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The relationship between children's nonmainstream English dialect density and their emergfent reading achievement

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THE RELATIONSHIP BETWEEN CHILDREN'S NONMAINSTREAM ENGLISH DIALECT DENSITY AND THEIR EMERGENT READING ACHIEVEMENT

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ABSTRACT

The purpose of this study was to examine the relation between children's use of nonmainstream dialect and their emerging reading ability. The data were from 79 kindergarteners; 39 were AA and 40 were non-AA; 38 were male and 41 were female. All children presented with varying language abilities and dialect densities, as measured by the DELV-ST. Dialect densities ranged from Mainstream American English (MAE), some variation of MAE, and strong variations of MAE. The children's reading abilities were measured by the DIBELS, which was administered at the beginning, middle, and end of the school year.

Preliminary results showed that children's mean DIBELS scores significantly increased over time. In addition, their mean reading scores were above benchmark cutoff scores at all testing sessions, indicating that on average, the nonmainstream English-speaking kindergarteners were not at risk for reading failure. When analyzed by race and gender, a main effect was found for race but not gender. Given this, analyses were completed on the AA and non-AA children separately to examine the relationship between the children's dialect ratings and their emerging reading abilities.

For both the AA and non-AA groups, their children's rates of nonmainstream dialect density were related to their DIBELS scores. This finding was documented in two ways. First, for both races, the children who earned low DELV-ST ratings produced higher DIBELS scores than those who earned moderate and high DELV-ST scores. Second, for both races, there was a negative correlation between the children's DELV-ST ratings and their DIBELS scores. Nevertheless, an item analysis of the GFTA suggested minimal overlap between the children's nonmainstream English productions and the target sounds included within the items of the DIBELS.

Together these findings suggest that children's nonmainstream dialect use negatively relates to their reading abilities, and this negative relationship exists for both AA and non-AA children. This negative relationship also exits in spite of finding minimal overlap between the children's nonmainstream sound productions and the target sounds included within the items on the DIBELS.

INTRODUCTION/REVIEW OF LITERATURE

As discussed by Jencks and Philips (1998), the average score of African American (AA) students is 75% lower on national, state, and school standardized tests than that of non-African American (non-AA) students. This score disparity, most commonly known as the "Black-White Achievement Gap," emerges before kindergarten and increases as children age. Despite this statistic, not all American black students perform below American white students or established norms; however, a significant number of American black students are represented in the lower extremities of academic standardized score distributions. As explained in Jencks and Phillips (1998) and Thompson, Craig, and Washington (2004), reasons for this gap may be attributed to many factors, one of which may be the many language differences, or dialects, that exist within the African American English-speaking community (Bland-Stewart, 2005; Craig & Washington, 1994; Washington & Craig, 1992).

Dialects are defined as variations of a language that are shared by groups of people (Wolfram & Schilling-Estes, 1998). Each dialect of a language has a unique set of complex, rule-governed linguistic structures. The most common dialect of American English is Standard American English (SAE), and any dialect that deviates from SAE is often considered nonstandard or nonmainstream. Nonmainstream dialects are also usually "socially stigmatized" (American Speech-Language-Hearing Association [ASHA], 2003; Washington & Craig, 1994; Wolfram & Schilling-Estes, 1998). Some dialects spoken in the South include African American English (AAE), Appalachian English, Southern White English (SWE), and Cajun/Creole English (CE) (ASHA, 2003; Oetting & Garrity, 2006; Wolfram & Schilling-Estes, 1998). These various dialects exist due to "historical, social, linguistic, and geographical factors," and within these

different dialects, a significant amount of variability exists among individual speakers (ASHA, 2003).

Previous, nonmainstream dialect research has mainly focused on AAE (Connor & Craig, 2006; Craig & Washington, 2002; Craig, Thompson, Washington, & Potter, 2003; Craig, Zhang, Hensel, & Quinn, 2009, Isaacs, 1996; Jackson & Roberts, 2001; Kohler et al., 2007; Oetting & Pruitt, 2005; Seymour, Bland-Stewart & Green, 1998; Washington, Craig, & Kushmaul, 1998). Because most AAE speakers use both a large variety and high frequency of nonmainstream English patterns, Oetting et al. (2010) view AAE as "a model system" for examining the effects of nonmainstream English on various child language measures. Oetting and McDonald (2001, 2002) also found that the dialects of AAE and SWE share many nonmainstream grammatical structures. Given this, the current study examines data from both AA (and AAE-speaking) children and non-AA (and SWE-speaking) children even though the literature on nonmainstream English is based primarily on studies of AAE-speaking children.

