Opportunities and Challenges for Rural Educators: A Mixed Methods Study of Emergent Bilingual Studies in Rural Colorado

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University of Denver

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Abstract
Over nine million students in the United States attend school in rural school districts, with a growing percentage of these students identified as emergent bilingual. The purpose of this study is to examine the national emergent bilingual literacy trends and to determine how the opportunities and challenges that rural educators encounter, impact emergent bilingual education in rural schools. Utilizing a theoretical framework of culturally sustaining practices and funds of knowledge, this study uses a convergent mixed methods design to answer the following research questions: What are the national trends in emergent bilingual reading test scores? What opportunities and challenges do teachers encounter in meeting the literacy needs of emergent bilingual students in rural areas? How does the convergence of national literacy data and experiences of rural teachers provide insight for rural school districts with growing emergent bilingual populations? In a convergent design, quantitative and qualitative data are collected at the same time and do not depend upon the other data set for analysis. The first research question will be answered using secondary data from 4th and 8th grade reading NAEP tests. The second research question will be answered using a case study of a rural district in Colorado. The integration of the two data sets will provide insight and guidance for schools with growing emergent bilingual populations.

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Opportunities and Challenges for Rural Educators: A Mixed Methods Study of
Emergent Bilingual Studies in Rural Colorado

A Dissertation
Presented to
The Faculty of the Morgridge College of Education
University of Denver

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

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Andrea Johnson
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Author: Andrea Johnson
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Keywords: emergent bilingual, rural, literacy, culturally sustaining practices
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Chapter One: Introduction

Rural America includes more than 46.1 million people. The definitions of rural from the U.S. Department of Agriculture and the U.S. Census Bureau are complex and multifaceted. Since this study centers on rural schools in Colorado, the Colorado Department of Education (2019) definition of rural will be used:

A Colorado school district is determined to be rural giving consideration to the size of the district, the distance from the nearest large urban/urbanized area and having a student enrollment of 6,500 students or less. Small rural districts are those districts meeting these same criteria and having a student population of less than 1,000 students. (CDE, 2019a)

Over 9.3 million students attend rural schools, “this means that more students in the U.S. attend rural schools than in the nation’s 85 largest school districts combined [sic]” (Showalter et al., 2019, p. 1). In rural school districts across the country, opportunity gaps persist despite the attempts of educators to close these gaps (Showalter et al., 2017).

When students do not have equal access to quality education, resources, or educators—an opportunity gap results (Cook-Harvey et al., 2016). While there are numerous reasons for rural opportunity gap, one factor is that rural educators have significantly fewer opportunities to access professional development, often due to funding constraints and geographic distance from cities where professional development classes or workshops are held (Player, 2015).

Students in rural schools encounter a variety of academic issues including lower literacy rates and fewer opportunities to take advanced courses, and they are less likely
to pursue education beyond high school (Lavalley, 2018). While rural students face significant challenges, those who are also identified as emergent bilinguals have unique needs. The Department of Education (2016) identifies emergent bilingual students as English learners, who are school aged, whose native language is a language other than English, or come from an environment where a language other than English is dominant, and whose difficulties using or understanding the English language could impact their education. The complete federal definition of English learners is included in Appendix A. Emergent bilingual students often have unique learning needs related to developing English reading skills, while also obtaining language skills connected to classroom instruction and other content (Snyder et al., 2017).

Rural schools continually face challenges meeting the needs of emergent bilinguals related to federal accountability. As part of Every Student Succeeds Act (ESSA, 2015), Title III requires that students who are identified as emergent bilingual receive daily English language instruction. However, teachers in rural areas often do not have access to current and relevant trainings and their school districts do not having funding to send teachers to attend professional development related to teaching emergent bilingual students (Showalter et al., 2017). Exploring the needs of rural school districts with a growing emergent bilingual student population is necessary to identify what is essential in increasing student educational growth. This study uses a mixed methods approach to examine national literacy data trends to identify differences between urban and rural locations, as well as interview rural teachers to find the opportunities and challenges educators identify when teaching emergent bilingual students in rural schools
Context

The number of public school students in the United States identified as emergent bilingual has increased from 3.8 million in 2000 to 5.0 million students in the fall of 2018 (Irvin et al., 2021). Public schools that accept Title III federal funding must meet accountability standards to ensure students are on grade level and achieving adequate growth (Colorado Department of Education, 2020a). One of the accountability standards, stated in Every Student Succeeds Act (ESSA, 2015), requires districts to identify and measure the language growth of emergent bilingual students in the areas of reading, writing, listening, and speaking. Rural educators are increasingly concerned with how to address the educational needs of emergent bilingual students (Player, 2015).

The term emergent bilingual (EB) is purposefully used throughout this study for students who are commonly identified as English learner (EL) or English language learner (ELL). Emergent bilingual (EB) is more appropriate, as Garcia and Kleifgen (2018) explain, “The ELL/EL label has serious limitations: It devalues other languages and puts the English language in a sole position of legitimacy... ignoring the other parts of students’ language and education” (p. 4). Using emergent bilingual (EB) in this study demonstrates intentional respect for students’ cultures, customs, and the funds of knowledge that they bring to school. Throughout this study, EL/ELL will only be used when reporting state or national educational statistics since these are the current federally designated terms used in many reports.
Research Problems

The research problems at the center of this study involve analyzing the national achievement gap for EB students and the impact of the changing demographics of rural schools. Using secondary data collected for the Nations Report Card from the National Assessment of Educational Progress (NAEP, 2021), EB student reading scores were compared to their non-EB peers to identify achievement gaps and determine the differences based on student school location. Through a case study of a rural school district, data was used to understand the challenges rural schools confront while struggling to find professional development centered on EB students to close the achievement gap and provide quality education to all students.

Research Problem 1

The first research problem focuses on the nationwide reading data trends for EB students and the significant difference in their scores compared to their non-EB peers. The National Assessment of Educational Progress (NAEP) is the largest assessment of academic achievement in the United States, with tests for reading and math given in 4th and 8th grades (Department of Education, 2019). Nationally, results from the NAEP 4th grade reading test between 2007 and 2017, have shown that EB students’ scale scores are an average of 36 points below their non-EB peers. Results from the NAEP 8th grade reading test between 2007 and 2017, shows EB students’ scale scores are persistently an average of 43 points below their non-EB peers (Department of Education, 2018). Not only has the gap between EB and non-EB students continued, but the overall average reading score for all students in the country have remained the same for almost ten years.
To better understand the significance of the achievement gap between EB and non-EB students in reading, it is important to understand the literacy best practices are critical for EB students’ development of reading skills. Literacy best practices were formally reviewed by the National Reading Panel (2000) and then, with a focus on second language learners, by the National Literacy Panel (2007). It was determined that phonemic awareness, phonics, vocabulary, fluency, and reading comprehension are the foundational reading skills needed to read and write in English.

These are also the reading skills that are most commonly tested on state and national standardized tests. As part of NCLB (2002) and ESSA (2015), schools are required to meet accountability standards and show student growth in reading and mathematics for grades 3 – 8 and additional subjects in high school. In addition to the mandatory state tests, EB students are also assessed on their English language proficiency every year. Colorado uses the WIDA English language proficiency assessment, ACCESS, to assess EB students’ reading, writing, listening, and speaking (CDE, 2020b). Although the ACCESS test does assess a student’s English proficiency, this information does not necessarily translate into an equal performance on standardized tests (Solano-Flores & Li, 2008). However, teaching literacy using best practices, while continuing to show student language and achievement growth is increasingly difficult for rural educators.

**Research Problem 2**

The second research problem examines the factors that rural schools content within response to the changing demographics, growing EB student populations, and lack of resources and support. The U.S. Department of Education (Irvin et al., 2021) found that
nationwide, the EB population enrolled in schools increased from 8.1% in 2000 – 2001 to 10.2% in the fall of 2018. This growth is reflected in enrollment data for Colorado’s EB students as well. During the 2000 – 01 school year, EB students made up 8.4% of the total student enrollment for Colorado (Department of Education, 2020). By the 2020 – 21 school year, Colorado’s EB population enrolled in schools has grown to 12.9% of the total student population (CDE, 2021a).

Rural educators encounter numerous obstacles while aiming to increase their instructional capacity (Lowenhaupt & Reeves, 2017). They often are not provided options for ongoing and current professional development opportunities regarding teaching EB students, due to their location (Showalter et al., 2017). Rural educators have limited access to professional developments compared to urban educators which is connected to school funding, proximity to colleges or universities offering trainings, and lack of regional training opportunities (Player, 2015). Combining these two research problems will provide significant insight into identifying the necessary educational needs of rural school districts with growing EB populations.

**Study Purpose**

The purpose of this study is to examine the changing demographics of rural schools, explore EB literacy best practices, and examine the opportunities and challenges that rural educators encounter teaching literacy to EB students. The study used a convergent mixed methods design where the quantitative data answered research question one, the qualitative data answered research question two, and the integration of both data sets answered research question three.
Research Questions

- What are the national trends in emergent bilingual reading test scores?
- What opportunities and challenges do teachers encounter in meeting the literacy needs of emergent bilingual students in rural areas?
- How does the convergence of national literacy data and experiences of rural teachers provide insight for rural school districts with growing emergent bilingual populations?

Research Design and Methodology Overview

This study answers the research questions using a convergent mixed methods approach (Creswell & Plano Clark, 2018), which is conducted concurrently. Creswell and Plano Clark (2018) state, “the convergent design is a mixed methods design in which the researcher collects and analyses two separate databases – quantitative and qualitative – and then merges the two databases for the purpose of comparing or combining the results” (p. 68). The convergence in this study design brings together both sets of data, and then analyzing the data together in order to answer the third research question. This design allows the qualitative and quantitative data to combine and describe rural experiences that support the quantitative national data trends.

The quantitative strand begins with data collection and analysis of EB reading assessment scores from the 2019 National Assessment of Educational Progress (NAEP, 2021). The NAEP is the longest running and most comprehensive standardized test conducted in the United States (NCES, 2019). I analyzed the reading scores, for both 4th and 8th grades, to determine the growth of EB students throughout the country, which
answered research question one. Purposeful sampling of rural districts in Colorado with an identified EB population of at least 10% was used to recruit a district for a case study. The district case study is aimed at understanding literacy practices that are currently implemented as well as identifying whether or not culturally sustaining practices are being utilized. Interview data and artifacts were coded for learning descriptions, experiences, and themes. The results from the qualitative data was analyzed and interpreted to answer research question two. The integration of the quantitative and qualitative data answers the third research question. The integration, or convergence, of the data combines the national literacy EB trends, with the experiences of rural teachers, to provide insight into areas educators and districts can continue learning strategies to improve EB students literacy. These findings are applicable for current educators and have significant implications for other rural districts, and areas of future research regarding EB students.

The research plan includes using both primary and secondary data and the IRB application was submitted through the University of Denver. In addition, meeting the current COVID-19 pandemic guidelines to ensure the health and safety of all human subjects participating in this research study, continues to be updated due to the changing pandemic practices. This study is planned with the current uncertainty of the Omicron variant, rising positivity rates among children, and another school year of uncertainty in mind, which has resulted in the removal of classroom observations from the study.
Strengths and Limitations of Proposed Study

A strength of the proposed study is the use of the NAEP which has been consistently in use since 1969, three years after the passing of the Elementary and Secondary Education Act of 1965 (NCES, 2019). The NAEP is the only national assessment that compares 4th, 8th, and 12th grades across states since most states use their own testing and accountability systems. NCES (2019) states, “students who are selected represent the nation’s geographic, racial, ethnic, and socioeconomic diversity” (p. 4). This assessment allows for the exploration of larger national trends regarding EB students through reading assessment data in several grade levels. Another strength of the proposed study is the focus specifically on EB students in rural areas. The growth of the EB population in rural areas will continue, relevant research regarding this population demonstrates the need for this study (Showalter et al., 2017).

A limitation of the proposed study is the use of the NAEP, which, although a large-scale assessment, is not required for all students or public schools across the country. Since it is not required, the schools that do participate may not truly represent the student population. This is an area of concern that will be addressed in the methodology chapter. A second limitation is the inability to include more rural schools in the study. The inclusion criteria of school districts having at least 10% of their student population identified as EB, limits the inclusion of other rural districts who have a growing population, but are not yet at 10%. And a third limitation is the unknown influence and impact that the current COVID-19 pandemic will have on data collection. Hopefully the findings from this study will be useful to other rural districts.
Summary

The changing demographics of the classrooms in the United States demonstrates the need to study EB students focusing on literacy growth. Additionally, with the history of standardized testing and accountability tied to funding, researching the convergence of standardized testing with the experiences of rural educators who teach EB students is a continually evolving area of research. Understanding the challenges that rural educators must overcome trying to grow their EB instructional capacity, creates the potential for this research study to assist other rural school districts with growing EB populations.
Chapter Two: Review of Literature

Enrollment of EB students in K-12 schools grew by over 1,000,000 between 2000 and 2018 (Department of Education, 2021). EB students score significantly behind both former EB students and the rest of the student population on state reading tests (Department of Education, 2021). During the 2017-18 school year, EB students score 26.5% lower on state reading tests than the total student population, and between 2-6% lower than former EB students (Department of Education, 2021). In addition to the nationwide growth, rural areas throughout the United States are gradually becoming more diverse and the number of students that qualify for English language services is increasing (Lavalley, 2018; Showalter et al., 2017). In 2012-13, 3.5% of public school students in rural areas were identified as EB (Kena et al., 2015) compared to 4.1% of identified students in rural areas in 2017 (Hussar et al., 2020). This growth is comparable to the EB public school growth in cities with 14% identified in 2012-13 (Kena et al., 2015) and 14.7% identified in 2017 (Hussar et al., 2020). Despite similar growth patterns, rural school districts receive significantly less funding than urban districts, which impacts rural schools ability to receive updated EB training and attract highly qualified teachers (Lavalley, 2018).

Rural districts also face challenges related to the ESSA (2015) changes, most notably to the definitions of rural used for the Rural Education Achievement Program (REAP), which excludes districts that have even one school located in a non-rural location.
This change, in addition to changes related to rural Title I, prevent rural districts from receiving government funding for schools (Lavalley, 2018). Additionally, Title III requires that students who are identified as EB receive daily English language instruction. However, teachers in rural areas often do not have access to current and relevant trainings and the school districts do not having funding to send teacher to attend professional development activities related to teaching EB students (Showalter et al., 2017). This chapter presents the theoretical framework that guides is research. Additionally, this chapter presents a literature review that examines what is known nationally regarding reading best practices and how this relates to the present relevant research about best practices for EB students’ literacy development. The National Literacy Panel’s 2006 seminal report (August & Shanahan) focusing on literacy best practices for EB students is a key point in this literature review.

**Theoretical Framework**

The theoretical framework guiding this study incorporates EB students’ family traditions, culture, language, and ways of knowing. This assets based framework, demonstrated in Figure 1, incorporates Culturally Sustaining Pedagogy (Paris, 2012) and Funds of Knowledge.
Funds of Knowledge (Gonzalez et al., 2005; Moll et al., 1992). The theoretical framework of Culturally Sustaining Pedagogy (Paris & Alim, 2014) includes the related past research and explains that “CSP seeks to perpetuate and foster – to sustain – linguistic, literate, and cultural pluralism as part of the democratic project of schooling and as needed response to demographic and social change” (p. 88). Additionally, Paris (2012) asserts that CSP works “in sustaining the cultural and linguistic competence of their communities while simultaneously offering access to dominant cultural competence” (p. 95). Thus, Culturally Sustaining Pedagogy establishes the importance of cultural pluralism as part of American education (Paris, 2012). This pluralism specifically supports multilingualism and multiculturalism practices for teachers and students (Paris & Alim, 2014).

Funds of Knowledge (Gonzalez et al., 2005; Moll et al., 1992) frames the knowledge acquired outside of school as a wealth of knowledge and experience that adds to their learning, which is different than a student’s culture. In addition, Funds of Knowledge suggests offering alternative opportunities for students to demonstrate their understanding, ways to reconsider how students are taught, and consider the importance of social relationships on the learning process (Gonzalez et al., 2005). Moll et al. (1992) demonstrated the variety and value of different funds of knowledge that are learned at home including, agriculture, mining, material and scientific knowledge, economics, medicine, management, and religion.

Applying both Culturally Sustaining Pedagogy and Funds of Knowledge to literacy extends the knowledge students hold and demonstrates the value of all learning
experiences in a formal classroom environment (Paris, 2012). Louie and Sierschynski (2020) states that:

In the context of literacy instruction, a culturally sustaining pedagogical framework for literacy captures four elements: understanding families’ values and practice in language and literacy, seeking family input on reading materials and instructional strategies, selecting reading materials that nourish learners’ cultural and linguistic competence in their heritage and in the dominant communities, and collaborating and problem solving with families on projects integrating multilingual and multicultural literacy practices for all students. (p. 159)

Louie and Sierschynski’s (2020) research, which centered on examining picture books in Arabic and English, analyzed the social and cultural values conveyed through these texts. Ervin (2021) demonstrated how English teachers can still incorporate culturally sustaining pedagogy with district required texts by utilizing counter storytelling, pairing texts, and student discussions. McNeill (2021) found that focusing on connections between texts and students’ funds of knowledge improved their English proficiency and testing skills. Teachers provide students with opportunities to connect their knowledge with classroom experiences, personalizing content, curriculum, and activities (Moll et al., 1992). These directly relate to EB students since in addition to speaking another language, they are able to use their home language as a resource for learning a second or third language in school.

