed your teaching internship?

   a. Please tell me a bit about ways in which [the teachers in the study] enact their role.
   b. Could you talk a bit about the degree of professional independence you see in [the teachers in the study]?
   c. Could you talk a bit about the support system teachers have within the school where you completed your teaching internship?

5. What experiences best prepared you for your teaching internship?
   a. What about those experiences made them particularly effective?

6. What opportunities to learn do you wish you had had prior to your teaching internship?

7. If you could give advice to a new intern coming into the school where you completed your internship, what would it be?

8. How would you describe the community in which the school where you completed your teaching internship is located?
   a. Some schools are very connected to the communities in which they are located; other schools are not. To what extent is the school in which you completed your teaching internship connected to the community in which it is located?

9. Is there anything else you would like to tell me that I didn't think to ask?

Thank you very much for taking the time to participate and share your experiences.

Appendix C

Observation Running Field Notes Example

Observer: Meredith McCool

Teacher: Abbie

Date: March 31, 2017

Time: 9:40 – 10:30

Location: Queen's River Elementary

Context description:

Today is the day before Spring Break. The teacher reminded me of this fact as it may influence what I observe today.

Today there are also 2nd graders touring the building. Some of the QRE students are stationed around the school with text to read to introduce the younger students to the school.

Field Notes:

When I entered the room, the students are sitting around the room listening to the teacher. She is sitting in a student desk talking to students about Scrum Sprints.

9:45 Teacher asks students to share procedures as they move from Sprint 1 to Sprint 2. Teacher gives students directions for group leaders to get Scrum Boards, groups do Stand Up, and then students can get computers.

When teacher releases them, students move.

Some students come over to the computer cart. Teacher tells them if they are getting computers she assumes they've done Stand Up, and the students return to their groups.

More students come to the cart. Teacher reminds them, "Remember, we're not supposed to be in there unless…" [Seems to me that Stand Up is very rapid. Are groups rushing to get computers? Are they not assigned a particular machine? How does not taking time

Appendix D

Informed Consent Agreement: Teacher

Please read this consent agreement carefully before you decide to participate in the study.

Purpose of the research study: The purpose of the study is to examine what works in rural education in a particular rural school division. Specifically, this study is intended to explore how teachers in a rural school division conceptualize and enact their role as teachers in a rural context.

What you will do in the study: As a participant in this study, you will be asked to complete an interview and allow observations and instructional document collection to be conducted in your classroom. The interview will be audio recorded and you can skip any questions that make you uncomfortable and you can stop the interview at any time. Observations will be conducted twice a week for about a month and will be documented with written field notes. Additionally, photographs will be taken of classroom elements and instructional documents.

Time required: The study will require about 2 hours of your time. The initial interview will last about an hour. Additional time will be used for post-observation conferences and member checking to improve the accuracy of interpretations drawn from analysis of the data. All care will be taken to ensure that observations do not interfere with instructional time or student learning.

Risks: Loss of confidentiality is a risk associated with this study. Due to the nature of the data, confidentiality cannot be guaranteed.

Benefits: There are no direct benefits to you for participating in this research study. The study may help us understand effective practices in rural education and lead to the creation of a resource to support Curry's pre-service teachers placed in your school division for their teaching internship.

Confidentiality: The information that you give in the study will be handled confidentially. Your information will be assigned a pseudonym. The list connecting your name to this pseudonym will be kept in a locked file. When the study is completed and the data have been analyzed, this list will be destroyed. Your name will not be used in any report. Audio recordings and photographs collected during the study will be destroyed following presentation of the findings.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty. Collected audio recordings and photographs will be destroyed should you decide to withdraw.

How to withdraw from the study: If you want to withdraw from the study, tell the researcher. There is no penalty for withdrawing. If you would like to withdraw after your materials have been submitted, please contact the researcher, Meredith McCool.

Payment: You will receive no payment for participating in the study.