In the United States, SAE, or Mainstream American English (MAE), is the form of American English that classroom textbooks, curriculums, and teachers use in schools (Baratz, 1969; Jencks & Phillips, 1998; Wolfram & Schilling-Estes, 1998). Nonmainstream American English speakers, such as those that speak AAE or SWE, have "distinctive and predictable characteristics that are different from those used by SAE speakers" (Bland-Stewart, 2005, p. 5). Therefore, a dialectical discrepancy exists for children who enter school using nonmainstream forms of English, and this discrepancy may place them at a disadvantage in classrooms (Baratz, 1969; Craig & Washington, 1994; Washington et al., 1998). In addition to the school curriculum, most standardized assessments are based on MAE vocabulary and linguistic rules, which can potentially threaten the validity of these assessments for children who speak

nonmainstream dialects of English (Bland-Stewart, 2005; Thompson et al., 2004; Washington & Craig, 1992; Washington & Craig, 1998).

Because of the disparity between standard and nonmainstream English, children who begin kindergarten speaking a dialect other than Standard English may be at risk for academic failure – especially in reading. The goal of the current study was to examine the relationship between children's use of nonmainstream English and their reading achievement.

The literature review is organized into three sections. First, I present two positions represented in the literature on the relationship between children's use of nonmainstream English and their reading ability. Within this section, potential difficulties nonmainstream English speakers exhibit in reading acquisition and code-switching are discussed. The second section describes the *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS; Good, Gruba, & Kaminski, 2009), a widely used index of children's reading ability. Third, I discuss research on children's rates of nonmainstream English and describe the *Diagnostic Evaluation of Language Variation – Screener Test* (DELV-ST; Seymour, Roeper, & de Villiers, 2003) as one measure that can be used to quantify children's use of nonmainstream English. The chapter concludes with a description of the present study.

Reading

Within the literature, two positions exist regarding the relationship between children's use of nonmainstream English and reading. On the one hand, children's use of nonmainstream English has not been proven to directly and singularly affect the production and comprehension of MAE phonological and morphosyntactic features to a degree that significantly impacts children's reading scores (Craig et al., 2009; Washington & Craig, 2001). Reasons a child's use of a nonmainstream dialect may not solely affect reading achievement could be attributed to

other factors identified within the literature. These include unequal opportunities due to past racial discrimination, low socioeconomic status as a result of parental income and level of education, poor literacy environments and parent-child interaction, and teacher's perception and low expectations for children who speak nonmainstream dialects (Connor & Craig, 2006; Good, Gruba, & Kaminiski, 2001; Washington & Craig, 2001). Therefore, rather than the use of nonmainstream English solely attributing to poor reading achievement, it may be one of many factors that influence children's literacy development and success.

In the study completed by Craig, Thompson, Washington, and Potter (2004), 65 typically developing African American students in second through fifth grade were administered the *Gray Oral Reading Test – Third Edition* (GORT-3; Wiederholt & Bryant, 1992), which is an assessment of reading ability that is written in Standard American English. Results yielded decreased reading accuracy and reading rate in children who used more nonmainstream phonological and morphosyntactic forms during oral reading than children who used fewer nonmainstream forms. However, results also yielded no correlation between the children's nonmainstream English dialect density and their reading comprehension. From these findings, Craig et al. (2004) concluded that factors other than dialect production contributed to the children's reading abilities.

On the other hand, research has shown that nonmainstream English speakers are placed at a disadvantage due to differences between their dialect and the linguistic features and rules taught in the classroom. Therefore, because classroom materials, curriculum, and teacher discussions within the school system take the form of written MAE, children who speak nonmainstream English may exhibit difficulty when learning how to read (Craig & Washington, 1994, 2004; Isaacs, 1996; Jencks & Phillips, 1998; Thompson et al., 2004). Research has shown

that due to mainstream and nonmainstream dialect differences in phonology, morphosyntax, lexicon, and semantics, nonmainstream English speakers either reduce MAE features within the text or insert features absent in the text during oral reading (Thompson et al., 2004; Washington & Craig, 2001).

