

Reading Outside of the Box: HBCU Preservice Teachers, Culturally Relevant Pedagogy and Letterbox Lessons

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Abstract

This study offers a preliminary investigation of gains in students' early literacy reading scores when historically Black college or university preservice teachers facilitate letterbox lesson interventions during field clinical experiences with at-risk readers using culturally relevant pedagogy and materials. The aims of this study were to (a) assess overall gains in reading and (b) examine more specific gains in phoneme awareness, letter naming fluency, decoding, and spelling. Using *t*-test comparisons, results indicate significant gains between the administered pre- and post-reading assessments on phonemic awareness development, letter naming fluency, and spelling abilities. The findings suggest culturally relevant pedagogy combined with clinical letterbox interventions may particularly support the reading achievement of at-risk readers. Additional research is needed to better understand the impact of historically Black college or university preservice teachers' use of culturally relevant materials and pedagogy and field clinical letterbox interventions with at-risk readers.

Keywords: early childhood literacy, Elkonin boxes, HBCU preservice teachers, culturally relevant pedagogy

Introduction

Limited research exists on the implications of using letterbox lessons to measure reading gains of at-risk, struggling readers. Moreover, the impact of preservice teachers (PSTs) receiving culturally relevant intervention training to assess students, design and implement reading intervention curricula, and analyze the results of these interventions has yet to be explored. This quasi-experimental mixed methods study sought to probe the effectiveness of one-on-one tutoring interventions performed by PSTs enrolled in a historically Black college or university (HBCU) educator preparatory program and trained in culturally relevant reading pedagogy. More specifically, this study focuses on gains of emergent readers identified as possessing difficulties in one or more areas of reading, including phoneme awareness, blending, letter naming fluency, and spelling.

With a desire to develop and disseminate culturally relevant pedagogy, the researcher, who is also the first author, is now employed at an HBCU. The PSTs, who the researcher now serves, represent racial and socioeconomic minorities, and many are first-generation college students. One of the researcher's curricular goals is for the HBCU PSTs to understand that they exist in a unique role to examine positionality when engaging the students they will one day serve. That is, one goal is to understand the ways they might leverage their own minoritized and cultural

backgrounds and experiences to better connect with their future students. The PSTs are expected to teach in lower-performing urban schools, and this knowledge will be essential when as they create, implement, and evaluate curriculum in their classrooms after graduation (Irvine & Fenwick, 2011; Petchauer & Mawhinney, 2017).

Overview of the Study

The study is contextualized within the academic traditions of HBCUs, which have and continue to produce large numbers of Black graduates (Collins, Davis, & Hilton, 2013; Gasman et al., 2016). More specifically, HBCUs play an important role in the preparation of teachers, which is essential to developing literacy among many Black Americans (Irvine & Fenwick, 2011; Petchauer & Mawhinney, 2017). While there exists a plethora of studies that examine the impact of Black PSTs at predominately White institutions (PWIs; Brown, 2014), the present study offers a departure from existing literature by emphasizing the results of a literacy intervention program implemented by HBCU PSTs and how culturally relevant reading pedagogy training might impact student learning outcomes. This unique feature counters the many existing studies that emphasized the experiences of PSTs or teacher educators at non-minority serving institutions. With the ultimate goals of increasing student reading gains and improving upon teacher preparation techniques, HBCUs are uniquely situated to address K–12 reading disparities with systematic, culturally sensitive approaches.