The theoretical framework guides the literature review and research design. Utilizing both Funds of Knowledge and Culturally Sustaining Pedagogy with EB students provides an assets based educational foundation, establishes the value of the family and community wisdom and knowledge (Gonzalez et al., 2005; Moll et al., 1992; Paris, 2012; Paris & Alim, 2014). Developing literacy lessons that incorporate the knowledge and
experiences of EB students and their families, demonstrates that the dominant culture is not the only source of knowledge. Allowing students to access their primary or home language when reading, writing, listening, or speaking, provides students with the basis to build their new knowledge related to their prior experiences.

**Literature Search Procedures**

The literature review for this study initially started as a single search, however, with a variety of different combinations of search terms, I continually yielded zero literature results. After consulting with a research librarian at the university, she suggested separating the searches with the first focusing on EB students and literacy practices and the second focusing more broadly on EB students in rural education. The first literature search focuses on peer reviewed research studies involving reading best practices with EB students. The specific reading practices of vocabulary, fluency, reading comprehension, and phonics are intentional and based both on the National Reading Panel (2000) and the National Literacy Panel reports (August & Shanahan, 2006). The only reading practice not included in the literature review search is phonemic awareness due to this not being taught in 4th – 8th grades, that is the focus of this study. The second literature search identifies peer reviewed research studies in rural schools involving educators of EB students. This search was intentionally broad, it did not have a content focus, since there are few studies involving rural and EB students in any content area. To locate these studies, I conducted a literature search of ERIC and PsycINFO, followed by an ancestral review of references.
Inclusion Criteria

Starting the literature review with the year 2010 is based on the seminal publication of August and Shanahan’s (2006) Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language Minority Children and Youth. The use of 2010 rather than 2006, is to ensure the published studies relate to August and Shanahan’s (2006) findings and specifically connect to the recommendations from the National Literacy Panel. The variety of terms used to identify EB students in the inclusion criteria includes the terminology that was appropriate and in use in 2010 and subsequent years.

- Participants of the study were identified as emergent bilingual (EB), English language learners (ELL), English as a second language (ESL), or limited English proficiency
- Participants were in grades 4-8
- Literacy studies focused specifically on vocabulary, phonics, fluency, and reading comprehension. Literacy studies including terms: culturally responsive, culturally sustaining, or funds of knowledge
- Studies involving rural educator research pertaining to emergent bilingual students and culturally responsive and culturally sustaining practices
- Studies were published in peer-reviewed journals between 2010 and March 2021, in English and in the United States

An electronic database search of ERIC and PsycINFO from January 2010 through March 2021 included a combination of the following search terms: emergent bilingual, EB, English language learners, ELL, English as a second language, ESL, English learner,
The literature review is separated into two major themes, emergent bilingual literacy practices and rural educational needs. The EB literacy practices focuses mainly on studies that researched vocabulary and reading comprehension. The 11 studies identified and included for literacy practices were all conducted in urban schools with large EB student populations. The five studies included for the rural education literature examine overall EB teacher professional development needs and identifies challenges rural school districts encounter meeting these needs. I did not find any study that combined EB literacy and rural education together, which is why separate literature reviews were conducted. The literature identifies a gap between EB literacy practices and EB education in rural areas.
Emergent Bilingual Literacy

Literacy best practices are critical for EB students’ development of literacy. Literacy best practices, which were formally reviewed by the National Reading Panel (2000), determined that phonemic awareness, phonics, vocabulary, fluency, and reading comprehension are the foundational reading skills needed to read and write in English. The National Reading Panel, however, failed to address the needs of EB students. As a result, the National Literacy Panel (2007) conducted further research focused on understanding the complexity of the reading process, individual differences, development, and the context in which second-language learners develop reading (August & Shanahan, 2006). Overall, the National Literacy Panel report supported the findings of the National Reading Panel and explained the complexities of learning to read and write in English as a second language (August & Shanahan, 2006). Based on the findings of the two panels, the key characteristics of an effective literacy program consist of incorporating phonemic awareness, phonics, vocabulary, fluency, and reading comprehension. Literacy, and specifically the ability to read on grade level, is important to the educational success and ties directly to high school graduation (Hernandez, 2021).

The National Literacy Panel’s (August & Shanahan, 2006) findings on literacy best practices for EB students confirmed and supported the findings of the National Reading Panel (2000) including teaching phonemic awareness, phonics, fluency, vocabulary, and text comprehension. Although there is much criticism of the National Reading Panel report (Cooper, 2005; Krashen, 2001; Krashen, 2005; Stuebing et al., 2008), there is not a similar response to the National Literacy Panel. Literacy research focusing on phonemic
awareness, phonics, and fluency are mostly conducted in early elementary, with vocabulary and comprehension a greater focus in upper elementary and beyond. The focus of this literature review is specifically on 4th through 8th grade literacy practices, which centers around building vocabulary and increasing reading comprehension for EB students, with the 11 studies found in Table 1.

Table 1: Included Emergent Bilingual Literacy Literature

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Grade</th>
<th>Reading Strategy Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mancilla-Martinez</td>
<td>2010</td>
<td>5th</td>
<td>Vocabulary Intervention</td>
</tr>
<tr>
<td>Lesaux, Kieffer, Faller, &amp; Kelley</td>
<td>2010</td>
<td>6th</td>
<td>Vocabulary Intervention</td>
</tr>
<tr>
<td>Lesaux, Kieffer, Kelley, &amp; Harris</td>
<td>2014</td>
<td>6th</td>
<td>Vocabulary Intervention</td>
</tr>
<tr>
<td>Kieffer &amp; Lesaux</td>
<td>2012a</td>
<td>4th–7th</td>
<td>Morphological Awareness and Vocabulary Assessment</td>
</tr>
<tr>
<td>Kieffer &amp; Lesaux</td>
<td>2012b</td>
<td>6th</td>
<td>Vocabulary Assessment</td>
</tr>
<tr>
<td>Lesaux &amp; Kieffer</td>
<td>2010</td>
<td>6th</td>
<td>Reading Comprehension Assessment</td>
</tr>
<tr>
<td>Mancilla-Martinez, Kieffer, Biancarosa, Christodoulou, &amp; Snow</td>
<td>2011</td>
<td>5th–7th</td>
<td>Reading Comprehension Assessment</td>
</tr>
<tr>
<td>Carlo, Barr, August, Calderon, &amp; Artizi</td>
<td>2014</td>
<td>5th–6th</td>
<td>Reading Comprehension Assessment</td>
</tr>
<tr>
<td>Phillips Galloway &amp; Uccelli</td>
<td>2018</td>
<td>6th–7th</td>
<td>Reading Comprehension Assessment</td>
</tr>
<tr>
<td>Ebe</td>
<td>2012</td>
<td>7th</td>
<td>Reading Comprehension; Culturally Relevant Text</td>
</tr>
<tr>
<td>Kelley, Siwatu, Tost, &amp; Martinez</td>
<td>2015</td>
<td>7th</td>
<td>Reading Comprehension; Culturally Relevant Text</td>
</tr>
</tbody>
</table>
Note. This table demonstrates the included emergent bilingual literacy studies.

**Vocabulary**

Intentional vocabulary intervention focusing on building academic vocabulary, identifying vocabulary across content areas, and using vocabulary to improve reading comprehension and writing skills is proven to be effective for EB students (Lesaux et al., 2010; Lesaux et al., 2014; Mancilla-Martinez, 2010). Vocabulary interventions for EB students ranged from 15 minutes to 45 minutes a day and focused anywhere between 24-70 target words over an average of 10 weeks (Lesaux et al., 2010; Lesaux et al., 2014; Mancilla-Martinez, 2010). Each of these vocabulary intervention studies used Coxhead’s (2000) Academic Word List, which includes 570 word families found in a variety of content specific academic texts, which improves EB students’ academic vocabulary (Coxhead, 2000; Lesaux et al., 2010; Lesaux et al., 2014; Mancilla-Martinez, 2010).

Vocabulary interventions centering on the use of a piece of text as the initial exposure to the targeted vocabulary word followed by structured word analysis in context, identifying additional meanings of the word, and morphological analysis, improves student vocabulary understanding and recognition (Lesaux et al., 2010; Lesaux et al., 2014). Utilizing whole-group, small-group, and independent vocabulary activities provided opportunities for students to work with the vocabulary on their reading, writing, listening, and speaking skills (Lesaux et al., 2010; Lesaux et al., 2014).

Vocabulary intervention using a text as the presentation of the vocabulary words, identifying the word used in other content areas, and building vocabulary through
discussion (Mancilla-Martinez, 2010). Talking with peers and using target vocabulary words in a discussion, allows students to practice their comprehension skills through dialogue (Mancilla-Martinez, 2010). Using targeted vocabulary while writing, including correct use related to the subject content strengthen student vocabulary across content areas (Lesaux et al., 2014; Mancilla-Martinez, 2010). Mancilla-Martinez’s (2010) intervention analysis focused on vocabulary growth including a multiple choice vocabulary test, a vocabulary self-check, and persuasive essays in which the students used the target vocabulary to answer prompts.

Analysis of the vocabulary interventions used both standardized measures and researcher developed measures (Lesaux et al., 2010; Lesaux et al., 2014; Mancilla-Martinez, 2010). Studies focusing on vocabulary analysis without interventions also used both standardized and researcher developed measures (Kieffer & Lesaux, 2012a; Kieffer & Lesaux, 2012b). These measures included assessing vocabulary knowledge, synonyms, academic synonyms, semantic associations, multiple meaning words, word association and context clues, and morphological awareness (Kieffer & Lesaux, 2012a; Kieffer & Lesaux, 2012b; Lesaux et al., 2010; Lesaux et al., 2014). Including comprehension questions and brief writing samples were also included as part of the vocabulary analysis (Lesaux et al., 2010; Lesaux et al., 2014). Increased overall vocabulary and specifically academic vocabulary positively impacts student’s reading comprehension (Lesaux et al., 2010; Lesaux & Kieffer, 2010). These various vocabulary studies demonstrate the need for specific vocabulary intervention for students who are identified as EB to improve
overall reading abilities (Kieffer & Lesaux, 2012a; Kieffer & Lesaux, 2012b; Lesaux et al., 2010; Lesaux et al., 2014; Mancilla-Martinez, 2010).

Educators focusing on targeted vocabulary instruction or improving general academic vocabulary for EB students can incorporate both funds of knowledge and a culturally sustaining pedagogy (Gonzalez et al., 2005; Moll et al., 1992; Paris, 2012; Paris & Alim, 2014). Jeong (2021) states that “from a CSP perspective, equity and access can be accomplished by centering the linguistic and cultural practices of the minoritized students in the schooling process” (p. 82). For vocabulary instruction this includes students connecting the vocabulary word to a word in their home language and having students speak in their home language with peers to better understand what the word means in the context of the subject or reading. By incorporating this, educators demonstrate cultural and linguistic flexibility, valuing the community from which the students belong (Paris & Alim, 2014).

**Reading Comprehension**

In addition to vocabulary instruction, increasing EB students reading comprehension improves their overall literacy skills. Unlike the literature identified for vocabulary, most of the studies regarding reading comprehension do not involve any interventions (Carlo et al., 2014; Kelly et al., 2015; Mancilla-Martinez et al., 2011; Phillips Galloway & Uccelli, 2019). Several studies analyzed reading comprehension, without interventions, over a period of several school years (Carlo et al., 2014; Mancilla-Martinez et al., 2011; Phillips Galloway & Uccelli, 2019).
Reading comprehension measures used to analyze comprehension and reading efficiency included standardized assessments such as Gates-MacGinitie Reading Comprehension Test, Woodcock Language Proficiency Battery-Revised Word Attack subtest, GRADE: group reading assessment and diagnostic evaluation, Global Integrated Scenario-based Assessment (GISA), Core Academic Language Skills-Instrument (CALS-I), and the Test of word Reading Efficiency (Carlo et al., 2014; Lesaux & Kieffer, 2010; Mancilla-Martinez et al., 2011; Phillips Galloway & Uccelli, 2019). Researcher developed reading comprehension subtests often included reading vocabulary, sentence comprehension, listening comprehension, and passage comprehension and fluency (Carlo et al., 2014; Kelley et al., 2015; Lesaux & Kieffer, 2010; Mancilla-Martinez et al., 2011).

These studies found that reading comprehension is greatly impacted by low language and vocabulary skills (Lesaux & Kieffer, 2010; Phillips Galloway & Uccelli, 2019). EB students leaving elementary schools with initially low levels of reading comprehension continue to develop comprehension skills, but at significantly slower rates in middle school (Mancilla-Martinez et al., 2011; Phillips Galloway & Uccelli, 2019). EB students with high initial levels of Spanish reading comprehension developed English reading comprehension skills quicker (Carlo et al., 2014). Continual growth of academic language skills strongly contributes to the growth of reading comprehension skills (Lesaux & Kieffer, 2010; Phillips Galloway & Uccelli, 2019). The focus of the four reading comprehension studies also included sub-focuses examining the impact of other factors on student reading comprehension. These factors included the impact of low-SES,
influence of home language, and understanding of general academic language (Carlo et al., 2014; Kelley et al., 2015; Lesaux & Kieffer, 2010; Mancilla-Martinez et al., 2011).

Two reading comprehension studies differed from the previously stated studies by focusing on culturally relevant tasks and culturally relevant texts (Ebe, 2012; Kelley et al., 2015). Reading comprehension improved significantly and students had fewer miscues when reading culturally relevant texts (Ebe, 2012; Kelley et al., 2015). State reading test scores also shows that students perform better on a passage and questions that are culturally similar to themselves (Kelly et al., 2015). These studies also demonstrate how using a culturally sustaining pedagogy increases students’ overall reading proficiency (Ebe, 2012; Kelley et al., 2015). Educators focusing on reading comprehension can incorporate culturally relevant texts, but they can also use nontraditional texts from EB students’ communities. Reading comprehension is not limited to stories or informational texts, by including nontraditional texts into the classroom, EB students can access their funds of knowledge.

The reading framework used on the 2019 NAEP reading test focuses on vocabulary and reading comprehension using a variety of text genres, and “include[s] items that measure students’ ability to apply their knowledge of vocabulary as an aid in their comprehension process” (National Assessment Governing Board, 2019, p. 6). Intentionally focusing on developing EB students vocabulary, including academic vocabulary and general/conversational vocabulary, will greatly increase their language proficiency. Assessing vocabulary is supported by the vocabulary research of Mancilla-Martinez (2010), Lesaux et al. (2010), Lesaux et al. (2014), Kieffer and Lesaux (2012a),
and Kieffer and Lesaux (2012b). Improved vocabulary directly ties to students’ reading comprehension, which also improves with the purposeful use of culturally relevant texts.

The National Assessment Governing Board (2019) states, “to accommodate these differences, passages will span diverse areas and topics and will be as engaging as possible to the full range of students in the grades assessed” (p. 4). The use of diverse text and culturally relevant text is supported by Ebe (2012) and Kelley et al. (2015) with additional reading comprehension research supported by Carlo et al. (2014), Lesaux and Kieffer (2010), Mancilla-Martinez et al. (2011), and Phillips Galloway and Uccelli (2018). Knowledge of the importance and relationship between vocabulary and reading comprehension are crucial to the literary success of EB students, which needs to be explicitly taught to rural educators.

**Rural Educational Needs**

As previously stated, the EB literacy studies all occurred in urban schools, with no identified study specifically related to EB literacy conducted in rural areas. With the total student population of EB students growing, and the increasing EB student population in rural areas, this is a significant topic for future researchers (Irvin et al., 2021; Kena et al., 2015). The included literature, found in Table 2, explores the opportunities and

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Rural Location</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodriguez, Manner, &amp;</td>
<td>2010</td>
<td>North Carolina</td>
<td>Perceptions of EB Students and Impact on Learning</td>
</tr>
</tbody>
</table>
challenges researchers identified regarding teaching EB students in rural school districts and will support answering the second research question. Unlike the EB literacy studies, there are relatively few studies regarding EB and teacher needs in rural school districts.

**Certification**

Rural schools nationwide have seen dramatic changes to the student population from 2000 – 2015 (Johnson et al., 2018). Despite the total rural student enrollment decreasing, the rural EB enrollment, rural students identified as economically disadvantaged, and rural student minority enrollments have increased over 40% in the last 15 years (Johnson et al., 2018). The remote locations of rural districts prevent educators from pursuing ESL/CLD certification from colleges or universities which are more commonly located in urban and suburban areas (Hansen-Thomas et al., 2016; Lee & Hawkins, 2015).

Teachers with ESL/CLD or bilingual certifications and those with certification in foreign languages are often isolated and marginalized from the rest of the teachers (Fogle & Moser, 2017; Hawkins & Lee, 2015). Commonly, these teachers are the only

| Lee & Hawkins | 2015 Wisconsin | Educational Policies Influencing EB Educational Needs |
| Hansen-Thomas, Richins, Kakkar, & Okeyo | 2016 Texas | Teacher Perceptions of EB Challenges and Professional Development Needs |
| Fogle & Moser | 2017 Mississippi | EB Professional Development and Teacher Identity |
| Johnson, Ohlson, & Shope | 2018 Nationwide | EB Special Education Programing |

*Note.* This table demonstrates the emergent bilingual rural education studies only.
advocates for the needs of EB students in the school and must combat deficit thinking with other teachers (Fogle & Moser, 2017; Lee & Hawkins, 2015). Utilizing the strengths of rural schools, there is an opportunity for schools to correct misconceptions regarding EB students and build a resilient and inclusive environment for all teachers and students (Fogle & Moser, 2017; Johnson et al., 2018).