In addition, Cunningham's study (1976-1977) reported that teachers tend to correct dialectal miscues in reading two and a half times more frequently than non-dialectal miscues. In this study, participants included 189 student teachers. These teachers were asked to complete two surveys, the *Miscue Attitude Questionnaire* and the *Black Dialect Recognition Questionnaire*. Both of these questionnaires ask teachers to indicate types of miscues they would typically correct in the classroom and the race of the child who typically produced each type of miscue. Results indicated that these student teachers corrected non-dialectical miscues 27% of the time and dialect-specific miscues 78% of the time. This finding shows that teachers respond differently to non-dialectical and nonmainstream dialect miscues.

Terry, Connor, Thomas-Tate, and Love's (2010) study included 617 typically developing African American and white first grade students. In this study, the authors examined the relationship between children's use of nonmainstream English and their literacy skills. Literacy skills included measures of vocabulary, phonological awareness, and word reading skills. Children who produced nonmainstream English more frequently exhibited weaker phonological awareness and receptive vocabulary skills than children who produced nonmainstream English less frequently. In addition, the relationship between the children's nonmainstream dialect density and word reading were found to be nonlinear, showing that children who produced nonmainstream English forms at moderately high rates had weaker word reading scores than those who produced low and high rates.

Terry et al. (2010) offered three hypotheses regarding the relationship between children's nonmainstream dialect variation and their literacy skills – teacher bias, linguistic mismatch, and linguistic awareness. The first hypothesis attributes children's poor reading skills to teachers' negative presumptions of a nonmainstream dialect as uneducated "bad English," which may cause them to overreact to nonmainstream dialect use. Although the authors offered this hypothesis to explain their results, student-teacher interactions and teacher's opinions were not examined within the study.

The second hypothesis attributes poor literacy development to the linguistic mismatch between classroom text and speech. Children who use a variety of nonmainstream dialectical forms in speech may exhibit difficulty when they encounter a different word form or sentence structure while reading. The authors further speculated that the difficulty involves the need to reconcile standard letter-sound correspondences, grammatical forms, and other written forms that differ between their spoken and written language. However, Terry et al. (2010) note that poor literacy development cannot be entirely attributed to the linguistic mismatch due to the U-shaped relationship found between the children's nonmainstream dialect density and word recognition reading. Children who exhibited very high and very low use of nonmainstream English yielded similar scores on word recognition tasks, which suggests that the linguistic mismatch did not interfere with these children's abilities to read words.

Finally, the third hypothesis is the possibility that it is not children's use of a nonmainstream dialect but their linguistic awareness/flexibility (e.g., metacognitive knowledge of a language, more specifically phonology, syntax, semantics, morphology, and pragmatics) that relates to their reading achievement scores. Children who exhibit weakness in linguistic awareness, regardless of their nonmainstream dialect density, may experience difficulty with

reading achievement. In line with this hypothesis, Terry et al. (2010) suggested that the U-shaped relationship between nonmainstream dialect use and reading achievement may be attributed to a child's linguistic awareness and ability to dialect shift (linguistic flexibility).

Dialect shifting, also known as code-switching, is the ability for nonmainstream English speakers to shift away from their everyday dialect use toward MAE in certain contexts (Craig et al., 2009). Despite the disparity between mainstream and nonmainstream English, some nonmainstream English speakers understand MAE and learn to code-switch – using both MAE and nonmainstream English interchangeably depending on the environment and/or audience (Bland-Stewart, 2005; Craig & Washington, 2004; Craig et al., 2003; Isaacs, 1996; Thompson et al., 2004). According to Thompson et al. (2004), children who are able to communicate in mainstream and nonmainstream English are "better able to match the language demands of the classroom" (p. 272). Therefore, children who are unable to code-switch between dialects may exhibit difficulty comprehending MAE semantic, phonologic, and morphosyntactic forms, and this may place them at risk for literacy acquisition difficulties (Connor & Craig, 2006).