For the purpose of this study, the authors define *culturally relevant pedagogy* by the tenets of its creator, Gloria Ladson-Billings (2001). *Culturally relevant teaching* is a term coined by Ladson-Billings (1992) to describe a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes. She argues that it urges collective action grounded in cultural understandings, experiences, and ways of knowing the world. In later work, Ladson-Billings (1994) identified three components of culturally relevant teaching: (a) the teachers' conceptions of themselves and others, (b) the manner in which classroom social interactions are structured, and (c) teachers' conceptions of knowledge. Specifically addressing the needs of African-American students, she states that the primary aim of culturally relevant teaching is to assist in the development of a relevant "Black" personality that allows African-American students to choose academic excellence yet still identify with Africana and African-American culture. As this description implies, culturally relevant teachers must be observant and alert to students' classroom behaviors and communications, verbal and nonverbal. Consequently, there is no "one size fits all" approach to culturally relevant teaching; i.e., every student must be studied individually, and stereotypes about a particular group must be discarded. In utilizing culturally relevant materials, students are able to see and create alternative narratives, engaging more actively in their own education. Teachers who include these instructional and assessment practices into their classrooms make learning more appropriate and effective for culturally and linguistically diverse learners. By specifically using HBCU PSTs to implement this intervention, the authors sought to provide an example of effective letterbox lesson implementation when HBCU PSTs employ culturally relevant reading pedagogy in a one-on-one intervention setting and preliminarily study its impact on students' reading.

The aim of this study was to answer the following questions:

1. What are the effects of letterbox lesson interventions on overall gains in reading, phoneme awareness, letter naming fluency, decoding, and spelling by at-risk emergent readers when tutored by HBCU PSTs using culturally relevant materials and pedagogy in teacher preparation coursework field clinical experiences?

2. What elements of culturally responsive pedagogy do PSTs use to effectively implement reading interventions with Black students?

Review of the Literature

Letterboxes are an extension of the original Elkonin boxes, named after their creator, D. B. Elkonin (1973), who first reported the relationship between phonemic awareness and reading ability. Counters, or magnetic letters, are moved into paper squares which represent phonemes, or individual sounds, in words as students learn sound-letter correspondences, and eventually the letters can be replaced with the student simply writing each letter in the corresponding square without the aid of the pre-created letters (Keesey, Konrad, & Joseph, 2015). Clay (1993) greatly expanded the use of the Elkonin boxes by incorporating them into the popular Reading Recovery program, an intervention designed to improve reading and writing skills of first graders performing in the lowest 20% of their class. Clay found this instruction beneficial because the sound boxes (a) helped students hear the order of sounds in words; and (b) writing the letters of the words in their correct sequence required students to attend to the orthographic features of the word, thereby improving the efficiency of new word acquisition. Phonemic awareness gains have been demonstrated through individualized instruction with emergent readers (e.g., Joseph, 2000; McCarthy, 2008). Regardless of the variation, explicit, systematic methods designed to improve phonemic awareness are successful for students at risk for reading failure.

Culture is central to how all learning takes place (Gay, 2010). Culturally responsive pedagogy (CRP) is a student-centered approach to teaching that includes cultural references and recognizes the importance of students' cultural backgrounds and experiences in all aspects of learning (Ladson-Billings, 1995). The approach is meant to promote engagement, enrichment, and achievement of all students by embracing a wealth of diversity, identifying and nurturing students' cultural strengths, and validating students' lived experiences and their place in the world (Villegas & Lucas, 2007). Culturally responsive pedagogy is characterized by teachers who are committed to cultural competence, establish high expectations, and position themselves as both facilitators and learners.

Preservice teachers trained to use CRP in one-on-one reading interventions have the ability to adjust their instruction according to the individual requirements of each student. Most reading intervention instructional models can be modified to incorporate CRP. However, CRP training for PSTs must be systemic, intentional, and high-quality. Researchers suggest that instruction should incorporate reading practices in meaningful contexts (Pressley, Allington, Wharton-McDonald, Block, & Morrow, 2001), and feature lessons in teaching decoding, phonological awareness, fluency, vocabulary, and comprehension (National Reading Panel, 2000). Some of the teaching approaches for CRP with struggling readers includes engaging activities, multicultural literature, responsive feedback, culturally relevant visual representations, intentional scaffolding, and teacher modeling.

Methods

Design

The study utilized a quasi-experimental, single-group, pretest-posttest design with a qualitative observational component. The researcher, who also served as the course instructor, trained the PSTs in administering pre- and post-tests, teaching letterbox lessons, and implementing CRP within the lessons.