**Funding**

Rural districts often encounter obstacles related to funding, hiring and retaining qualified teachers, transportation, and ensuring that staff are utilizing culturally sustaining practices (Johnson et al., 2018; Lee & Hawkins, 2015). There is often a lack of state funding to purchase resources and materials that support EB students in the classrooms or fund a full-time EB teacher (Hansen-Thomas et al., 2016; Johnson et al., 2018). Rural districts also lack funding to hire substitutes in order to send teachers to professional developments in more urban areas (Hansen-Thomas et al., 2016; Johnson et al., 2018; Lee & Hawkins, 2015).

**Professional Development**

The increase of EB students in rural school districts has shown the need for schools to receive quality professional development (Fogle & Moser, 2017; Hansen-Thomas et al., 2016; Johnson et al., 2018; Lee & Hawkins, 2015; Rodriguez et al., 2010). Frequently, EB trainings that are offered by the state’s department of education, are heavily based upon the needs and resources of urban/suburban schools and are not applicable to rural schools who confront different challenges (Hansen-Thomas et al., 2016). Professional development and teacher education related specifically to rural education and the needs
of the growing EB student population is necessary (Fogle & Moser, 2017; Hansen-Thomas et al., 2016; Rodriguez et al., 2010).

In addition to general EB teaching best practices, there is a need for additional content specific instructional strategies, or content specific examples of how to incorporate these practices into general education classrooms (Lee & Hawkins, 2015; Rodriguez et al., 2010). Teachers who have taken additional college courses regarding EB students were more effective at utilizing and implementing strategies that support EB students in their classrooms (Hansen-Thomas et al., 2016). Continual professional development opportunities involving updated best practices for teachers who are certified or have previously attended trainings for EB students, is often geographically hard to find (Fogle & Moser, 2017; Hansen-Thomas et al., 2016). Unlike the previously identified literacy needs, research regarding EB students in rural school districts is a topic that must be a priority for other researchers. The identified rural studies add to the knowledge guiding the teachers’ interview questions that contribute to answering the second research question.

**Conclusion**

Overall, this literature review demonstrates the importance of vocabulary and reading comprehension regarding developing EB literacy skills. The literature establishes that rural school districts and teachers face more challenges related to EB population growth than they have faced historically including funding, recruiting and retaining certified teachers, and access to resources and professional developments due to their secluded locations. In addition, the literature also demonstrates the gap in culturally sustaining
pedagogy and funds of knowledge practices in rural areas. The literature also clearly demonstrates a gap in the literature regarding EB literacy practices and professional development opportunities in rural areas. My research study will specifically address this gap, by interviewing reading teachers regarding their current EB literacy practices and knowledge and identify the opportunities and challenges teachers encounter related to EB students in rural school districts.

Areas of Future Research

Although there has been research regarding EB students in both special education and gifted and talented programs in rural areas, there are numerous opportunities for future research regarding rural EB students in other content areas. With the growing EB population, all rural educators need to learn culturally sustaining strategies for teaching diverse students. This study would also benefit from being repeated in an additional state or numerous states with a growing rural EB population, to identify the unique needs of rural school districts more completely. There are numerous opportunities for future and further research related to EB students in rural areas, and I look forward to continuing to contribute to this growing field of knowledge.
Chapter Three: Methodology

The total rural student population in Colorado is less than 140,000 students with rural districts either identified as rural or small rural (CDE, 2021a). Districts that have a total student population of less than 6,500 students are considered rural and small rural districts have less than 1,000 students (CDE, 2019a). Comparing EB and non-EB literacy scores to establish a national literacy trend, as well as analyzing rural teacher literacy practices allows school districts to identify practices that need to be changed or improved to close the opportunity gap for EB students. Examining the ways in which teachers meet student EB literacy needs also benefits rural school districts with growing EB populations. This chapter explains the research methodology used in this study, a convergent mixed methods design using a case study.

Research Design

The intent of using mixed methods for this research study is to demonstrate that using quantitative data and qualitative data provides a deeper understanding of how the experiences of rural schools fit into the larger context of U.S. education. The use of a mixed methods approach allows large scale quantitative data to demonstrate national education trends and then utilizes qualitative data to explain these trends within small rural school districts. The QUAN + QUAL = converge results of the mixed method study will add value to the conversation regarding EB students both on a national scale and providing a deeper understanding of education in rural districts.
This study uses a case study design with a convergent mixed methods approach, which allows quantitative and qualitative data to be collected independently and concurrently (Creswell & Plano Clark, 2018). In a convergent design, the separate quantitative and qualitative data are merged and analyzed collaboratively to answer the third research question. In this design, the separate data collection and analysis demonstrates the equal importance of both quantitative and qualitative data (Creswell & Plano Clark, 2018). Quantitative data answers research question one using the National Assessment of Educational Progress (NAEP) reading test scores for EB students in 4th and 8th grades. Qualitative data answers research question two, using a case study of one rural school district with an identified EB student population over 10% of the total student population. Research on convergent mixed methods studies provides insight into how this research design is implemented in educational settings (Bustamante, 2019; Kerrigan, 2014). For example, Bustamante (2019) utilized a convergent mixed methods case study involving teachers of Spanish in middle and high schools in the United States. Kerrigan (2014) applied a convergent mixed method design to understand community college organizational capacity in two states in the United States.

The procedural diagram, Figure 2, details the overall flow of the convergent mixed methods research design (Plano Clark & Sanders, 2015). Figure 2 demonstrates the convergent research design process with both the quantitative and qualitative strand procedures, followed by the integration of the two strands. The data integration compares the quantitative and qualitative results and is then demonstrated in joint display. The integration interpretation answers the third research question and provides insight to other
Figure 2: Procedural Diagram of Convergent Mixed Methods Design

**Quantitative Research Question:**
- What are the national trends in emergent bilingual reading test scores?

**Procedures:**
- Obtain public data from the NAEP 2019 Reading test for 4th and 8th grades
- Obtain previous NAEP results for 4th and 8th grades

**Quantitative Data Collection**

**Product:**
- NAEP test scores

**Procedures:**
- Analyze NAEP reading scores between EB and non-EB
- Use NAEP Data Explorer to run regression analysis

**Quantitative Data Analysis**

**Products:**
- Regression analysis between dependent variable and multiple independent variables

**Integration - merge quantitative and qualitative results and compare**

**Mixed Methods Research Question:**
- How does the convergence of national literacy data and experiences of rural teachers provide insight for rural school districts with growing emergent bilingual populations?

**Procedures:**
- Interpretation and explanation of the quantitative and qualitative results

**Interpretation**

**Products:**
- Implications for practice
- Areas for future research

**Qualitative Research Question:**
- What opportunities and challenges do teachers encounter in meeting the literacy needs of emergent bilingual students in rural areas?

**Procedures:**
- Select rural school districts that have at least 10% of students identified as EB
- Conduct semi-structured interviews
- Collect documentation and artifacts

**Qualitative Data Collection**

**Products:**
- Transcripts of interviews
- Public records: school board meeting decisions; CMAS scores; teacher trainings

**Qualitative Data Analysis**

**Products:**
- Major thematic categories
- Emergent concepts

**Integration - merge quantitative and qualitative results and compare**
rural school districts with growing EB populations. The procedures and products for each strand of the study are clearly outlined and are described in greater detail later in this chapter. The research questions for this study are:

- What are the national trends in emergent bilingual reading test scores?
- What opportunities and challenges do teachers encounter in meeting the literacy needs of emergent bilingual students in rural areas?
- How does the convergence of national literacy data and experiences of rural teachers provide insight for rural school districts with growing emergent bilingual populations?

**Quantitative Strand**

The quantitative strand aims to answer the research question: What are the national trends in emergent bilingual reading test scores? The data for this strand comes from the National Assessment of Educational Progress (NAEP), which is the largest ongoing and extensively representative assessment in the United States (NAEP, 2021). The NAEP has been in use since 1969, which allows researchers to examine larger educational trends. The data is available at national, regional, and state levels, with the ability to look at specific subgroups at each level (National Assessment Governing Board, 2019). The data is available for secondary analysis for researchers through the National Center for Education Statistics (NCES, 2021). The public data for this study is accessible through the NAEP Data Explorer (NDE) and I did not apply to use the restricted-use data sets.
Data Source

The National Center for Education Statistics (NCES, 2021) creates, administers, and reports the scores from the NAEP assessments. NCES (2021) states, “the NAEP is at the forefront in providing valid and reliable national assessment data on student progress” (para. 2). National identification of a representative sample of the student population is a multi-step process. Initially, the NAEP uses PSUs, primary sampling units, which are identified through census counties and then categorized based on geographic region and demographic factors (NAEP, 2021). NAEP then identifies “ten percent of these PSUs are selected using probability proportional to sample size, meaning that larger PSUs have a greater likelihood of selection, resulting in a sample of 95 to 100 PSUs” (NAEP, 2021, Sampling for NAEP Assessments section). The NAEP results are used by schools and policymakers throughout the country assess progress and plan for improvements. The NAEP “also provides states with a benchmark to target important efforts that raise the bar for student achievement and ensure that students have equal opportunities to succeed” (NCES, 2021, p. 3). The data includes public and private schools from every state, and growth for specific student groups such as students with disabilities and EB students.

Participants

The schools in the identified PSUs go through a selection process to ensure there is equal representation of school size and racial/ethnic populations. Students within selected schools are randomly selected for 4th, 8th, and 12th grade tests and then assigned a single subject area assessment. Students, whom I refer to as EB, are identified as English language learners (ELL) for the NAEP reading assessment. The identification of the
students ELL status is based on how long the student has been in the U.S., their school classification as English language learner or limited English proficient (LEP), and the students English language proficiency assessment required under ESSA Title III (National Assessment Governing Board, 2014). The students identified on NAEP test results as ELL, are the target sample population for this study and will subsequently be referred to as EB.

For example, in 2019 a total of 150,600 4th grade students and 143,100 8th grade students participated in the NAEP reading assessment (Nation’s Report Card, 2021). The 2019 reading assessments were administered from January to March for both 4th and 8th grade students. The assessment scores are reported from 0 to 500 on the NAEP reading scale and identified based on the three different achievement levels used by the NAEP. The NAEP reading assessment includes literary and informational texts, followed by comprehension and vocabulary questions (National Assessment Governing Board, 2019, p. x). The reading scores for students identified as EB is compared to non-EB students in both 4th and 8th grades. The NAEP data is disaggregated based on location, including city, suburb, town, or rural; student factors, including status as English learner, race/ethnicity, gender; and school factors, including percent receiving ESL instruction, percent enrollment identified as LEP, if the school receives Title I funding.

Data Analysis

Using the NAEP Data Explorer (NDE), I analyzed 4th and 8th grade NAEP reading scores from 2003, 2007, 2015, and 2019. This data is not available at a student or school level and all identifiable information is removed. The dependent variable is the NAEP
reading scale score, which is a continuous variable on a scale of 0–500 (NAEP, 2021). A number of different variable options are the independent variables; however, due to the limitations of the NAEP Data Explorer, they cannot all be used at the same time. The independent variables, in Appendix B Table 11, are a combination of the following categorical and nominal variables: ELL status (two categories), Race/Ethnicity (six categories), Gender (two categories), Location (four categories), Percent receiving ESL instruction (eight categories), Percent enrollment identified as LEP (eight categories), and Receive Title I funding (three categories). Appendix A contains the NAEP definitions of the locations of city, suburb, town, and rural, which are used in the analysis.

For this study, I used the 4th and 8th grade NAEP reading assessment data from 2003, 2007, 2015, and 2019 to run as either simple or multiple linear regression. I used simple linear regression to examine the NAEP scores using the EB and non-EB student identification variable. Using this regression data, I am able to determine if the relationship between EB identification and non-EB identification is statistically significant. I then used multiple linear regression to examine the total 4th and 8th grade sample populations and the relationships between the four different school locations. Using this regression data, I am able to determine if the relationships between EB students NAEP reading test scores and their school location is statistically significantly different from their non-EB peers in the same location. This quantitative data is also used to answer research question three during the integration phase of the mixed methods design.
Qualitative Strand

The qualitative strand aims to answer the second research question: What opportunities and challenges do teachers encounter in meeting the literacy needs of emergent bilingual students in rural areas? Since this study uses a convergent mixed methods approach, the quantitative data has no influence or impact on the qualitative strand. The data from this strand is from a case study of a rural school district in Colorado which has identified at least 10% of their student population as EB. I originally planned to conduct observations of classrooms, but these were removed due to the increasing variant contagiousness impacting children during the COVID pandemic.

According to Yin (2018), “a case study is an empirical method that investigates a contemporary phenomenon (the ‘case’) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident” (p. 15). In this study, the phenomenon is understanding the opportunities and challenges that are presented in rural school districts, when teachers seek to improve their practice and meet the needs of diverse learners, including EB students. Additionally, the case study is classified as an instrumental case study (Stake, 1995) which Mills et al. (2010) describes as, “the study of a case (e.g., person, specific group, occupation, department, organization) to provide insight into a particular issue, redraw generalizations, or build theory. In instrumental case research the case facilitates understanding of something else” (p. 474). I will use the data collected from the case study to provide further examples, details, and information regarding EB students in rural areas that will be helpful to other rural districts with growing EB student populations.
Site Selection

This strand is bound by the location of the participating school district and as a result, I used purposeful sampling. I used the definition of rural districts established by CDE (2019a), which can be found in Appendix A. Colorado has 178 school districts with 149 of those being classified as rural and small rural districts (CDE, 2021a). Although the total student enrollment for K-12 students in Colorado is 883,199, only 139,004 students live in the 149 identified rural districts, consisting of 16% of the state student population (CDE, 2021a). From the 149 rural districts, I used a purposeful sample to identify districts that have 10% or more of their population identified as EB by the October 2020 attendance snapshot (CDE, 2021c). Using the CDE Data Pipeline Attendance Snapshots, I used the enrollment information from 2020 to identify 38 rural school districts have 10% of their population as EB students (CDE, 2021b). I confirmed the districts EB population using the CDE District Dashboard (CDE, 2021c). The districts shown in Table 3 include each rural district’s total student population and what percent of the population is identified as EB. The districts in Table 3 represent both rural and small rural

Table 3: Colorado Rural School Districts with Over 10% EB

<table>
<thead>
<tr>
<th>Districts</th>
<th>Student Population</th>
<th>EB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montrose County RE-1J</td>
<td>5587</td>
<td>15.2%</td>
</tr>
<tr>
<td>Roaring Fork RE-1</td>
<td>5127</td>
<td>38.3%</td>
</tr>
<tr>
<td>Garfield RE-2</td>
<td>4294</td>
<td>30.9%</td>
</tr>
<tr>
<td>Summit RE-1</td>
<td>3324</td>
<td>29.9%</td>
</tr>
<tr>
<td>Fort Morgan RE-3</td>
<td>3138</td>
<td>33.4%</td>
</tr>
<tr>
<td>Weld County SD RE-3J</td>
<td>2433</td>
<td>20.4%</td>
</tr>
<tr>
<td>Alamosa RE-11J</td>
<td>2176</td>
<td>15.8%</td>
</tr>
<tr>
<td>Weld RE-8 Schools</td>
<td>2124</td>
<td>27.2%</td>
</tr>
<tr>
<td>Moffat County RE: No 1</td>
<td>1926</td>
<td>11.5%</td>
</tr>
<tr>
<td>Weld County RE-1</td>
<td>1792</td>
<td>21.1%</td>
</tr>
</tbody>
</table>

38
Brush RE-2(J) 1237 17.1%
Bennett 29J 1132 18.4%
Platte Valley RE-7 1030 10.1%
Garfield 16 1019 22.9%
Strasburg 31J 1001 12.2%
Estes Park R-3 981 17.6%
Ellicott 22 942 18.6%
Lake County R-1 935 38.5%
Ault-Highlands RE-9 901 13.9%
Telluride R-1 867 15.5%
Yuma 1 844 35.2%
Wray RD-2 697 18.5%
Wiggins RE-50(J) 689 13.8%
Burlington RE-6J 674 24.0%
Holyoke RE-1J 584 25.3%
Center 26 JT 559 43.6%
West Grant I-JT 399 16.3%
Holly RE-3 256 23.4%
Hanover 28 245 11.4%
Sierra Grande R-30 238 10.9%
Deer Trail 26J 226 24.8%
Stratton R-4 190 13.7%
Idalia RJ-3 177 18.6%
Granada RE-1 175 14.3%
Manzanola 3J 164 12.2%
Bethune R-5 101 31.7%
Arickaree R-2 87 21.8%
Silverton 1 75 20.0%

Note. This table displays information available on the CDE District Dashboard (CDE, 2021c).

school districts. I initially plan to recruit two districts with over 1,000 students, and one
district with less than 1,000 students for the study. Each district is considered a single
case which allows me to compare the cases.

Recruitment Procedures

After receiving conditional IRB approval from the University of Denver, I sent the
recruitment email, found in Appendix D, to the district superintendents of the districts
identified in Table 3. The schools I contacted are rural and they often do not have a formal district IRB that is found in large school districts in urban areas. Since rural schools do not have a formal IRB, I must receive permission to conduct the study from the superintendent and have a letter of support from the superintendent before I contact participants.