If you have questions about the study, contact:
Meredith McCool
Department of Curriculum, Instruction, and Special Education, Curry School of Education
University of Virginia, PO Box 400273
Charlottesville, VA 22903
Telephone: (434) 270 – 3517
mlm3af@virginia.edu

Catherine Brighton, Ph.D.
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University of Virginia, PO Box 400277
Charlottesville, VA 22903
Telephone: (434) 924 – 1022
brighton@virginia.edu

If you have questions about your rights in the study, contact:
Tonya R. Moon, Ph.D.
Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr Suite 500
University of Virginia, P.O. Box 800392
Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Agreement:
I agree to participate in the research study described above.

Signature: _____ Date: _____

You will receive a copy of this form for your records.

Appendix E

Informed Consent Agreement: Intern

Please read this consent agreement carefully before you decide to participate in the study.

Purpose of the research study: The purpose of the study is to examine what works in rural education in a particular rural school division. Specifically, this study is intended to explore how teachers in a rural school division conceptualize and enact their role as teachers in a rural context.

What you will do in the study: As a participant in this study, you will be asked to complete an interview. The interview will be audio recorded and you can skip any questions that make you uncomfortable and you can stop the interview at any time.

Time required: The study will require about 30 minutes of your time.

Risks: Loss of confidentiality is a risk associated with this study. Due to the nature of the data, confidentiality cannot be guaranteed.

Benefits: There are no direct benefits to you for participating in this research study. The study may help us understand effective practices in rural education and lead to the creation of a resource to support Curry's pre-service teachers placed in a rural school division for their teaching internship.

Confidentiality: The information that you give in the study will be handled confidentially. Your information will be assigned a pseudonym. The list connecting your name to this pseudonym will be kept in a locked file. When the study is completed and the data have been analyzed, this list will be destroyed. Your name will not be used in any report. Audio recordings collected during the study will be destroyed following presentation of the findings.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty. Collected audio recordings will be destroyed should you decide to withdraw.

How to withdraw from the study: If you want to withdraw from the study, tell the researcher. There is no penalty for withdrawing. If you would like to withdraw after your materials have been submitted, please contact the researcher, Meredith McCool.

Payment: You will receive no payment for participating in the study.

If you have questions about the study, contact:

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If you have questions about your rights in the study, contact:

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Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Agreement:

I agree to participate in the research study described above.

Signature: _____ Date: _____

You will receive a copy of this form for your records.

Appendix F

Demographic Questionnaire

Directions: To provide me with some background information, please answer each question as accurately as possible.

Name _____

What is your birth date?

What is your gender?

What is your racial and ethnic identity?

How many years of teaching experience do you have?

How many years have you been teaching at your current school?

How many years have you been in your current position?

Appendix G

Theory-Generated Codebook

Code	Sub-Code	Example Quote
Subject		"I love being here, like I love doing this job"
	Previous experience in a rural environment	"I actually did grow up in a rural kind of setting"
	Appreciation of rural culture	"My child's in 4-H so I'm involved in the community in that kind of thing"
	Professional independence	"I was selected to participate in their teacher mentorship program as mentor"
	Personal support system	"Find one teacher that you know that you can absolutely trust and count on"
	Rural recreational interests	Not applied
Object		"I want my students to be better both educationally and emotionally then when they started with me"

Mediating artifact	Pedagogical Tools	"This year my students have completed various STEM projects and have used Project/Problem Based Learning activities"
	Culturally relevant pedagogy	Not applied
	Place-based education	"On Ag Day we're going to have all kinds of animals here"
Rules		"The Interactive Achievement and MAP data give invaluable amounts of information that I use in my daily planning"
Community		"I'm a big believer in not just teaching at the school but being part of the community, as well"
Division of labor		"Okay, who would like to be the teacher? You've got to be a good teacher"

Appendix H

Emergent Codebook

Code	Example Quote
Diversity	"Diverse as far as the population goes, in subcategories, but yes, still predominantly White"
Home-school connection	"Teacher will give her something to glue into her planner for her parents to sign that shows what she needs to work on"
Prompting question	"It looks like your animals need the same amount of space. Is that true, based on what you found?"
Relationships	"For the 180 days they spent in my classroom they felt safe, loved, encouraged, inspired, and free to be themselves"
Student autonomy	"She mentions that some groups are using different color fonts to track individuals' work. 'You guys are thinking of things that I didn't think of. Awesome'"