Participants

This study utilized a convenience sample of PSTs enrolled in a required undergraduate reading education course at an HBCU in the southern region of the United States. As a prerequisite for teacher certification and graduation, PSTs are expected to be proficient in the teaching and assessment of basic literacy skills. Of the 29 PSTs in this study, all self-identified as Black with the exception of three (two identifying as White; one identifying as Latino); the sample of PSTs included five males, one identifying as Latino and one as White. The PSTs were trained to assess reading difficulties, to diagnose literacy issues, and to design data-driven reading intervention lessons for struggling readers using culturally-relevant representations contained in books, games, and other materials.

To select student participants, kindergarten through second-grade teachers at the university laboratory school evaluated reading assessment scores, using the Star Reading Assessment (Renaissance Learning, 2015)—an online reading assessment developed by Renaissance Learning for students in grades K–12, and classroom observations of students' reading abilities as a means to select student participants. The selected students ($N = 29$; kindergarteners = 10, first graders = 12, and second graders = 7), based on previously assessed reading skills and teacher recommendations, were in need of additional instruction in letter naming, phonemic awareness, letter-sound correspondences, and/or fluency. All participating students were Black.

Procedure

While in class, PSTs were instructed on two specific pedagogical frameworks for use during field clinical experiences: letterbox lessons and culturally responsive pedagogy. Letterbox lessons followed a routine procedure. For each lesson, PSTs assessed student progress with a familiar book, taught the student a new letter-sound correspondence in a letterbox lesson, introduced a new book and scaffolded the student's oral reading, and helped the student write a message. Every week, PSTs wrote a brief reflection on the previous lesson and a plan for the lesson to be taught during the next session.

PSTs were trained in CRP, a method by which they matched instructional materials with each student's interest, culture, and/or home language. PSTs were tasked with creating materials that featured characters with similar representations as their students. PSTs were not allowed to use commercially produced texts or printed materials, but rather they created learning centers for their students that represented and celebrated the diaspora of the African American experience. According to Gay (2002), culturally responsive teaching uses "the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively" (p. 106).

Using the pretest scores (collected at the beginning of PST field clinical placement, approximately four weeks into each semester), to account for students' instructional needs, the PSTs strategically designed lesson plans. Over ten weeks, one-on-one tutoring sessions occurred twice weekly. PSTs measured progress using similar post-assessments at the conclusion of tutoring, according to best practices as outlined by Lipp and Helfrich (2016). Additionally, at the conclusion of the lessons, the PSTs wrote literacy reports on student progress, and these data were disseminated among classroom teachers, caregivers, and the course instructor. The report recorded observations of student behavior, explanation of content, discussion of student abilities and needs, and recommendations for teachers and caregivers. The instructor/researcher evaluated the PSTs on five tenets (i.e., rereading and assessment, codebreaking, introducing new texts, writing, and cultural relevance) and then issued an evaluation score.

Observations

The qualitative data analysis process involved a five-step method: (a) recognition, (b) examination, (c) coding, (d) sorting, and (e) synthesis (Rubin & Rubin, 2005). Recognition, examination, and coding involved preparing the data. Sorting and synthesis involved analyzing the data. Using PST weekly lesson plans, reflections and observational field notes, the instructor/researcher used artifacts from the course as qualitative data. The instructor provided immediate feedback during the reading sessions. PSTs were required to submit lesson reflections whereby they, too, would reflect upon the effectiveness of their lessons and ways by which they might be able to improve upon their instruction during future sessions. The development of the PSTs' reflectiveness and critical analysis skills over time was best established once the data were compiled and coded into themes. The findings from the data provided a glimpse of the CRP factors that may influence PSTs' knowledge base and thus affect their ability to effectively implement reading interventions with Black students.