I recruited districts throughout November and December; however, due to the ongoing COVID-19 pandemic, rural schools were particularly hit hard by the Omicron variant during the fall of 2021. Most of the districts I contacted were unwilling or unable to participate at the time. A few superintendents cited staff shortages, rising case numbers, and teachers being overwhelmed as reasons for not participating. I also believe that the timing of recruitment, before and after Thanksgiving, and then, prior to winter break, was not well planned on my part and contributed to the lack of interest in participation. Fortunately, one school district in Table 3 agreed to participate in January 2022. I am using the pseudonym Stanley School District, for this district which is a small rural district on the eastern plains with less than 400 students. The superintendent of Stanley sent a letter of support for my research study, which I then submitted to IRB.

Participant Selection

Since the Stanley School District is considered a small rural district, with a student population of less than 1,000 students, there are only three teachers who teach literacy in 4th – 12th grades. I contacted the potential participants using the recruitment email, found in Appendix D. The participants had to meet the inclusion criteria: (a) currently teaching reading, language arts, or English, (b) teach one or multiple grades between 4th
and 8th grade, and (c) have taught in a rural school for at least five years. Two of the three potential participants agreed to participate in the study. The pseudonyms used for these participants, throughout the rest of this chapter and Chapter 4, are Cindy and Michelle. I provided the verbal consent, found in Appendix E, and met with both participants to review the study and explain how the data would be collected.

**Data Collection**

I collected the qualitative data throughout January 2022 including interviews with participants and gathering of artifacts. An initial virtual visit established the official timeline, reviewed artifacts, and discussed background and demographical information from the participants. I then scheduled two virtual Zoom semi-structured interviews with each participant. Using Zoom to conduct the interviews allowed the participants to schedule time outside of their normal school day and, as a matter of fact, three of the four interviews took place in the evenings after school. Each of the interviews lasted an hour, with the second interview with Michelle lasting an hour and a half.

Prior to the interviews, I emailed both participants the interview questions, so they knew the topic and content of the interviews ahead of time. The semi-structured interviews followed the interview protocol in Appendix C, which was adapted from interview protocols by Stake (1995) and Yin (2018). The first interview focused on literacy including professional developments on literacy topics and EB students, areas of literacy professional growth, literacy opportunities and challenges with EB students, and the impact that being in a rural location has on attending professional developments. Both
participants were able to schedule their interviews with me in the same week, which allowed me to review the data and ask clarifying questions prior to the second interview.

The second interview started with the definition of Culturally Sustaining Pedagogy (Paris & Alim, 2014) and a brief explanation of Funds of Knowledge (Gonzalez et al., 2005; Moll et al., 1992). The second interview centered on Culturally Sustaining Pedagogy and Funds of Knowledge questions related to professional developments, incorporating students’ cultural identities into lessons, and connecting literacy to students’ home and community experiences. The second interview also asked how the rural location has presented opportunities or challenges to learning about how to include Culturally Sustaining Pedagogy and Funds of Knowledge in their practice. Unfortunately, for both interviews, the participants focused on comprehensive rural issues that have been difficult to manage, although there was some data related to both literacy and funds of knowledge.

I also collected documents and artifacts from the participants including professional development certificates, unofficial graduate level transcripts, and course descriptions for virtual training opportunities. I intended to examine the topics and content of the professional developments that were attended by both participants, focusing on literacy, funds of knowledge and culturally sustaining pedagogy. I asked the participants to email a scan or photograph of their PD certificates and other relevant information. Michelle sent documentation that demonstrated how she met the English learner PD requirement to renew her teaching license (CDE, 2021d). Cindy sent the unofficial transcript from her current master’s program, for which she is taking classes online. The participants also
provided the information and website for the company (ASCD, 2022), and website where they have attended numerous virtual trainings, which is supported by their superintendent.

**Data Analysis**

Interviews were conducted virtually through Zoom and were recorded in the DU Zoom cloud, which is a password protected space, and downloaded files were kept confidential using a password protected computer. The participant interviews were then transcribed, using Zoom transcription, and each participant interview was then saved as a document. The interviews from both participants were analyzed together using the semi-structured interview protocols in Appendix C and the transcripts of the interviews. I moved participants responses to questions directly next to the question so that both participants’ responses could be analyzed together (Creswell and Poth, 2018). I then printed out the interview questions as well as the responses to the questions, and used pens, highlighters, and sticky notes to code the data.

In the first cycle of coding of interview transcripts, I used structural coding based on the theoretical frameworks of Culturally Sustaining Pedagogy (Paris, 2012; Paris & Alim, 2014) and Funds of Knowledge (Gonzalez et al., 2005; Moll et al., 1992) as well as the key themes from the literature review (Saldaña, 2015). Saldaña states, “structural coding both codes and initially categorizes the data corpus to examine comparable segments’ commonalities, differences, and relationships” (p. 98). The codes used included: FoK (funds of knowledge), CSP (culturally sustaining pedagogy), ELL/EB/CLD, CDE, and CC (college credit), vocabulary, comprehension, reading/literacy, culturally relevant text,
opportunities, challenges, resources, materials, location, and PD (professional development). The structural coding of the artifacts identified a gap in training opportunities related to culturally sustaining pedagogies, literacy, and meeting EB students’ needs.

The participants’ artifacts, certificates from professional developments, unofficial transcripts from masters level coursework, and course descriptions of virtual trainings also used structural coding and were initially coded separately from the interview data. I analyzed the artifacts separately because of delay in obtaining them from the participants. I received the artifacts weeks after the interviews were completed and after having to email and ask multiple times. While analyzing the professional development certificates, I realized that few of my codes were being used, even though these were trainings that were used to fulfill the English learner PD requirements. The certificates largely centered on social-emotional learning in response to the pandemic, which is not applicable to this study. After further researching the trainings, I found that they were loosely connected to EB students, yet met the English learner PD Standard Matrix, since the trainings did not need to be pre-approved and past trainings were also allowed to count (CDE, 2021d).

Cindy, who is currently obtaining a second Master’s degree, also emailed a copy of her unofficial graduate level transcripts. After examining her transcript, I realized that although her major is English, it is not English education, and her courses focus on literature time periods, or specific authors, and did not provide data that could be used in this study. Despite collecting artifacts from both participants, there was very little useful data I was able to use and analyze.
The second cycle included using pattern coding, which Saldaña explains, “are explanatory or inferential codes, ones that identify an emergent theme, configuration, or explanation. They pull together a lot of material from first cycle coding into more meaningful and parsimonious units of analysis” (p. 236). The second cycle of coding led to the formation of a code book which I created using color coded sticky notes. The process of writing information and having the actual notes, allowed me to move things around visually and physically and process the information in a way that I know works for me, which I found difficult to do on the computer. Examples from the code book are in Appendix F. By using the code book, I was able to identify the three major themes of access, gaps, and possibilities. I then used the data to explain the themes, which led to the integration of data sets to identify relevant information for other rural school districts with growing EB student populations.

Integration

Integration in the convergent design used both quantitative and qualitative data to answer the third research question: How does the convergence of national literacy data and experiences of rural teachers provide insight for rural school districts with growing emergent bilingual populations? Integrating the data sets compared the quantitative and qualitative results to provide a deeper understanding of challenges facing EB students in rural areas. I used the data to create a joint display that allowed for easier comparison of the data results (Creswell & Plano Clark, 2018). Creswell and Plano Clark (2018) state, “a joint display (or an integration display) is an approach to show the integration data analysis by arranging it a single table or graph the quantitative and qualitative data” (p.
228). In a convergent design, the joint display most commonly follows either a comparing results display, side-by-side display, or statistics-by-themes display (Guetterman et al., 2015; Plano Clark & Sanders, 2015). The specific organization of the joint display for this study used a comparison results display. It compared the national EB literacy trend data to the themes and challenges identified through analysis of interviews and artifacts. The integration also identified major challenges and barriers teachers encounter because of the rural location of the school district.

Mixed Methods Validity

In mixed methods studies there are a number of different threats to validity due to the data being collected separately and concurrently. The quantitative validity and reliability are verified through research and validity studies conducted by the NAEP Validity Studies (NVS) Panel (AIR, 2021). Valencia et al. (2020) examined the alignment between the 2017 NAEP and state assessments for English language arts and concluded a few changes needed to occur to the NAEP 2019 assessment to remain valid. These changes were made to the 2019 NAEP, which confirmed construct validity, and is outlined in the Reading Framework published by the National Assessment Governing Board (2019). The NAEP has been administered since 1969, which allows for scores to be examined over time showing quantitative reliability. The data will be analyzed using the NAEP Data Explorer, which is hosted by NCES (2021) and is a web-based system that allows NAEP data to be compared as far back as 1990. The NAEP Data Explorer “delivers dynamic, customizable tabular summaries that can be extracted to other software products, including word-processing, spreadsheet, presentation, and statistical
applications” (2008). The NAEP Data Explorer can compare state results to national, regional, or other states that participated, along with variables to disaggregate the data.

The qualitative validity uses member checking (Creswell & Poth, 2018) after both the first and second interviews with participants. Member checking allows for preliminary analysis or descriptions of themes and permits participants to provide feedback on the accuracy or inaccuracy of the information (Creswell & Poth, 2018). I conducted the member checking one week after each interview using email and Zoom. I took notes regarding any changes or insights that occurred during the member checking. Approximately three weeks after all interviews were completed, I conducted a final member check to review the themes and obtain participant feedback. I also had a peer from another doctoral program in the College of Education review the data and interpretations, and provide feedback and perspective to the themes, sub-themes, and the data used to support them.

Within the convergent design the threats to validity are unrelated questions and concepts, unequal sample sizes, keeping results separate, and failing to resolve disconfirming results (Creswell & Plano Clark, 2018). The concept of EB students in rural areas is similar in both the quantitative and qualitative strands. The sample sizes are unequal; however, the qualitative data is providing individual experiences and information to understand what affects the quantitative data in rural schools. The use of the joint display clearly integrates the results and if there are results that diverge, I will analyze them further to provide deeper understanding.
Potential Ethical Issues

The use of mixed methods in this research study, rather than only a qualitative design, does not add any risks or benefits to the participants. Since, this is a convergent design, the quantitative and qualitative data are collected concurrently and have no influence or relationship with the other set of data. Integration of the data sets does not add risks or benefits to participants. The use of mixed methods in this research study, will not be my first experience with this design outside of the classroom. I have participated in a few small scale mixed methods studies through my graduate research assistantship with the Center for Rural School Health and Education. The research project was approved by the University of Denver’s Institutional Review Board using the documents in Appendices C – E which include the recruitment emails, data collection protocols, and informed consent for participants.

The Researcher in this Context

I grew up in a rural Wisconsin farming community, with a graduating class of 103 students. Our graduating class was one of the largest due to the closing of the high school in a neighboring district, which resulted in our class size doubling. Although I spent my first five years teaching in Houston, TX, I ended up teaching in rural eastern Texas for eight years. The students at the school were bussed into a central location where the middle and high school buildings were located. The bussing of students was due to district consolidation in an attempt to save money and operate fewer school buildings. My 13 years as a teacher and instructional coach in both urban and rural areas, in addition
to growing up in a rural setting, provided a wealth of experience and background knowledge to this study.

After leaving Texas for Colorado and starting my doctoral program, I became a graduate research assistant for the Center for Rural School Health and Education (CRSHE). Through my involvement with CRSHE, I initially worked with four rural school districts in Southeastern Colorado to facilitate a strategic planning process to develop a Comprehensive Health and Wellness plan. I now work closely with nine rural school districts in that region as they finish implementing their wellness plans. I have also worked in some capacity with the other 21 rural districts in the San Luis Valley and Southeastern Colorado that CRSHE collaborates with.

Despite the fact that I live in Denver, attend a private university, and have different social and political beliefs than the rural areas I work with, I believe that my personal background and experiences with rural schools has clearly demonstrated my longstanding interest in rural education. My personal experiences and strong background knowledge about rural areas provides credibility to understanding the challenges facing rural educators.

Summary

This chapter explained the convergent mixed methods design and how this research study will be conducted. The data from this research study will lead to a deeper understanding of the national data trends of EB literacy, how literacy teaching and learning occur in rural areas for EB students and provide insight for other rural school districts. In chapter one, I established the unique position of rural school districts, the
changing demographics of rural America, and the growing EB population. In chapter
two, culturally sustaining pedagogy and funds of knowledge were used to provide a
framework for examining and understanding the literature regarding reading best
practices for EB students and how to meet the unique needs of rural school districts with
growing EB student populations. Chapter three established the research design including
the importance of using both quantitative and qualitative data for this study. This chapter
also demonstrated how using national data regarding reading scores for EB students
connects to the changes currently occurring in rural school districts. Incorporating
qualitative data regarding the experiences, training opportunities, and challenges provide
further information for districts. The next chapters will discuss the results of the research
study and identify how these results apply to other rural school districts with growing EB
populations.
**Chapter Four: Findings**

The convergent mixed methods design holds the quantitative and qualitative data and analysis separate until the results are integrated. This chapter will focus on the findings of the quantitative and qualitative data that answer research questions one and two separately. Then examine the integration of the data by merging the two data sets to answer research question three.

**Quantitative Methods**

The first research question is: What are the national trends in emergent bilingual reading test scores? This question is answered using quantitative data from the NAEP 4th and 8th grade reading tests from 2003, 2007, 2015, and 2019. The data from these four years of NAEP testing provides further breakdown and analysis of variables, which are fully listed in Appendix B. This data is accessible through the NAEP Data Explorer (NDE), and I did not need to apply for access to restricted use data sets (Nation’s Report Card, 2022). I obtained the results from both the 4th and 8th grade reading tests, applying the specific variables listed in Table 4, through the use of the NDE (Nation’s Report Card, 2022).

On the federal level, students are categorized as ELL or Not ELL on NAEP testing and results, which corresponds to EB and non-EB for this study; however, when analyzing the national data, ELL and Not ELL will be used for consistency with federal identification. Four location options were selected to demonstrate the testing score
### Table 4: Applied NAEP Variables

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Categories Within Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELL Status</td>
<td>ELL or Not ELL</td>
</tr>
<tr>
<td>Location</td>
<td>City, Suburb, Town, Rural</td>
</tr>
<tr>
<td>Percent receiving ESL instruction</td>
<td>None, 1-5%, 6-10%, 11-25%, 26-50%, 51-75%, 76-90%, Over 90%</td>
</tr>
</tbody>
</table>

*Note.* This table identifies the variables used in NAEP Data Explorer to obtain testing data.

differences between city, suburb, town, and rural locations. The NAEP definitions of these four locations can be found in Appendix A along with the definitions for rural and ELL. Although there were eight category options within percent receiving ESL instruction, the 11-25%, 26-50%, and 51-75% are the categories of data that are included on the data tables in the results. These variables were then applied to the four selected years of NAEP data.

**Summary of Data Collection**

The first significant year of data collection is 2003. The NAEP has been given nationally since 1969 and historical data dating that far back is accessible; however, with the focus of this study specifically on EB students, the implementation of No Child Left Behind in 2002 is designated as the starting point of data collection. NCLB was signed in January 2002, and NAEP testing occurred between January and March 2003, which provided insight into student scores one year into NCLB (NCES, 2019). However, the 4th and 8th grade reading scores from 2003 were not categorized by the variables used in
other testing years. There are no categories within the variables of location and student percentages receiving ESL instruction. The data from 2003 is only available for the ELL and Not ELL identification variables. Additionally, prior to 1998, NAEP reading tests did not offer accommodations to any student. The first year in which testing accommodations were offered for both 4th and 8th grade reading tests was in 2002, which then became standard for all future testing years (NCES, 2004).

The second significant year of data collection is 2007, owing to the 2006 release of the National Literacy Panels seminal report Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language Minority Children and Youth (August & Shanahan, 2006). Since NAEP reading tests are conducted every other year, the 2007 test writers had time to use the 2006 report and make appropriate adjustments to meet the needs of diverse learners. The report is the result of a systematic and rigorous review of research on literacy acquisition in a second language and is considered a seminal report for EB literacy learning. The National Literacy Panel report prompted further data breakdown starting with the 2007 NAEP tests, including categories within the ELL status, location, and percent receiving ESL instruction variables.

The third important year of data collection is 2015, which is 13 years after the passing of NCLB (2002) and immediately prior to the passing of the Every Student Succeeds Act in December of 2015. The NAEP reading data from 2015 is used as a point of time to compare to both the 2003 and 2007 data to see the impact of NCLB over those 13 years. ESSA (2015) revised several of the restrictive requirements of NCLB (2002) and
adjusted the focus to prioritize overall success for schools and students by preparing students using college and career readiness standards (Department of Education, 2022).

States, districts, and schools were given until the end of the 2016 – 2017 school year to implement ESSA requirements (Department of Education, 2022). As a result of the deadline being set at the end of the 2016 – 17 school year, the NAEP data from 2017 was not used. The final year of data collection is 2019, which is two years into the ESSA (2015) changes in schools and districts, and the last year of normal uninterrupted learning data, prior to the COVID-19 pandemic. NAEP was scheduled to occur between January – March of 2021, however, due to the ongoing pandemic, it was postponed until 2022, and is currently underway.