Measures Used to Assess Reading

To assess pre- and post-test reading skills, PSTs utilized the designed letterbox interventions and a corresponding data collection worksheet of students' performances. To allow for comparative posttest scores, PSTs used the same grading metric following the reading intervention. Scoring for the individual reading tasks are outlined as follows:

Letter naming accuracy and speed. To assess letter recognition, PSTs timed each student's ability to name 54 letters presented in a random order, accurately. The letters were written in both upper- and lower-case forms. PSTs noted both the accuracy and the time it took for students to identify the letters. Scoring varied based on performance (i.e., 40 words correctly identified in 1.5 minutes would denote weak letter naming accuracy of a non-fluent letter recognizer).

Phoneme identities. To assess phoneme awareness, PSTs asked students to repeat a sentence and then check for a phoneme. For instance, the PST would read, "Do you hear /m/ in the word *man* or *can*?" Students who were able to correctly identify a certain percentage of the sounds in spoken words are said to be phonemically aware. Students' inability to recognize speech sounds in spoken words suggested difficulties in learning to decode. Scoring was broken down based on accuracy; those with "little" phoneme awareness identified (0–27) phonemes correctly, those with "growing" phonological awareness provided (28–33) correct responses, and those labeled as possessing "well-developed" phonological awareness provided (34–38+) correct responses.

Phonetic cue reading. In the test of phonetic cue reading, PSTs asked students to use the beginning letter of a word to identify the word. For example, the pre-service teacher showed a word written on a card, e.g., *TIME*, and asked the student if it was *LIME* or *TIME*. The students only had to use the first letter to get the correct answer. The results of this assessment determine whether students are able to use beginning letters of words to cue the pronunciation and distinguish rhyming words.

Pseudoword reading. For the pseudoword reading test, students were shown nonexistent, made-up words with pronounceable spellings. For example, students were asked to read words like *pim* or *refenderable* to determine their ability to decode unfamiliar words. This component of assessment allowed for 15 instances where students were asked to decode sequentially with presented phonemes, via hierarchically formatted pseudowords (e.g., silent *e* to signal long vowels), or with polysyllabic words. This allowed for a maximum of 5 points, respective to each of the aforementioned levels, and an overall possible minimum of 0 and a maximum of 15 for pseudoword reading.

Clay dictation. For this test, students spelled out words in a sentence using invented spelling. This showed how many of the sounds within words students were able to capture with their spellings. Clay dictation responses of 32–35 indicated “above average,” those providing 36–37 at posttest indicated “good progress.”

Spelling stage growth. Students are categorized into one of four spelling stages based on the results of this assessment: pre-alphabetic, partial alphabetic, full alphabetic, or consolidated alphabetic. Pre-alphabetic stage spellers have not yet discovered that word spellings map out the pronunciation of words, and thus still look to language patterns and pictures for reading clues. Partial alphabetic stage spellers use the beginning letters in words, along with context and pictures, to help identify words, but are not able to sound out and blend the entire spelling. During the full alphabetic stage, spellers can accurately sound out and blend letters to identify an unfamiliar word, though slowly and with considerable effort. During the consolidated stage of spelling, spellers are able to remember many sight words and word chunks for easy and rapid recognition of new words; this includes words with two or more syllables.

Results

The quantitative data analysis process involved comparing pretest and posttest scores, with significant gains shown in the majority of measured reading outcomes. The results presented follow the order of the administered tasks. To address each research aim, the researcher examined each of the assessed subscale outcomes, and results for all comparisons are displayed in Table 1. While students did not meet the optimal goal of 54/54 on the letter naming task, significant growth was indicated by pre- and post-test mean scores ($M_{pre} = 50.93$, $SD = 5.88$; $M_{post} = 52.97$, $SD = .68$; $p < .001$). Initially, students struggled with the administered letter fluency task, which was designed to be completed under one minute; the average performance times were around 68 seconds ($SD = 30.61$). Students showed improvement on the follow-up assessment, ($M_{post} = 54.93$ seconds $SD = 5.22$; $p < .001$). Pretest phonemic identity scores indicated that students showed low levels of mastery prior to tutoring ($M_{pre} = 26.69$, $SD = 9.59$). On average, students showed significantly higher levels of phoneme awareness ($M_{post} = 31.17$, $SD = 4.97$; $p < .001$) after having received individualized tutoring. On average, the sample fell within the “pre-alphabetic” phase (scores ranging from 0–10) when considering phonetic cue reading ($M_{pre} = 9.62$, $SD = 2.86$). After prescribed reading interventions, only one student remained in the “pre-alphabetic” phase. Phonetic cue reading significantly improved; the majority of the students shifted into the partial alphabetic or beyond phase ($M_{post} = 11.62$, $SD = 1.21$; $p < .001$).

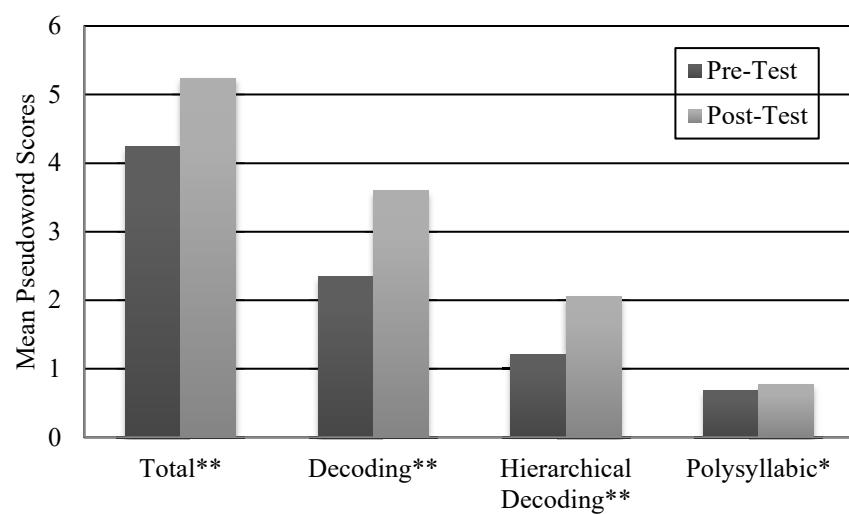
Table 1. *Descriptive Statistics of Pre- and Post-test Reading Scores*

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SE</i>	<i>SD</i>
Pre LETTERNAMINGACCURACY	29	24	54	50.93	1.09	5.88
Post LETTERNAMINGACCURACY	29	50	54	52.97	0.13	0.68
Pre_Letter Naming Speed	29	40	173	68.10	5.68	30.61
Post_Letter Naming Speed	29	43	75	54.93	0.97	5.22
Pre_Phoneme_Identities	29	0	38	26.69	1.78	9.59
Post_Phoneme_Identities	29	17	38	31.17	0.92	4.97
Pre_Phonetic Cue Reading	29	2	12	9.62	0.53	2.86
Post_Phonetic Cue Reading	29	6	13	11.62	0.22	1.21
Pre_Total_PSEUDOWORDREADING	29	0	14	4.24	0.70	3.78
Post_Total_PSEUDOWORDREADING	29	0	13	5.24	0.65	3.51

Pre_BLENDING	29	6	30	25.00	0.97	5.20
Post_BLENDING	2	4	29	16.50	12.50	17.68
PreSPELLING	29	14	37	31.07	0.89	4.77
PostSPELLING	29	22	37	32.93	0.64	3.43
Valid N (listwise)	2					

Note: Due to ceiling effect in pretest blending scores, 27 students were not assessed for post-blending gains.

When examining pseudoword reading, a more advanced skill that required application of the aforementioned skillset, results from tasks which required students to employ phonemic identity and blending abilities revealed an important trend (see Figure 1). While students showed pre- to post-score gains in overall task performance ($M_{pre} = 4.24$, $SD = 3.78$; $M_{post} = 5.24$, $SD = 3.51$; $p < .001$), students showed difficulty with more advanced pseudoword reading subtasks. Sample means moved from “weak” to “average” performance on tasks which required students to sequentially decode pseudowords, on average moving from 46% decoding accuracy to 72% accuracy ($M_{pre} = 2.34$, $SD = 1.798$; $M_{post} = 3.60$, $SD = 1.23$; $p < .001$). Tasks that required students to decode hierarchically (e.g., use silent e to signal long vowels) showed lower accuracy; average improvement shifted from 24% to 41% correctness ($M_{pre} = 1.21$, $SD = 1.52$; $M_{post} = 2.05$, $SD = 1.56$; $p < .001$). The lowest response accuracy gains occurred when students were asked to complete tasks that required them to decode polysyllabic pseudowords. On average, students in the sample showed 14% accuracy on pretest assessment, and posttest scores yielded only a 1% increase ($M_{pre} = .69$, $SD = 1.31$; $M_{post} = .77$, $SD = 1.23$; $p < .05$).