**Quantitative Analysis and Findings**

I used the NAEP Data Explorer (Nation’s Report Card, 2022) to obtain the 4th and 8th grade reading test scores for 2003, 2007, 2015, and 2019. The NAEP testing window is traditionally January through March of odd years and the NAEP scores are reported on a 0-500 scale for every year included in this study (NAEP, 2021). I used the NDE to run a simple or multiple regression analysis for the reading test scores from 2003, 2007, 2015, and 2019, for both 4th and 8th grade, ELL status, and location, to determine the relationships between variables. Since the data from 2003 was not categorized by location, I conducted a simple linear regression focusing on the identification category of ELL and Not ELL for both 4th and 8th grade. For the 2007, 2015, and 2019 I conducted a multiple linear regression to determine if school location and ELL identification significantly predicted NAEP reading scores.
4th Grade NAEP Data

The complete comparison of 4th grade reading based on location and year is located in Table 5, including scores for student populations over 11% or 51% receiving ESL instruction. In 2003, approximately 188,000 students in 7,500 schools from all 50 states participated in the NAEP 4th grade reading test (NCES, 2004). With the 2003 NAEP 4th grade data only categorized by ELL and Not ELL, I ran a simple linear regression to test

Table 5: 4th Grade NAEP Reading Score Comparison

<table>
<thead>
<tr>
<th>Year</th>
<th>ELL Identification and % Receiving ESL Instruction</th>
<th>City</th>
<th>Suburb</th>
<th>Town</th>
<th>Rural</th>
<th>National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>ELL 11-25%</td>
<td>184</td>
<td>193</td>
<td>186</td>
<td>189</td>
<td>188</td>
</tr>
<tr>
<td></td>
<td>ELL 51-75%</td>
<td>177</td>
<td>184</td>
<td>NM</td>
<td>NM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>218</td>
<td>228</td>
<td>220</td>
<td>223</td>
<td>223</td>
</tr>
<tr>
<td>2007</td>
<td>ELL 11-25%</td>
<td>186</td>
<td>193</td>
<td>185</td>
<td>188</td>
<td>189</td>
</tr>
<tr>
<td></td>
<td>ELL 51-75%</td>
<td>190</td>
<td>201</td>
<td>196</td>
<td>198</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>221</td>
<td>230</td>
<td>221</td>
<td>224</td>
<td>225</td>
</tr>
<tr>
<td>2015</td>
<td>ELL 11-25%</td>
<td>187</td>
<td>196</td>
<td>186</td>
<td>189</td>
<td>191</td>
</tr>
<tr>
<td></td>
<td>ELL 51-75%</td>
<td>191</td>
<td>197</td>
<td>191</td>
<td>187</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>219</td>
<td>229</td>
<td>219</td>
<td>221</td>
<td>224</td>
</tr>
</tbody>
</table>

Note. ELL students receiving ESL instruction over 51% in Town and Rural categories did not meet (NM) reporting standards. ELL and Not ELL are used in this table due to the federal classification and reporting standards used by NAEP (2021).
if ELL identification significantly predicted NAEP 4th grade reading scores. The linear regression model is: \( \text{NAEP score} = 186.05 + 33.22 \times \text{(Not ELL)} \). The overall regression is statistically significant (\( R^2 = 0.06, F(1, 12119) = 799.07, p < .000 \)). These results establish that there is a statistically significant difference between students identified as ELL compared to students not identified, with an average gap of 33 points.

In 2007, approximately 191,000 students in 7,830 schools throughout the U.S. participated in the NAEP 4th grade reading test (Lee et al., 2007). With all of the variable categories available, I conducted a multiple linear regression to examine if the school location and ELL identification predicted NAEP reading scores. The fitted regression model is: \( \text{NAEP score} = 183.68 + \text{(location)} + 34.18 \times \text{(Not ELL)} \). The location data for 2007 is: city = 0; suburb = 9.52; town = 2.63; rural = 5.26. Using the regression model, the average NAEP score for rural ELL students is \( 183.68 + 5.26 = 188.94 \) and the average score for rural Not ELL students is \( 183.68 + 5.26 + 34.18 = 223.12 \). The overall regression is statistically significant (\( R^2 = 0.09, F(4, 22411.97) = 577.52, p < .000 \)). These results demonstrate that there is a statistically significant difference between students identified as ELL compared to Not ELL, which is demonstrated in all school locations. Students identified as ELL in city, suburb, town, and rural, were an average of 35 points below their Not ELL identified peers in the same locations.

In 2011, Colorado Department of Education began reporting Colorado specific NAEP data, including the number of students and schools in Colorado that participated (CDE, 2015). In 2015, Colorado had 2,200 4th grade students in 98 schools participated. The state results were not statistically different than the national average score, however
Colorado’s 2015 average was below the 2013 state average (CDE, 2015). The state report does not provide further categorical information regarding location or ELL identification, instead focusing on racial/ethnical, gender, and National School Lunch program differences (Department of Education, 2015).

In 2015, approximately 139,100 students in 7,810 schools in the U.S. participated in the NAEP 4th grade reading test (Nation’s Report Card, 2015). Similarly to 2007, I used the 2015 NAEP test data and conducted a multiple linear regression to assess student scores based on location and ELL identification. The fitted regression model is: NAEP score = 185.83 + (location) + 36.19*(Not ELL). The location data for 2015 is: city = 0; suburb = 7.46; town = -1.05; rural = 2.48. Using the regression model, the average NAEP score for rural ELL students is 185.83 + 2.48 = 188.31 and the average score for rural Not ELL students is 185.83 + 2.48 + 36.19 = 224.5. The overall regression is statistically significant (R2 = 0.11, F(4, 10722.15) = 319.97, p = < .000). The results reveal that there is still a statistically significant difference between students identified as ELL compared to those not identified, with ELL students scoring an average of 36 points below their peers in all four locations.

In 2017, NAEP testing moved from the traditional paper and pencil test to a digitally based assessment. The 2019 NAEP reading scores, in addition to being two years after the implementation of ESSA, are also the second year in which digital assessments were used (NAEP, 2019). In 2019, Colorado had 3,200 4th grade students in 170 schools participate in the NAEP 4th grade reading assessment (CDE, 2019c). Nationally, 150,600 4th grade students from 8,300 schools participated in the NAEP 4th grade reading
assessment (NAEP, 2019). Using the 2019 data, I conducted a multiple linear regression with the same variables as 2007 and 2015. The fitted regression model is: NAEP score = 186.91 + (location) + 32.14*(Not ELL). The location data for 2019 is: city = 0; suburb = 10.00; town = -.25; rural = 2.25. Using the regression model, the average NAEP score for rural ELL student average score is 186.91 + 2.25 = 189.16 and the average score for rural Not ELL students is 186.91 + 2.25 + 32.14 = 221. The overall regression is statistically significant (R2 = 0.09, F(4, 22255.87) = 561.33, p = < .000). The results from 2019 NAEP show that although there is still a statistically significant difference between students identified as ELL and Not ELL, the national gap has decreased to an average of 33 points from 36 points in 2015. Colorado’s gap between students identified as ELL and Not ELL, however, is larger than the national gap, with an average of 44 points between the two groups (CDE, 2019d).

8th Grade NAEP Data

Similarly, using the NAEP Data Explorer (Nation’s Report Card, 2022), I used the 8th grade reading test scores from 2003, 2007, 2015, and 2019 to conduct simple or multiple linear regressions based on different variables. Table 6, contains the NAEP score

Table 6: 8th Grade NAEP Reading Score Comparison

<table>
<thead>
<tr>
<th>Year</th>
<th>ELL Identification and % Receiving ESL Instruction</th>
<th>City</th>
<th>Suburb</th>
<th>Town</th>
<th>Rural</th>
<th>National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>ELL Not ELL</td>
<td>No Location Breakdown</td>
<td>222</td>
<td>263</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ELL</td>
<td>217</td>
<td>227</td>
<td>224</td>
<td>222</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>
comparison for 8th grade reading based on location and year, including scores for student populations over 11% and 26% receiving ESL instruction. As with the 4th grade data, the 8th grade data from 2003 was not categorized by location. In 2003, approximately 155,000 8th graders from 6,100 schools participated in the NAEP 8th grade reading assessment (NCES, 2004). I conducted a simple linear regression to test if ELL identification significantly predicted NAEP 8th grade reading scores. The fitted regression model is: NAEP score = 222.26 + 41.19*(Not ELL). The overall regression is statistically significant (R² = 0.07, F(1, 7707.84) = 541.78, p = < .000). The results of this simple linear regression shows that there is a statistically significant score difference between student who are identified as ELL and students who are not. In 2003, students identified as ELL were an average of 41 points below their non-ELL peers. This gap is significantly larger than the gaps seen in the 4th grade reading scores.

<table>
<thead>
<tr>
<th>Year</th>
<th>ELL 11-25%</th>
<th>ELL 26-50%</th>
<th>Not ELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>220</td>
<td>222</td>
<td>227</td>
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<td></td>
<td>220</td>
<td>214</td>
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<td>2015</td>
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<td>2019</td>
<td>217</td>
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<td></td>
<td>215</td>
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<td>217</td>
</tr>
</tbody>
</table>

Note. ELL students receiving ESL instruction over 26% in Town and Rural categories did not meet (NM) reporting standards. ELL and Not ELL are used in this table due to the federal classification and reporting standards used by NAEP (2021).
For the 2007, 2015, and 2019 reporting years, I conducted multiple linear regression to test if school location and ELL identification significantly predict the 8th grade NAEP reading score. The new variables used starting in 2007 included identification as ELL, location of the school, and percentage of students receiving ESL instruction. In 2007, approximately 160,700 students in 6,930 schools throughout the U.S. participated in the NAEP 8th grade reading test (Lee et al., 2007). I conducted a multiple linear regression of the 2007 data and found there is a statistically significant difference between ELL and Not ELL students in all locations. The fitted regression model is: \( \text{NAEP score} = 216.93 + (\text{location}) + 40.35 \times (\text{Not ELL}) \). The location data for 2007 is: city = 0; suburb = 9.91; town = 5.04; rural = 7.63. Using the regression model, the NAEP average score for rural ELL students is \( 216.93 + 7.63 = 224.56 \) and the average score for rural Not ELL students is \( 216.93 + 7.63 + 40.35 = 264.91 \). The overall regression is statistically significant (\( R^2 = 0.09, F(4, 22296.75) = 542.73, p = < .000 \)). The results of the 2007 reading test show that there is a statistically significant difference between students identified as ELL and not ELL in all four locations. As seen in the 2003 data, the average difference between ELL student scores and Not ELL student scores remains at 41 points.

Similar to 4th grade, Colorado reported that 2,200 students in 94 schools participated in the NAEP 8th grade reading test in 2015 (CDE, 2015). Nationally, 136,500 8th grade students from 6,140 schools throughout the country completed the NAEP 8th grade reading test in 2015 (Nation’s Report Card, 2015). I conducted a multiple linear regression on the 2015 data using the same variables as 2007. In 2015, the fitted regression model is: \( \text{NAEP score} = 219.69 + (\text{location}) + 43.60 \times (\text{Not ELL}) \). The location
data for 2015 is: city = 0; suburb = 7.34; town = -.19; rural = 2.43. Using the regression model, the average NAEP score for rural ELL students is 219.69 + 2.43 = 222.12 and the average score for rural Not ELL students is 219.69 + 2.43 + 43.60 = 265.72. The overall regression is statistically significant (R2 = 0.1, F(4, 15802.85) = 447, p = < .000). A statistically significant difference between students identified as ELL and students Not ELL still exists in all four locations. And in 2015, the average gap between students identified as ELL and students not identified grew to 44 points.

The NAEP 8th grade test, as in 4th grade, was also changed from a traditional paper and pencil test to a digitally based assessment in 2017 (NAEP, 2019). Colorado had 3,100 students in 150 schools participate in the 2019 NAEP 8th grade reading assessment (CDE, 2019c). In 2019, approximately 143,100 students in 6,950 schools throughout the country participated in the NAEP 8th grade reading assessment (NAEP, 2019). I conducted a multiple linear regression using the same variables as 2007 and 2015. In 2019, the fitted regression model is: NAEP score = 217.72 + (location) + 44.06*(Not ELL). The location data for 2019 is: city = 0; suburb = 7.49; town = -1.10; rural = 2.72. Using the regression model, the average NAEP score for rural ELL students is 217.72 + 2.72 = 220.44 and the average score for rural Not ELL students is 217.72 + 2.72 + 44.06 = 264.50. The overall regression is statistically significant (R2 = 0.1, F(4, 16192.32) = 458.91, p = < .000). A statistically significant difference between students identified as ELL and students not identified remained the same in 2019, with the average gap of 45 points between the two groups and also seen in all four locations. Colorado’s gap between the two identified groups in 8th grade is even larger than the national gap, with
an average of 52 points differing between students identifies as ELL and student not identified (CDE, 2019d).

**Summary of NAEP Data**

Analysis of both the 4th and 8th grade NAEP reading assessments from 2003, 2007, 2015, and 2019, establishes a clear trend regarding EB literacy scores at a national level. Nationally, in 4th grade, EB students scored an average of 32 – 37 points below non-EB students consistently over the 16 years of data included in this study, shown in Table 7. Based on location data from 2007 – 2019, 4th grade EB students in rural schools scored 3 points better than EB students in city schools but were an average of 5 points below EB students in suburb and town schools.

<table>
<thead>
<tr>
<th>Years</th>
<th>ELL Status</th>
<th>City</th>
<th>Suburb</th>
<th>Town</th>
<th>Rural</th>
<th>National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>ELL</td>
<td>No Location Breakdown</td>
<td>186</td>
<td>219</td>
<td>188</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average Difference</td>
<td></td>
<td></td>
<td>- 33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>ELL</td>
<td>184</td>
<td>193</td>
<td>186</td>
<td>189</td>
<td>188</td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>218</td>
<td>228</td>
<td>220</td>
<td>223</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>Average Difference</td>
<td>- 34</td>
<td>- 35</td>
<td>- 34</td>
<td>- 34</td>
<td>- 35</td>
</tr>
<tr>
<td>2015</td>
<td>ELL</td>
<td>186</td>
<td>193</td>
<td>185</td>
<td>188</td>
<td>189</td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>221</td>
<td>230</td>
<td>221</td>
<td>224</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>Average Difference</td>
<td>- 35</td>
<td>- 37</td>
<td>- 36</td>
<td>- 36</td>
<td>- 36</td>
</tr>
<tr>
<td>2019</td>
<td>ELL</td>
<td>187</td>
<td>196</td>
<td>186</td>
<td>189</td>
<td>191</td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>219</td>
<td>229</td>
<td>219</td>
<td>221</td>
<td>224</td>
</tr>
<tr>
<td></td>
<td>Average Difference</td>
<td>- 32</td>
<td>- 33</td>
<td>- 33</td>
<td>- 32</td>
<td>- 33</td>
</tr>
</tbody>
</table>

*Note.* ELL and Not ELL are used due to the federal classifications used by NAEP (2021).
students in suburban schools. The differences between EB scores in rural, city, and suburban locations will be further discussed in Chapter 5.

Nationally, in 8th grade, students identified as EB have scored an average of 40 – 45 points below non-EB students regularly over the 16 years of included data. Based on location data from 2007 – 2019, 8th grade EB students in rural schools on average scored 4 points better than EB students in city schools but are an average of 4 points below EB students in suburban schools. The complete breakdown of the 8th grade NAEP reading scores based on location and EB identification is shown in Table 8.

<table>
<thead>
<tr>
<th>Years</th>
<th>ELL Status</th>
<th>City</th>
<th>Suburban</th>
<th>Town</th>
<th>Rural</th>
<th>National Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>ELL</td>
<td>217</td>
<td>227</td>
<td>221</td>
<td>224</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>258</td>
<td>267</td>
<td>262</td>
<td>264</td>
<td>263</td>
</tr>
<tr>
<td></td>
<td>Average Difference</td>
<td>- 41</td>
<td>- 40</td>
<td>- 41</td>
<td>- 40</td>
<td>- 41</td>
</tr>
<tr>
<td>2007</td>
<td>ELL</td>
<td>220</td>
<td>227</td>
<td>220</td>
<td>222</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>264</td>
<td>270</td>
<td>263</td>
<td>265</td>
<td>267</td>
</tr>
<tr>
<td></td>
<td>Average Difference</td>
<td>- 44</td>
<td>- 43</td>
<td>- 43</td>
<td>- 43</td>
<td>- 44</td>
</tr>
<tr>
<td>2015</td>
<td>ELL</td>
<td>217</td>
<td>225</td>
<td>217</td>
<td>220</td>
<td>221</td>
</tr>
<tr>
<td></td>
<td>Not ELL</td>
<td>262</td>
<td>270</td>
<td>261</td>
<td>264</td>
<td>265</td>
</tr>
<tr>
<td></td>
<td>Average Difference</td>
<td>- 45</td>
<td>- 45</td>
<td>- 44</td>
<td>- 44</td>
<td>- 44</td>
</tr>
</tbody>
</table>

Note. ELL and Not ELL are used due to the federal classifications used by NAEP (2021).
It is evident, after examining the data and the information in Tables 7 and 8, is that the reading gaps have remained throughout NCLB and ESSA, and the National Literacy Panel report has not resulted in an improvement in the overall trend scores for EB students (August & Shanahan, 2006). The data from the NAEP 4th and 8th grade reading tests from 2003, 2007, 2015, and 2019 establish a statistically significant difference between reading scores for students identified as EB compared to those not identified, which persists in city, suburban, town, and rural school locations.