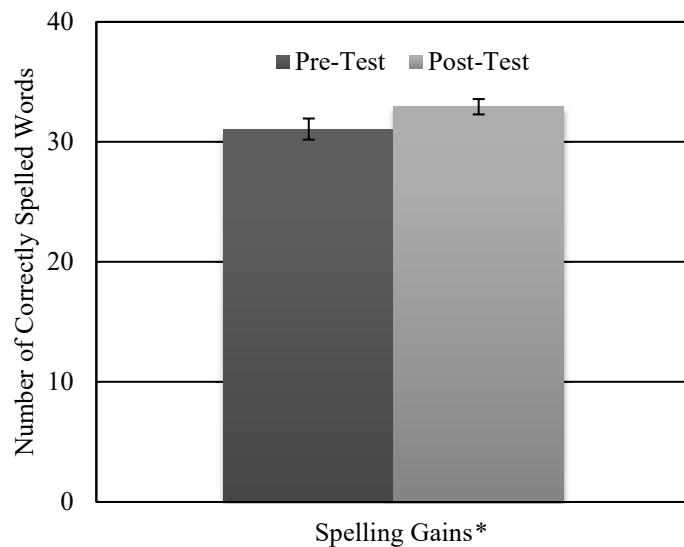


Note. * $p < .05$, ** $p < .001$.

Figure 1. Pre- and post-test mean pseudoword scores based on task rigor

Conversely, pre-test scores revealed that the majority of the sample had blending skills that were at or above grade level, and only four students had problems with blending (scores 16 and below; $M_{pre} = 25$, $SD = 5.19$). Blending posttest scores were only assessed for two of the four students who had problems with the initial task; thus, gains in blending could not be computed in the current sample. Significant gains in spelling were reflected by pre- to post-test scores ($M_{pre} = 31.07$, $SD = 4.77$; $M_{post} = 32.93$, $SD = 3.43$; $p < .001$, see Figure 2) where the number of correct

words spelled increased after the reading interventions. The average “spelling-stage” classification improved ($M_{pre} = 2.21, SD = .98; M_{post} = 2.93, SD = .70; p < .001$); at the time of pretest assessments, the majority of the sample fell within range of the “semi phonemic-spelling levels.” At the point of posttest assessments, the sample shifted to a “phonemic classification.” Finally, results indicate improvement in phase of word recognition ($M_{pre} = 31.07, SD = 1.01; M_{post} = 2.97, SD = .73; p < .001$). When examining overall pre- to post-test assessments, the sample mean shifted from a “partial alphabetic” classification to a “full alphabetic” classification. Given the goal of the research study, it can be deduced that overall gains in students’ reading abilities resulted from one-on-one letterbox interventions.



Note. * $p < .001$

Figure 2. Pre- and post-test spelling scores

Qualitative data from this study revealed that this particular HBCU teacher education preparation program’s CRP course framework influenced PSTs’ perception of their professional preparedness to teach in a diverse classroom and most likely impacted student reading gains positively. Exposure to culturally diverse learning experiences seemed to positively impact PSTs’ self-efficacy in teaching Black learners. Several PSTs acknowledged that during the first several sessions of field clinical experiences, they did not “feel prepared” to teach at-risk readers. They reported feeling “nervous” about the experiences. Conversely, when reflecting upon their ability to manage student behavior, relate socially or identify with their individual students, most PSTs reported feeling “very comfortable” with the task. The first author noted the innate rapport that the HBCU PSTs were quickly able to establish with the children, a connection that research has long acknowledged as a framework for positive educational outcomes in Black students (Egalite, Kisida, & Winters, 2015).