**Qualitative Methods**

The second research question is: What opportunities and challenges do teachers encounter in meeting the literacy needs of emergent bilingual students in rural areas? The second research question is answered using a case study of a small rural school district. Stake (1995) explains that a case study, “to be studied probably has problems and relationships, and the report of the case is likely to have a theme, but the case is an entity... It is a something that we do not sufficiently understand and want to” (p. 133). The population of emergent bilingual students in rural schools is changing and the best way to understand the impact of these changes is to research a district using a case study methodology. The case study is used to provide details regarding teaching in a rural school district, and the advantages and obstacles teachers face due to the location. This case focuses on one rural school district, which establishes very clear case boundaries, and includes the relevant information that is specific to this district.
## Site and Participants

One of the significant factors of the site selection, as described in Chapter 3, is that the rural district must have a student population identified as EB of over 10%. After contacting numerous school districts in November and December 2021, Stanley School District agreed to participate. Stanley School District, as well as the names of the teachers, Cindy and Michelle, are pseudonyms assigned to the participants of the case study. Stanley School District is a small rural school district on the eastern plains of Colorado that has a K-12 student population of less than 400 students. Stanley has one principal, 20 classroom teachers, a total of 40 staff in the entire district. Most of the staff have multiple jobs such as, paraprofessional and school bus driver, or computer teacher and athletic director. The student population of Stanley includes 68% qualifying for FRL, 23.4% identified as English Learners, 56.3% classified as minority, and 10.5% of the students requiring IEPs (CDE, 2021c). Since the passing of ESSA in 2015, Stanley has met accountability standards in reading CMAS testing for 4th and 8th grade at the Approaches Expectations level for EB students as well as the total student population through the 2019 testing year (CDE, 2021c).

After obtaining a letter of support from Stanley’s superintendent and receiving approval from the university’s IRB, I reached out to the language arts and English teachers in the district. Since Stanley’s student population is quite small, there are only three teachers who teach language arts and English in 4th through 12th grades. Two of these teachers agreed to participate in the research study and the participants demographic information is located in Table 9.
Table 9: Participant Information

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Degrees</th>
<th>Race/Ethnicity &amp; Gender</th>
<th>Total Years Teaching</th>
<th>Rural Schools</th>
<th>Current Position</th>
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</thead>
<tbody>
<tr>
<td>Cindy</td>
<td>B.A. Secondary Education</td>
<td>White</td>
<td>16 years</td>
<td>10 years</td>
<td>8th Grade English</td>
</tr>
<tr>
<td></td>
<td>M.Ed. Special Education</td>
<td>Female</td>
<td></td>
<td></td>
<td>HS English</td>
</tr>
<tr>
<td></td>
<td>M.A. English (in progress)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michelle</td>
<td>B.A. Elementary Education</td>
<td>White</td>
<td>18 years</td>
<td>18 years</td>
<td>4th – 6th Grade Language Arts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Cindy and Michelle’s names are pseudonyms. This information was obtained during the first semi-structured interview.

**Cindy**

Cindy was born and raised in a rural Nebraska farming community. She started teaching during the 2000 – 01 school year in a rural Nebraska school district. Cindy taught language arts in Nebraska for four years before moving to Colorado, and then received her master’s degree in special education, where she then spent six years as a special education teacher. Cindy moved to the Stanley School District during the 2016 – 17 school year and has taught junior high and high school English since then. Junior high in Stanley is 7th and 8th grade and is in the same area of the building as the high school grades. Cindy usually teaches one class of 7th or 8th grade English, and her other classes are high school English. Cindy is currently working on a second master’s degree in
English through an online university program. She admits that she does not know Spanish and often relies on her students to assist each other explaining content and assignments in Spanish.

Michelle

Michelle grew up in a rural community near Stanley and has lived in the same relative area her whole life. Michelle has worked in Stanley since 1998, initially helping in the school library and then working as a school aide. After obtaining her teaching license, she began teaching in 2004 and has since taught 4th, 5th, and 6th grade language arts in Stanley. Michelle’s classroom is in the elementary side of the building and when students complete 6th grade, they then transition over to the junior high and high school side of the building. Michelle recently completed the required 45 hours for English learner PD as required as part of her educator license renewal (CDE, 2021d); she does not speak or understand any language besides English. Michelle has not pursued an advanced degree but stays up-to-date with educational changes through regional and virtual trainings.

Summary of Data Collection

I initially meet with Michelle and Cindy together through Zoom to obtain their verbal consent (see Appendix E), provide the interview questions (see Appendix C), and schedule their individual interviews. Cindy’s and Michelle’s two interviews were conducted separately over Zoom. Conducting the interviews through Zoom allowed more flexibility for both myself and the participants regarding location and time of the day. Three of the four interviews were conducted in the evening and the fourth one was
conducted on a Saturday morning. The semi-structured interviews were recorded in Zoom, then the audio and Zoom transcripts were downloaded and checked for any transcription issues. When the transcript and audio did not match, the audio was relistened to and the transcript was edited where needed.

Interview questions followed a protocol adapted from Stake (1995) and Yin (2018). Each interview ended with asking the participants to reflect on opportunities and challenges of teaching emergent bilingual students in rural schools. The interviews averaged between 60 – 90 minutes, with the second interview lasting longer. The first interviews for both participants focused on understanding their teaching background and experience and identifying any trainings or professional developments they have attended related to EB students and/or literacy. I asked participants about literacy challenges for EB students they have encountered as a teacher as well as literacy opportunities for EB students, tying in the aspect of rural location for both questions. The second interviews focused on culturally sustaining teaching practices, use of students’ funds of knowledge, and incorporating these into the literacy classroom. Participants were also asked about EB student parents and community involvement in their classroom as well as reflecting on how the rural school location has provided opportunities or challenges for integrating funds of knowledge and culturally sustaining practices into their teaching practice.

Qualitative Analysis and Findings

After I checked to ensure that the interview transcripts were correct, I coded the participant interviews using structural coding, which permitted coding related to the literature review. The artifacts I obtained from the participants, including PD
certificates, unofficial transcripts, and course descriptions for virtual trainings were then coded using structural coding based on the theoretical framework of this study (Saldaña, 2015). The structural coding assisted in identifying the quantity of data related to both the literacy content and theoretical framework, ensuring that there was an adequate amount of data. The second cycle of coding used pattern coding, which led directly to the development of the three major themes (Saldaña, 2015). Based on the interviews and artifact analysis, the major themes of this study, demonstrated in Figure 3, are access, gaps, and possibilities.

Note. This figure is created from the themes that emerged during coding and analysis.

Figure 3: Qualitative Themes
Access

The most significant theme throughout the interviews and artifact analysis was the theme of access. This includes access to quality professional development, access to ongoing learning regarding EB students, access to resources and appropriate learning materials for students. The artifacts demonstrated the lack of professional development opportunities participants engaged in related to EB students and absence of recent literacy specific trainings related to vocabulary and reading comprehension.

Professional Development

First, access to continuing education and quality professional development opportunities is a significant barrier for the teachers in Stanley School District. Cindy explained, “Basically, we have to rely on online classes for trainings. Occasionally, the BOCES has something.” BOCES is the Board of Cooperative Educational Services, with 21 regional areas across the state that provide services to all school districts within that region (Colorado BOCES Association, 2022). Cindy further explained, “Somehow along the way someone introduced us to that ASCD website. And so I kind of go to that and see what they have to offer and then, yeah, anytime BOCES advertises anything, they’ll email it to our superintendent.” ASCD (2022) provides a wide variety of different virtual courses through their PD Online asynchronous system and the courses offered count towards professional hours for license renewal.

While trying to find courses that would fulfil the 45 hours in Culturally and Linguistically Diverse Education requirement (CDE, 2021d), Michelle expressed frustration:
I think something that could make things much more equitable across the state is that if there's a mandated training, it should be the same for everyone, not like what they're doing with this 45 hours of ELL for the elementary, and people are just piecemealing stuff together. I think there should have been, here's the program, CDE puts it on their website, you do the modules or whatever, and everyone gets the same deal. I don't care if you're in Cherry Creek, or in Boulder, or the top cream of the crop wherever, you get the same training as little [Stanley] Colorado gets.

CDE (2021d) provides information about professional learning opportunities and approved English learner professional development programs, however since a majority of these are held in the Denver metro or around Colorado Springs, they are inaccessible to teachers in Stanley. Figure 4 identifies the small rural districts in the light green color.

Note. Map created by Western Colorado University (2019) and CDE (2019a).

Figure 4: Rural and Small Rural School Districts in Colorado
which are districts with less than 1,000 students, and the rural districts in green which have between 1,001 – 6,500 students, demonstrating the significant distance the small rural school districts are from large cities where a majority of trainings are held. Stanley is one of the light green districts, with the closest colleges and universities located 2.5 to 3 hours away in Pueblo and Alamosa, and over 4 hours away from Denver. There are very few opportunities to attend in person classes due to the time and expense of traveling.

**Ongoing Learning Regarding EB Students**

The second major theme of access includes EB specific training opportunities and availability of PD on culturally sustaining teaching practices. During the second interview, I provided the definition for culturally sustaining pedagogy, found in Appendix C, Interview Protocol 2. When asked about trainings related to understanding culturally sustaining pedagogy, neither Cindy nor Michelle had ever attended or seen available trainings on this topic. Neither teacher understood what culturally sustaining pedagogy is or how to connect it to their teaching. When I then asked specifically about trainings related to EB students; Cindy explained that the BOCES trainings “seem like a lot of times it's geared towards elementary... I feel like sometimes it kind of would be too elementary for junior high and high school students.” Which resulted in Cindy not attending, thinking that the information would not translate to the grades she teaches.

Michelle believed that the best EB training she has attended was a SIOP training. Michelle stated, “I can think of one was called SIOP. S-I-O-P. Yeah, I think that was it, but we did that years ago, though. In the last 10 years, we've, I feel like we've had
nothing.” Other CLD or EB approved programs have options to join or attend online sessions, although the cost to attend is university tuition (CDE, 2021d), which often cannot be covered by the Stanley School District. Some programs explain that they will work with a school or district on prices, and there are free professional development opportunities listed, however many do not specifically relate to EB students and literacy. Michelle and Cindy indicated that there are very few professional development opportunities that teachers in Stanley are aware of, even if they are available. Cindy states “Anytime BOCES advertises anything, they'll email it to our superintendent or principal” who then pass along the email with information and the teachers then must take the initiative to attend themselves.

**Resources and Materials**

The third major issue of access is the availability of current resources and relevant texts and materials, which is an area of concern in Stanley. Neither Cindy or Michelle believe that they have the right resources or materials to teach EB students. Cindy explains, “I mean, the main thing is just material, especially junior high and high school. My curriculum that I have right now, it does have some ELL material to go along with some [emphasis added] of our stories, but not every single one.” Cindy clarified that the 7th – 12th grades use the Pearson Common Core literature textbooks with online access to Pearson Realize. Cindy teaches junior high and high school and believes that the textbook has fewer resources for EB students. As a result, Cindy explained, “I’ve only ever used Google Translate and audiobooks.” She mostly uses the Google Translate to translate essay assignments into Spanish. The audiobooks are used when the whole class...
is reading a novel, students can listen to the audiobook in English or Spanish and follow along with the English novel. Cindy describes a recent Spanish-speaking newcomer, “I luckily have a student who is fluent in Spanish and English and who is... able to sit by him and translate anything” which helps the new student participate in class conversations about the book. This is one of the ways that Cindy has adapted to meet student needs without having access to materials larger schools may have available.

Michelle explained that the elementary is using a program called Amplify CKLA, which provides more support for EB students. However, when the new literacy curriculum arrived, due to the district size, the teachers had to figure it out on their own. Michelle explained:

When we got this whole new CKLA program, we didn't get any training with it, cause the training cost money. So you just get it thrown to you. Our books come in, they tell us to come down, and we got to pull our stuff off our pallets, take it to our room, unpack it and figure out how to use it... We did have one day, the first day back from Christmas break, they gave us a workday... and on that day, with the time that I was given, I was poking around in my online teacher guide thing, and I found grammar! I didn't even know there was grammar [available].

Michelle described her irritation, “You should have to buy the training with it or there should be a grant for the training from the state... you can't just throw teachers a program, no matter how good it is.” Which then means that teachers usually spend their own time trying to figure out the new curriculum and resources online. Since Stanley only has three literacy teachers from 4th to 12th grade, they cannot work together to learn how to use the different textbooks and materials because there are three different programs and textbooks used. Both Cindy and Michelle rely on the textbooks and the additional materials that come with the textbooks. When asked about other available text sources,
Michelle stated that “Yes, we have a pretty good school library, but it used to have a much better budget than it does now.” No other texts, outside of what is provided in the textbooks and school library, are used. If teachers are looking for other texts like picture books or novels, Stanley does have a public library, with a larger public library located about 30 minutes away.

The theme of access addresses some of the challenges that rural teachers contend with while trying to continue their own professional learning and while trying to improve the educational outcomes for their students. The issue of access to professional developments is supported by Lavalley (2018) who states, “in rural areas, accessing high-quality, relevant professional development can pose a challenge. Physical distance from universities and other outside providers makes access to professional development a significant barrier” (p. 17). Additionally, based on research on Idaho rural schools, Player (2015) states, “rural teachers were the least likely of all teachers to have participated in professional development related to strategies dealing with ELL students” (p. 19). The data from Stanley further supports Lavalley (2018) and Player (2015) and provides current evidence to support the theme of access.

**Gaps**

The theme of gaps is the second major theme that emerged from the interviews and artifact analysis. The two gaps identified are strongly interconnected due to the small size of the district. The gaps center on continual staff turnover which leads to lack of consistency and fidelity of curriculum implementation throughout the district.
Staff Turnover

The first major gap is staff turnover, which is a significant and ongoing issue. Michelle explains, “we've had a ton of turnover, [we] can't keep anyone here, no one who knows anything wants to come here. We're in the middle of nowhere.” Since 2017, Stanley has had three superintendents, five principals, and so many staff changes that neither Cindy nor Michelle could count. Despite both teaching in Stanley for over 10 years, they have noticed that some teachers and staff members constantly move between different rural school districts in the area. Cindy remarked that a former colleague, “has been to two other districts in the last four years”. The high turnover rate of teachers and administrators has created gaps within consistency and fidelity of implementation of district programs. Michelle explains, “I think that's part of what I'm trying to say is the changeover and administration changeover and staff ends up that there's no continuity of the program going through.” The turnover of staff directly ties into the second gap, lack of consistency and fidelity.

Lack of Consistency and Fidelity

The second gap is the issue regarding the lack of consistency and fidelity of curriculum implementation. These curriculum gaps for students are connected directly to the issue of staff turnover. These curriculum gaps vary between content areas and grade levels. Michelle provided an example of a reading curriculum issue:

I mean, even this year, we just purchased a reading program last year, and the new teacher... she brought in stuff from their old school, they're using their own thing. You know, so now I'm going, okay, I'm the 4th grade teacher, I'm going to follow this 3rd grade teacher who's not following the reading curriculum, so [students are] gonna miss a whole big chunk of what they need to perform in my class.
Cindy explained her own experiences with the lack of fidelity and consistency, she said that “when a different admin comes in you're stuck doing whatever they want you to [teach] instead of the [curriculum] you just learned about last year.” This is challenging for teachers like Michelle and Cindy, who have been with the district over ten years, but consistently have to adjust or adapt their curriculum before school starts in August when new administration is assigned.

Additionally, if teachers take the initiative to get trained and incorporate a research based program, it may not be supported by the district. Michelle provided insight into this issue; “I used my professional development money from school [from a grant]. And I did go to the Orton-Gillingham training. But that's not approved by my school, so I don't get to use it” in the classroom. If Michelle was determined to incorporate Orton-Gillingham in her classroom, she would have to pay for the materials with her own money and attend continual training sessions at her own expense. This discourages teachers from using anything outside of what the district purchases.

The data provided by both Michelle and Cindy establishes how educational gaps are impacting rural schools. Showalter et al. (2019) states, “rural schools continue to report teacher shortages for numerous reasons. These include issues related to inadequate funding, lack of amenities, social and geographic isolation, and limited access to professional development opportunities” (p. 35). Additionally, recent research by Goldhaber et al. (2020) and Yoon et al. (2019), found that rural schools have higher vacancy rates than other locations. Staff turnover also impacts the implementation of
curriculum, including lack of consistency with programs used which impacts student learning creating curriculum gaps (Lopez & Wise, 2015; Showalter et al., 2017).

**Possibilities**

The third major theme of possibilities emerged through the analysis when discussing the unique possibilities both teachers and students have in rural schools. The possibilities theme is interwoven by demonstrating the support of the close-knit community, utilizing Funds of Knowledge to continually build upon student knowledge, and a surprising benefit of the COVID-19 pandemic resulting in improving internet reliability.

**Close-knit Community**

Despite obstacles Stanley must overcome based on their rural location, there are also encouraging stories which may not happen in a district with a much larger student population. The small class sizes provide students with support from teachers and para-professionals, as well as creating an encouraging community environment. Cindy provided an example of this:

I have a new student last week, speaks no English at all, and we're reading The Outsiders. [I’m thinking] how in the world am I going to do this? And luckily, I found an online Spanish version of it, so, he's reading that. And I luckily have a student who is fluent in Spanish and English and who is... able to sit by him and translate anything.