The researcher also noted the high visibility of Black and Latina representation within the PSTs’ selected teaching materials. Learning centers designed by PSTs featured Black females, African attire, natural hairstyles, images of young, Black celebrities, and even the most popular dances among millennials. The researcher observed PSTs using dance and movement with students as a reward system during break times. Reflections from PSTs generally noted that the use of popular dance and music was a means by which to “connect with the students” and created opportunities for “bonding” between PSTs and students. In many ways, the HBCU PSTs celebrated their own culture, thereby allowing them to more freely celebrate the communities of cultural wealth from which the students arrive. The power of this unique synergy between the teachers and the learners

created a reciprocity that almost seemed to strengthen the literacy learning sessions. The funds of knowledge goal is to use the students' household knowledge, cultural funds, and skills to inform classroom practices (González, Moll, & Amanti, 2005). The PSTs use of students' cultural funds of knowledge was yet another observation that emerged from as a result of data coding.

Discussion

The use of CRP by HBCU PSTs during letterbox lesson interventions with at-risk readers in the present study yielded student reading gains. The researchers infer that because the reading interventions were tailored to the students' individual cultural needs and interests, the gains may be linked to this tutoring modality and the PSTs' CRP training. Indeed, the observations confirmed that the PSTs employed elements of their CRP training when working with their students. And while this study is exploratory in nature and reminds educators and researchers that important insights can arise from simple program analyses, there, too, are risks to note. The foundation of systemic racism in literacy and how it has impacted students of color through policy and teaching methods are well-established. The authors do not suggest that commercial reading intervention programs, like Reading Recovery (Clay, 2005a; 2005b), are consciously failing to meet the needs of Black children; however, such programs do point to the need for more research in the culturally relevant reading assessments for Black students. It is important that future researchers consider the cultural funds of knowledge that both the students and the teachers bring to the classroom. Children can be helped to master the materials presented in the classroom by building upon their existing knowledge and interests. The PSTs in this study designed reading stations specific to the interests, cultures, and identities of the students. Future research on this and other similar programs might examine if children's deficits are a product of the mismatch between previous experiences and school tasks.

It is also important to note that while letterbox lesson interventions are more cost-efficient than the commercial Reading Recovery program, these programs are not without challenges for classroom teachers (Clay, 2005a; 2005b; Lipp & Helfrich, 2016; Murray & Lesniak, 1999). The demands placed on teachers from administrators and time constraints make one-on-one reading interventions difficult for the average elementary educator. The argument for the preparation and training of PSTs to thoughtfully implement modifications of these assessments and techniques in their classrooms in an effort to improve their craft has been made (Clay, 2005a; 2005b; Lipp & Helfrich, 2016; Murray & Lesniak, 1999). This issue focusing on assessment is particularly germane in urban schools where reading scores often lag behind. Black children and other children with diverse backgrounds may require more time to master the tasks and meet established standards for success.

Due to the limited sample size and subsequent power restraints, there were some questions of interest that could not be addressed (i.e., differences across grade levels). Future research may seek to answer the following questions: (a) Do student interests significantly impact observed gains in phoneme awareness, spelling, phoneme-to-grapheme correspondence, and/or spelling fluency? and (b) Do PSTs' instructor evaluation ratings and reading education course grades correlate with students' gains in phoneme awareness, spelling, phoneme-to-grapheme correspondence, and/or spelling fluency gains? As educators and researchers alike aspire to increase students' reading gains, the continued examination of unique techniques that improve the early literacy scores in emerging readers is vital. Students in urban, low performing schools often struggle with linguistic development during language-based experiences (Terry, Conner, Johnson, Stuckey, & Tani, 2016); so, this initial investigation offers a novel avenue of research on assessment, intervention techniques, and culturally relevant pedagogical PST training which warrant further probing.

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