The other student, who is fluent in Spanish and English, came to Stanley from Honduras only two years earlier. Fortunately, closely working together has created a bond between the two students. Cindy explained later in the interview, “the other student that's helping him, he's like, ‘I practice with him 20 minutes a day with his English.’” The student who is fluent in both languages, took it upon himself to help the new student practice his
English, which demonstrates relationship these two students have, and the supportive environment for all students in Stanley.

**Funds of Knowledge**

The second interview included questions about Funds of Knowledge. Both Cindy and Michelle say that they incorporate Funds of Knowledge in their classrooms with the support of the students. Cindy stated, “some poems that are in Spanish, written by Spanish authors, and then they have the English version next to it... I would have [a student] read it in Spanish to the class first, and [they] would just read so fluently” that the other students were impressed. This helps, “because we do have several students that speak Spanish and English fluently” (Cindy) and they help the class understand the nuances of the poetry in Spanish that do not translate quite the same to English.

Michelle taught a new unit on Mesoamerica this year and asked students to talk to their families to see if they had any realia that could be brought in. Michelle was both amazed and inspired by the support that families and the community provided. Michelle explained that:

[students] brought back some Mayan tools; like they were actually in the Yucatan where the Mayans work[ed]. [They] brought back some candy from there with the Amaranth seeds in it that we’d studied about; one of the foods that the ancient Mayans [used].

This provided an opportunity for other students to talk about experiences they have had while visiting relatives in the area of Mesoamerica. Students also told stories they had heard from their parents and grandparents regarding their past and cultural identity. It also provided perspective to the White students who did not have this background knowledge or experiences with the Mayan culture or Mesoamerica.
**Reliable Internet**

A surprising and positive result of the COVID-19 pandemic has been the improvement of internet availability in Stanley. Reliable internet and new technology was an area of concern that considerably improved as a result of COVID-19. In addition to purchasing Chromebooks for all students, Michelle explained that “When the money came [CARES Act and ESSER funds], that's what we invested in. And then we even got some like, big things that project our Wi-Fi out into our parking lot” so that students and families could come to the and work on school assignments outdoors.

Cindy explained that this was done because “the first year that we went into remote learning. We had... students doing their work on a phone, using their data” which is expensive because the most common cell phone provider in the area does not provide unlimited data options. Cindy added that at one point, “This last year, [Stanley] took a bus or something and parked it kind of towards like Hartman, where they didn't have a lot of internet access and put a Wi-Fi [modem]” so that students in that area had access to the internet. The positive insight Stanley has regarding reliable internet in rural areas has also become a topic of national interest for other rural communities.

The theme of possibilities provided an aspect of optimism to the understanding educational opportunities as an EB student in a rural school district. Stanley School District has created a supportive, caring, community and culture in which students are succeeding academically and socially (Johnson et al., 2018). This is also supported by research from Showalter (2017) who states, “within the close-knit confines of a rural community, this message of collaboration and cultural understanding is particularly
relevant and meaningful” (p. 48). Research by Lai and Widmar (2021) found that schools incorporating funds of knowledge have greater support from the community. Additionally, the focus of reliable rural internet access (Longhurst & Thier, 2021) has also recently been featured in articles and research by the Pew Research Center (Vogels, 2021), NPR (Marquez Janse et al., 2021), and the New York Times (Casselman, 2021).

**Summary of Qualitative Data**

The information obtained through semi-structured interviews and artifact analysis provided important data that answers the second research question: What opportunities and challenges do teachers encounter in meeting the literacy needs of emergent bilingual students in rural areas? The theme of access focuses on the limited professional development opportunities available to rural educators due to their remote location. The data also supported the lack of access to ongoing learning regarding EB students and access to quality resources and materials. The theme of gaps draws attention to the impact of high turnover rates of both administrators and teachers, which leads to the lack of fidelity in curriculum use and implementation. The theme of possibilities demonstrates the supportive community students are part of in a rural school. This time also demonstrates the importance of including funds of knowledge into the classrooms. And insight into a positive outcome from the COVID-19 pandemic for rural schools is now gaining access to reliable internet. This improved technology usage for Stanley provides an optimistic outlook for future changes.
Integration

In a convergent mixed methods design, the quantitative and qualitative data are collected and analyzed separately. The integration of the data in this study will answer research question three: How does the convergence of national literacy data and experiences of rural teachers provide insight for rural school districts with growing emergent bilingual populations? This integration of the data is demonstrated using a joint display. Although the similarities between the quantitative and qualitative data is not immediately apparent, Table 10 presents the rural EB achievement gaps from the NAEP 4th and 8th grade reading tests next to the rural education challenges that emerged during the case study. The educational challenges and opportunities presented offer evidence to explain the average rural EB student gap on NAEP reading tests and insight as to why the rural gap is not notably greater than the national gap.

Table 10: Joint Display of Convergent Mixed Methods Data

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade</th>
<th>National EB Gap</th>
<th>Rural EB Gap</th>
<th>Rural Educator Challenges and Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>4th</td>
<td>- 33</td>
<td>-</td>
<td>Limited access to PD</td>
</tr>
<tr>
<td></td>
<td>8th</td>
<td>- 44</td>
<td>-</td>
<td>Lack of trainings related to EB or CSP</td>
</tr>
<tr>
<td>2007</td>
<td>4th</td>
<td>- 35</td>
<td>- 34</td>
<td>Inadequate access to resources and materials</td>
</tr>
<tr>
<td></td>
<td>8th</td>
<td>- 41</td>
<td>- 40</td>
<td>Staff turnover</td>
</tr>
<tr>
<td>2015</td>
<td>4th</td>
<td>- 36</td>
<td>- 36</td>
<td>Supportive community</td>
</tr>
<tr>
<td></td>
<td>8th</td>
<td>- 44</td>
<td>- 43</td>
<td>Funds of Knowledge</td>
</tr>
<tr>
<td>2019</td>
<td>4th</td>
<td>- 35</td>
<td>- 32</td>
<td>Internet</td>
</tr>
<tr>
<td></td>
<td>8th</td>
<td>- 44</td>
<td>- 44</td>
<td></td>
</tr>
</tbody>
</table>

Note. Table based on Creswell and Plano Clark (2018).
The quantitative analysis of the NAEP 4th and 8th grade EB reading scores demonstrates a continually large negative gap from their non-EB peers. This gap is seen in both grade levels during the 2003, 2007, 2015, and 2019 testing years in schools located in the city, suburbs, towns, and rural areas. Impressively, EB rural reading scores for both 4th and 8th grade in each of the testing years included, were higher than the scores of EB students in city and town locations. EB reading scores in the suburban areas outperformed EB students in all other locations, however, they did retain the average gap below their non-EB peers, since non-EB students in suburban schools outperformed non-EB students in all locations as well. To better understand the unique context of rural education, a single case study of one rural school district was conducted to examine EB student learning. The case study provided insight into both the opportunities and challenges rural literacy teachers handle as demonstrated through analysis of the themes of access, gaps, and possibilities.

Summary

Despite the focus of my study centering on reading and literacy practices, the data from the case study did not truly address this topic. The questions in the interview protocols were specific to literacy, however, I did not probe participants to provide explicit literacy responses. Instead the participants responses focused on systemic challenges that they have experienced which were the greater areas of need and focus. In Chapter 3, I explained the convergent mixed methods design that I would use to collect and analyze data for this study. In this chapter, I explained the data collection and analysis from the quantitative strand, which answered research question one. I then
explained the data collection and analysis from the qualitative strand, which answered research question two. The data was then integrated, which answered research question three and recognized the greater needs of rural education. In the next chapter, research question three, will be further answered by discussing implications from this study for other rural school districts with growing EB student populations.
Chapter Five: Discussion

The emergent bilingual literacy research included in this study has taken place in urban or suburban schools (Carlo et al., 2014; Ebe, 2012; Kelley et al., 2015; Kieffer & Lesaux, 2012a; Kieffer & Lesaux, 2012b; Lesaux & Kieffer, 2010; Lesaux et al., 2010; Lesaux et al., 2014; Mancilla-Martinez, 2010; Mancilla-Martinez et al., 2011; Phillips Galloway & Uccelli, 2018). A few rural studies researched EB students in rural areas and other studies focused on the challenges teachers face in rural schools (Fogle & Moser, 2017; Goldhaber et al., 2020; Hansen-Thomas et al., 2016; Johnson et al., 2018; Lai & Widmar, 2021; Lee & Hawkins, 2015; Longhurst & Thier, 2021; Rodriguez et al., 2010; Yoon et al., 2019). Overall, there is a lack of research regarding EB students in rural schools, this research study brings awareness to the needs of rural educators regarding EB students and provides relevant research findings for rural school districts with growing EB student populations.

Summary of Findings

Using a convergent mixed methods design, this research study examined NAEP reading score trends for EB students from the select years of 2003, 2007, 2015, and 2019. Additionally, the research included a case study of one rural school district in Colorado and the opportunities and challenges teachers encounter teaching EB students in a rural location. The data sets were then integrated to provide insight for other rural school
districts with growing emergent bilingual student populations. This study posed three research questions:

- What are the national trends in emergent bilingual reading test scores?
- What opportunities and challenges do teachers encounter in meeting the literacy needs of emergent bilingual students in rural areas?
- How does the convergence of national literacy data and experiences of rural teachers provide insight for rural school districts with growing emergent bilingual populations?

**Summary of Quantitative Findings**

The data for the quantitative strand, used to answer research question one, was obtained as secondary data from the National Assessment of Educational Progress (NAEP, 2021). National public school NAEP reading scores for both 4th and 8th grade from 2003, 2007, 2015, and 2019 were used to run simple and multiple linear regressions. The analysis of the data found that there is a statistically significant difference in reading scores between students who are identified as EB compared to students who are not EB. This gap is evident in: (a) both 4th and 8th grade levels, (b) all four included years of NAEP Reading test scores, and (c) in urban, suburban, town, and rural locations. The quantitative data analysis establishes a nationwide trend of NAEP EB students scoring lower than their non-EB peers in all locations.

**Summary of Qualitative Findings**

The data for the qualitative strand came from a case study of a small rural school district and was used to answer research question two. The Stanley School District
consists of less than 400 students with 23.4% identified as EB and since Stanley has such a small student population, there are only three teachers who teach English language arts in 4th – 12th grades. Two of these teachers met my inclusion criteria and agreed to participate in this study. The participants described professional development issues related to EB literacy, and overall opportunities and challenges teaching EB students in a rural school district. Three main themes emerged from this study: access, gaps, and possibilities. The theme of access was most prevalent in the case study, including access to: (a) professional development opportunities, (b) ongoing learning regarding EB students, and (c) resources and materials. The theme of gaps provided further details about the Stanley School District’s issues regarding staff turnover and lack of consistency and fidelity of district programs. And the final theme of possibilities demonstrates some of the benefits of a small district including: (a) close knit community, (b) use of funds of knowledge, (c) and improvements related to reliable internet.

Summary of Integration

The integration of the quantitative and qualitative data answered research question three. The integration presents the national EB literacy trends, including the gaps between EB and non-EB students based on location, and informative data regarding the impact of opportunities and challenges teaching EB students in rural schools have identified. The national EB achievement gap has persisted throughout the four years of included NAEP reading tests, which resulted in further research to identify the causes. The integration of the data provides support and evidence regarding the specific situation of one rural district to better understand possible influences on the EB achievement gap.
Limitations

A noteworthy limitation of this study is the impact of the unexpected Omicron variant as part of the ongoing COVID-19 pandemic, which particularly hit rural schools in Colorado hard during the 2021 – 22 winter months. The qualitative methodology originally intended to recruit additional rural districts, with each district being considered its own case study, which would then allow the cases to be compared. However, due to severe staffing shortages and the extra work required of rural educators to create both in person and virtual lessons, a number of school districts did not feel comfortable asking their teachers to do additional work, including participating in this research study.

Another limitation connected to the COVID-19 pandemic, was the changing of data sources for the case study. I originally intended to observe classrooms, specifically to see vocabulary and reading comprehension lessons, however, this type of data collection was removed in response to school policies regarding COVID and visitors. The interviews with participants did provide useful data regarding rural education, however, if given an opportunity to conduct more interviews with these participants and participants from other schools, I would have probed deeper into literacy. Zoom was very useful and allowed participants to conduct their interviews at their convenience, three of the interviews were conducted while the participants were at home. However, this is a limitation because the participants did not have their training certificates, textbooks, or other materials available during the interview, and which then required follow-up emails afterwards to obtain additional information.
Significance

This research study adds to the growing research regarding EB students in rural schools. The use of both quantitative and qualitative data recognized the national trend and achievement gap between EB and non-EB students, then provided examples of the opportunities and challenges that educators in rural schools encounter providing quality education to their EB and non-EB students.

The first significant finding of this research is that despite the achievement gap between EB and non-EB students on NAEP reading tests in urban, suburban, town, and rural areas, the analysis showed that rural EB students outperform their EB peers in both urban and town schools. EB students in rural schools scored an average of three points, in both 4th and 8th grade, better than their EB peers in urban and town schools. EB students in suburban schools outperformed their EB peers in urban, town, and rural schools by an average of nine points in 4th grade and eight points in 8th grade. To understand why rural EB students outperform EB students in urban and town schools and why suburban EB students outperform EB students in urban, town, and rural schools, further research must be conducted.

The second significant finding of this study are the major challenges that teachers and school districts in rural areas face. This study provides evidence that demonstrates the needs of rural educators and support the difficulties of finding continuing education opportunities. The major themes of access and gaps demonstrate the challenges for rural educators. The theme of access is supported by research from Hansen-Thomas et al. (2016) who surveyed 159 rural educators in Texas regarding professional development
needs for teaching English language learners. Hansen-Thomas et al. (2016) found that, “with regard to teachers’ needs, 25% indicated lacking knowledge in literacy strategies for ELLs” (p. 316). Lack of educational resources and relevant learning materials is supported by Johnson et al. (2018) who found that rural districts faced complex, and a wide range of challenges related to the changing demographics of rural student populations. Research from Lee and Hawkins (2015), supports the difficulty with pursuing training related to EB students when the rural district is geographically isolated from colleges and universities.

The theme of gaps focusing on staff turnover and difficulty recruiting and retaining qualified educators is supported by research from Lee and Hawkins (2015) who studied five rural school districts in Wisconsin with similar issues. Goldhaber et al. (2020) examined teaching vacancies throughout California and found that, “on average, rural districts have meaningfully and statistically higher overall vacancy rates than districts in any of the other geographic types” (p. 9). Yoon et al. (2019) researched school vacancies in Montana examining teachers, administrators, and licensed professionals positions and found that these were 40% more difficult to fill in remote rural districts. Lack of consistency and fidelity of implementing district programs was difficult to find research and support beyond the issues related to implementation of the Common Core State Standards (Lopez & Wise, 2015). Although the focus on literacy concerns was minimal, the greater needs of rural education provided useful information regarding the challenges facing rural schools and teachers.
The third significant finding of this research is that unlike the rural research included in the literature review, this study also examines the benefits of rural education including, smaller class sizes, community support, and the positive impact this has on EB student learning. The theme of possibilities, supported by research from Johnson et al. (2018) demonstrates the strong community involvement in rural EB students’ education. Lai and Widmar (2021) found that increased community connection to schools led to including and using more funds of knowledge in the classrooms. Hansen (2010) explains that teachers, “seek out opportunities for schools to see students’ homes as ‘funds of knowledge’, and in so doing, build a bridge between... home and school” (p. 34). And recent research regarding the impact of the COVID-19 pandemic, have found that rural broadband and internet access has greatly improved compared to pre-pandemic (Lai & Widmar, 2021; Longhurst & Thier, 2021). The themes of access, gaps, and possibilities provide examples of both opportunities and challenges teachers face in rural areas.

**Future Research**

I have also identified a few interesting areas of future research. First, this study would benefit from being replicated in other rural school districts, and potentially in other states. The replication would provide additional data regarding opportunities and challenges, which can be used to determine regional educational needs. With a greater focus on literacy, the identification of regional needs would then assist the state’s department of education in providing relevant trainings aimed specifically at rural schools. Replicating the study in additional districts would allow for cross-case comparisons and provide more in depth generalizations that could lead to greater transferability. Figure 5 demonstrates
how multiple case studies can be used to identify greater themes, similarities and differences across cases, and provide generalizations (Creswell and Poth, 2018). Additional cases would provide further evidence clearly identifying what teachers and students need to continue to be successful.

Secondly, this study can be used as a starting point for conducting further research related to the NAEP reading achievement gaps between EB and not EB students based on other locations. Rather than replicating the study in other rural districts, the study could be replicated in other locations like urban, suburban, and towns. The NAEP definition of these three locations are found in Appendix A. The study replication in different locations could also follow the multiple case plan and analysis in Figure 5. By replicating this study and comparing different locations, there could potentially be data to explain why

Figure 5: Multiple Case Analysis Plan
the suburban EB student scores on NAEP reading are noticeably higher than the EB student scores in the other three locations. In addition, to further understanding the NAEP reading achievement gaps by location, data could contain additional opportunities and challenges that teachers perceive are relevant in these school districts.

Thirdly, future research specifically focusing on the positive aspects of rural education and the influence this has on EB student learning. This study could utilize classroom observations and interviews with school staff as well as EB students and their families. Highlighting the encouraging information from EB students, families, and educators, demonstrates that despite very large obstacles in the way of rural schools, they are stories of hope and perseverance.

**Implications**

There are also several implications of this study including further analysis of the NAEP reading tests focusing on EB literacy, providing rural educators equal access to professional developments, and offering rural schools resources and support. These implications could add further focus to the areas of future research previously identified.

**Emergent Bilingual Literacy**

The findings of the NAEP 4th and 8th grade reading tests from 2003, 2007, 2015, and 2019 demonstrate that there is a statistically significant achievement gap between EB students and non-EB students in urban, suburban, town, and rural locations. The NAEP Reading Framework (National Assessment Governing Board, 2019) identifies the content and structure of the 4th and 8th grade reading tests. At both grade levels, literary texts, and informational texts “measure students’ reading comprehension and their ability to
apply vocabulary knowledge to assist them in comprehending what they read” (National Assessment Governing Board, 2019, p. IX). The NAEP Reading Framework aligns with the literacy research identified in Chapter 2, which focused on literacy practices related to vocabulary and reading comprehension. However, the NAEP Reading Framework does not provide further detail regarding the texts that are used. With the growing population of EB students in the U.S., and the clearly demonstrated EB achievement gap, a greater effort must be made to use culturally relevant texts in standardized tests like the NAEP.

**Rural Professional Development Access**

The findings of this study demonstrate a strong need for quality professional developments aimed at rural educators focusing on EB teaching practices. A one size fits all approach to teachers and districts in Colorado does not often meet the needs of rural schools. With changes that occurred in response to the COVID-19 pandemic, virtual teaching, meetings, and learning opportunities are more widely accessible. It would be beneficial for trainers and professional development facilitators to provide virtual options so that educators in rural areas are able to receive the trainings typically only offered in person in larger cities. A majority of the rural districts in Colorado also operate on a four day school week which enables districts to provide or attend trainings on Fridays. Since rural schools often have substitute teacher shortages, it is difficult for rural teachers to attend trainings during their school day. Colorado has 178 school districts and 149 of these districts are rural, although collectively, this is only 16% of the student population, these districts and students deserve to have equal access (CDE, 2021a). The pertinent educational trainings are often focused solely on urban and suburban districts, which...
pushes rural districts further behind understanding and implementing the current best practices and evidence based educational trends. Additionally, presenters or trainers need to truly understand the unique context of rural schools: the significantly smaller student and teacher populations, the reality of school staff having multiple jobs within the district, and fact that some systems, i.e. MTSS, operate differently or in some cases, only when needed, is crucial to providing quality rural trainings. Creating rural specific trainings on major topics would be extremely valuable.

**Rural Resources and Support**

Although it might not be entirely feasible, creating a stronger support system in each of the BOCES regions would promote cooperation between smaller districts, who could then collectively request regional training opportunities for multiple districts. Stronger BOCES support could also promote the sharing of resources and materials related to EB students and in particular access to diverse texts. Despite the independent nature of rural school districts, working collaboratively with other districts, benefits everyone involved. In addition, this study’s significance for rural school districts allows them to examine their own opportunities and challenges and identify ways in which they can support EB students. Closer examination of each district’s curriculum choices, support materials, and knowledge of current best practices will help rural schools close the reading achievement gap.

**Summary**

Nationwide, there is a persistent reading achievement gap between students identified as EB and students who are not. This gap is present in urban, suburban, town, and rural
locations, and educational legislation, such as NCLB and ESSA, have been unable to close this gap. With the growing population of EB students in public schools, additional steps must be taken ensure the gap does not continue to grow. The case study of a rural school district provided awareness of the challenges rural educators must overcome to obtain trainings that provide skills, strategies, and programs to help EB students succeed in school. Despite the limited culturally relevant texts, EB students do thrive in rural communities that have established a strong and supportive environment in their schools.
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Appendix A: Key Definitions

**English learner** – The term ‘English learner’, when used with respect to an individual, means an individual — (A) who is aged 3 through 21; (B) who is enrolled or preparing to enroll in an elementary school or secondary school; (C)(i) who was not born in the United States or whose native language is a language other than English; (ii)(I) who is a Native American or Alaska Native, or a native resident of the outlying areas; and (II) who comes from an environment where a language other than English has had a significant impact on the individual’s level of English language proficiency; or (iii) who is migratory, whose native language is a language other than English, and who comes from an environment where a language other than English is dominant; and (D) whose difficulties in speaking, reading, writing, or understanding the English language may be sufficient to deny the individual — (i) the ability to meet the challenging State academic standards; (ii) the ability to successfully achieve in classrooms where the language of instruction is English; or (iii) the opportunity to participate fully in society. (Department of Education, 2016, ESEA Section 8101.20).

**Rural** – A Colorado school district is determined to be rural giving consideration to the size of the district, the distance from the nearest large urban/urbanized area and having a student enrollment of 6,500 students or less. Small rural districts are those districts meeting these same criteria and having a student population of less than 1,000 students. (CDE, 2019a).

**NAEP location definitions** (Nation’s Report Card, 2006).
City – City includes territories: inside an urbanized area and inside a principal city with population of 250,000 or more; inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000, and; inside an urbanized area and inside a principal city with population less than 100,000.

Suburb – Suburb includes territories: outside a principal city and inside an urbanized area with population of 250,000 or more; outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000, and; outside a principal city and inside an urbanized area with population less than 100,000.

Town – Town includes territories: inside an urban cluster that is less than or equal to 10 miles from an urbanized area; inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area, and; inside an urban cluster that is more than 35 miles from an urbanized area.

Rural – Rural includes census-defined rural territories that are: less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster; more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster, and; more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster.
### Appendix B: NAEP Data Category Options

**Table 11: NAEP Variable Categories**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Categories Within Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELL Status</td>
<td>ELL or Non-ELL</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, Two or more races</td>
</tr>
<tr>
<td>Gender</td>
<td>Male or Female</td>
</tr>
<tr>
<td>Location</td>
<td>City, Suburb, Town, Rural</td>
</tr>
<tr>
<td>Percent receiving ESL instruction</td>
<td>None, 1-5%, 6-10%, 11-25%, 26-50%, 51-75%, 76-90%, Over 90%</td>
</tr>
<tr>
<td>Percent enrollment identified as LEP</td>
<td>0%, 1-5%, 6-10%, 11-25%, 26-50%, 51-75%, 76-90%, Over 90%</td>
</tr>
<tr>
<td>Receive Title I funding</td>
<td>No, Yes for students, Yes for school purposes</td>
</tr>
</tbody>
</table>

*Note.* This table identifies the different criteria options available in NAEP Data Explorer.
Appendix C: Semi-Structured Interview Protocols

Semi-Structured Interview Protocol 1
Literacy Opportunities and Challenges

Date: __________________________ Time & Place: __________________________
Interviewer: ______________________ Interviewee: ______________________
Other: ____________________________________________________________

Research Project: This research project aims to examine opportunities and challenges educators encounter meeting the literacy needs of EB students in rural areas. EB is the term being used for students identified by the state of Colorado as ELL or EL for ACCESS and CMAS testing purposes. Protocol adapted from Stake (1995) and Yin (2018).

Introductory Questions:
1. How long have you worked at _________________ school district?
2. How long have you taught reading, writing, and/or language arts?

Literacy Content Questions:
1. What are some professional development trainings you have attended that were aimed specifically at literacy best practices for EB students? (i.e. vocabulary, reading comprehension, phonics, fluency)
2. What are some literacy challenges you have experienced meeting the needs of EB students at your school?
3. What are some literacy opportunities in teaching EB students in a rural school district?
4. What are areas of professional growth in literacy best practices that you are interested in and would be beneficial for your EB students? (i.e. vocabulary, reading comprehension, phonics, fluency)
5. How does the rural location of your school impact your abilities to seek new and relevant professional development literacy or EB teaching trainings?
6. Are there any other relevant information you can think of related to literacy and EB students that I did not ask?

Thank you for your time and insights on EB students literacy opportunities and challenges in rural school districts. I will follow-up with you in a few days to verify my notes from our session and schedule the second interview.
Semi-Structured Interview Protocol 2
Opportunities and Challenges of Rural Education

Date: ________________________________ Time & Place: ____________________________
Interviewer: ________________________ Interviewee: _______________________________
Other: ____________________________________________________________


Introductory Questions:
1. Have you attended any professional development or training related to applying culturally sustaining practices or funds of knowledge in your teaching practice with EB students?

2. As a teacher, have you used or considered using EB students’ language and culture to support the literacy practices in your classroom?

Content Questions:
3. What role does EB student knowledge from their homes contribute to the content and engagement of literacy lessons?

4. How do you view your EB students’ cultural identity, including language, literacy, and cultural practices, and its impact on your instruction? (i.e. deficit or asset based)

5. What are some ways in which you can connect your literacy classroom to EB student’s parents, community, and culture?

6. How would professional developments or trainings regarding culturally sustaining practices and incorporating funds of knowledge in classrooms beneficiate all teachers in your school?

7. How has the rural location provided opportunities or challenges to learning how to include funds of knowledge, or integrate a culturally sustaining pedagogy into your teaching practice?

Thank you for your time and insights on EB students in rural schools and the current knowledge regarding using a culturally sustaining pedagogy and incorporating funds of knowledge into classrooms. I will follow-up with you if any comments need further clarification.
Appendix D: Recruitment Email

Dear [insert name],

My name is Andrea Johnson, I am a Ph.D. student in the Curriculum and Instruction Department at the University of Denver. I am emailing to ask about participating in my doctoral research study. This is a study about emergent bilingual (or English language learners) literacy attainment in rural areas. I will be focusing specifically on the opportunities and challenges that language arts teachers in grades four through eight have experienced. Your district is eligible to be included in this study because it is a rural school district with an identified ELL/EB population of at least 10%. I obtained your contact information from the Colorado Department of Education District Dashboard and your school district website.

If you decide to participate in this study, you will be asked to complete two interviews on Zoom that will be an hour or less each. Participants will receive $25 for each interview they participate in. I would like to record the Zoom interviews so that I can relisten to information and pull direct quotations. The interview data collected overall, will be used to provide guidance for rural districts with growing emergent bilingual student populations.

Remember, this is completely voluntary. Attached is a flyer with further information. If you’d like to participate, or if you have any questions about the study, please e-mail or contact me at Andrea.Johnson@du.edu or 920-246-1795.

Thank you very much.

Sincerely,

Andrea Johnson, M.Ed.

Faculty Sponsor: Dr. Maria Salazar
Maria.Salazar@du.edu or 303-871-3772
OPPORTUNITIES AND CHALLENGES FOR RURAL EDUCATORS
Principal Investigator: Andrea Johnson, M.Ed.

Purpose:
The purpose of this University of Denver research study is to explore the opportunities and challenges related to teaching literacy to emergent bilingual students in rural Colorado. This study focuses on literacy practices, utilization of student culture and language in literacy, and thoughts regarding virtual learning for ELL/EB students.

Districts that have identified over 10% of their student population as ELL/EB can participate. Emergent bilingual is purposefully used instead of English language learners (ELL), English as a second language (ESL), or English learner (EL).

To participate in this research study, you must:
• Teach reading, language arts, or English
• Teach in grades 4-8
• Have taught in a rural school for at least 3 years
• You can teach multiple grades or subjects, but the focus will be on literacy in grades 4-8

Participation:
Participation in this study involves two one-on-one Zoom interviews (with possibility of a third interview) and participants will receive $50 for each interview:
• 1st Interview: literacy practices, opportunities, and challenges related to rural education and ELL/EB students, professional development related to ELL/EB students
• 2nd Interview: incorporation of student culture and language in literacy practices, use of Funds of Knowledge, and reflections on virtual learning with ELL/EB students.

Contact Information: For more information, or to participate in the interviews, please contact:
Andrea Johnson  
920-246-1795  
Andrea.Johnson@edu.edu  
Faculty Sponsor:  
Dr. Maria Salazar  
Maria.Salazar@edu.edu

This study has conditional approval from the University of Denver Institutional Review Board.
Appendix E: Verbal Consent

Verbal Consent Script

Introduction
I am Andrea Johnson a Ph.D. student in the Department of Curriculum and Instruction in the Morgridge College of Education at the University of Denver.

I obtained your contact information from the school district website after your superintendent granted me permission to contact teachers.

Subjects Rights
Your participation in this research study is completely voluntary. You can withdraw at any time. Choosing not to be in this study or to stop being in this study will not result in any penalty to you or loss of benefit to which you are entitled. Your choice to not be in this study will not negatively affect any rights to which you are otherwise entitled.

Description of the study and study procedures
I am conducting a research study to examine the opportunities and challenges that rural educators encounter teaching literacy to ELL/EB students. The data from this study can provide guidance for future areas of needs for rural districts, educators, and EB students.

The name of the study is Opportunities and Challenges for Rural Educators: A Mixed Methods Study of Emergent Bilingual Students in Rural Colorado. The IRB Project Number is 1833300-1. The person in charge of the study is Andrea Johnson.

If you agree to participate, you will be asked to participate in two semi-structured interviews over Zoom. The first interview will focus on literacy best practices teaching emergent bilingual students (ELL). The second interview will focus on to what extent culturally sustaining pedagogy is incorporated in your teaching practices and whether or not you include students’ funds of knowledge in your literacy lessons. The interviews will be recorded in order for the interview to be transcribed. The transcription will be used to examine interview answers and obtain direct quotes. The recording will only be kept for record keeping purposes as per the institutional policy and then will be deleted.

Risks
Your participation does not involve any risks other than what you would encounter in daily life.

Benefits
The possible benefits to you from this study include deeper understanding of the literacy needs of ELL/EB students and the value of incorporating culturally sustaining pedagogy.

Alternatives
You may choose to not participate in this research study.

Financial Information
As a participant, you will receive payment of $50 for each interview. The total of $100 will be paid to the participant after the completion of the second interview with cash or check sent to your personal address.

Confidentiality
Study records that can identify you will be kept confidential by coding data using both a pseudonym for your name, school, and school district. All data will be kept on a password protected computer, in a password protected Microsoft Teams folder. The Zoom recording will be deleted once the interview is transcribed. In the transcription, you will be identified using your pseudonym and the file will be kept in the PI’s OneDrive account. The recording will only be kept for record keeping purposes as per the institutional policy. The results of the research study may be published, but your name and school district will not be used.

Whom to contact with questions
If you have any questions or problems during your time on this study, you should contact Andrea Johnson, Curriculum and Instruction Department in Morgridge College of Education at 920-246-1795 or faculty advisor and sponsor, Dr. Maria Salazar, Professor of Teaching and Learning Sciences and Teacher Education Program at 303-847-3885.

If you have any questions regarding your rights as a research subject, please contact the University of Denver’s Institutional Review Board (IRB) Office at (303)871-2121.

Consent Section
Do you wish to participate? Record Subject’s response: Yes No

Do you agree to be audio-taped? (Audio recording through Zoom)
Record Subject’s response: Yes No

_______________________________________________
Name (printed) and Signature of Person Obtaining Consent Date

Do you agree to be video-taped? (Zoom recording)
Record Subject’s response: Yes No

_______________________________________________
Name (printed) and Signature of Person Obtaining Consent Date

If you would like a copy of this letter for your records, please let me know and I will email it to you.
### Appendix F: Example Codebook

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition or Description</th>
<th>Example</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>FoK</td>
<td>Funds of Knowledge frames the knowledge students acquired outside of school as valuable knowledge that adds to their learning. Value of different funds of knowledge that are learned at home including, agriculture, mining, material and scientific knowledge, economics, medicine, management, and religion. (Gonzalez et al., 2005; Moll et al., 1992)</td>
<td>Michelle - [students] brought back some Mayan tools; like they were actually in the Yucatan where the Mayans work[ed]. [They] brought back some candy from there with the Amaranth seeds in it that we’d studied about; one of the foods that the ancient Mayans [used].</td>
<td>Possibilities</td>
</tr>
<tr>
<td>PD</td>
<td>Ongoing and continual learning opportunities that develop or improve upon teaching skills and meet student needs.</td>
<td>Cindy: Basically, we have to rely on online classes for trainings. Occasionally, the BOCES has something. Michelle: I can think of one was called SIOP. S-I-O-P. Yeah, I think that was it, but we did that years ago, though. In the last 10 years, we've, I feel like we've had nothing.</td>
<td>Access</td>
</tr>
<tr>
<td>Resources and Materials</td>
<td>Textbooks, novels, leveled texts, nonfiction, audiobooks. Materials teachers have access to that they utilize to meet the needs of students.</td>
<td>Cindy (lack of resources): My curriculum that I have right now, it does have some ELL material to go along with some [emphasis added] of our stories, but not every single one. Cindy (lack of resources and materials): I've only ever used Google Translate and audiobooks.</td>
<td>Access</td>
</tr>
<tr>
<td>Vocab, compr, read, lit</td>
<td>Vocabulary, comprehension, reading, literacy – and specifically trainings or skills related to teaching these</td>
<td>Michelle: I mean, even this year, we just purchased a reading program last year, and the new teacher... she brought in stuff from their old school, they're using their own thing. Michelle: And I did go to the Orton-Gillingham training. But that's not approved by my school, so I don't get to use it.</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Related to the rural location of the school district and compared to major cities or towns.</td>
<td>Michelle: we've had a ton of turnover, [we] can't keep anyone here, no one who knows anything wants to come here. We're in the middle of nowhere.</td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>An opportunity that the rural school district is able to offer to students in comparison to larger schools and districts.</td>
<td>Cindy: the other student that's helping him, he's like, ‘I practice with him 20 minutes a day with his English’ (on his own time; close-knit and supportive community).</td>
<td></td>
</tr>
</tbody>
</table>