To evaluate this hypothesis, Thompson et al. (2004) administered an oral reading task, a picture description task, and a writing task to 50 typically developing African American third graders. All of the children were described as speaking a nonmainstream variety of AAE. Results yielded three major findings: AAE speakers produced variable amounts of AAE forms, AAE speakers exhibited distinct profiles, and AAE features were used more in oral contexts than literacy contexts. Within reading contexts, phonological features of AAE were the most prominent, and they were produced more than two times the number of morphosyntactic features. This outcome may be attributed to letter-sound relationships being more susceptible to change than grammatical sentence structure. Consistent with Craig et al. (2003), children in

third grade began to develop an understanding of conventional reading and writing skills and demonstrated decreased nonmainstream English dialect use in those contexts over oral contexts. This downward shift in nonmainstream dialect use across contexts represents a child's increased competence in the identification of bidialectical –MAE and nonmainstream American English – forms.

Research has shown that children from kindergarten through fifth grade who produce nonmainstream features at low rates yield higher reading achievement scores than their peers who produce nonmainstream features at moderate to high rates (Connor & Craig, 2006; Craig & Washington, 2004; Craig et al., 2009). In addition, Connor and Craig (2006) found that students who heavily used nonmainstream features also outperformed their peers who moderately used nonmainstream features on standardized reading achievement test. Both of these findings along with those of Terry et al. (2010) suggest that children who use nonmainstream English forms with moderate frequency could be at the highest risk for reading difficulties.

Reading as Measured by the DIBELS

The *Dynamic Indicators of Basic Early Literacy Skills* and *Dynamic Indicators of Basic Early Literacy Skills Next* (DIBELS; Good et al., 2001; Good et al., 2009) was developed to identify children experiencing difficulty acquiring basic early literacy skills. It can also be used to monitor children's progress and evaluate the success of reading intervention by measuring reading skills over time (Kaminski & Cummings, 2008). The tool is appropriate for children from kindergarten through sixth grade who exhibit potential difficulty developing literacy skills without additional, instructional guidance. The DIBELS is administered three times throughout the school year: at the beginning between months one through three, in the middle between months four through six, and at the end between months seven through nine. Typically, children

are tested in September, January, and May. The DIBELS is a brief, easily repeated, and school centered assessment that can be administered and scored within the schools by the staff (Elliott, Lee, & Tollefson, 2001).

Four subtests of the DIBELS are administered during the kindergarten year. These four include: First Sound Fluency (FSF), Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF), and Nonsense Word Fluency (NWF).

The FSF subtest assesses children's phonemic awareness by asking them to identify the initial sound in words. During DIBELS administration, the administrator verbally presents 30 words (e.g., man, moon, street, sun) to the child, and the child is instructed to say the first sound of each word. The child is allotted one minute to complete these thirty items. Two points are awarded for the correct initial sound and one point is awarded for correct initial blends and correct initial syllables. For example, if the child is presented with the word "spring," two points are awarded if the child produces the correct initial sound "s." One point is awarded if the child produces "sp," "spr," or "spri."

The LNF subtest, which indicates risk, requires children to name as many upper- and lower-case letters arranged in a random order as they can. During DIBELS administration, children are given a piece of paper with randomly arranged upper and lower case letters (e.g., s s M o R F i j) and allotted one minute to name as many letters as they can. The child is awarded one point for each correctly named letter.

The PSF subtest, which also assesses phonological awareness, requires children to segment three- and four-phoneme words into the individual phonemes. During DIBELS administration, the administrator presents three- and four- phoneme words (e.g., wheel, cat, of, beach), and the child is instructed to tell the administrator all of the sounds in the word

presented. The child is awarded one point for each correctly identified phoneme in the word presented. According to the test manual, the child should not be penalized for elongated sounds, inserted schwa sounds, articulation and dialect differences, or added sounds that are separately segmented from the other individual phonemes within the word (Good et al., 2010). The child is penalized for incorrect sound substitutions, omitted sounds, and incorrect segmentation of phonemes.

The NWF subtest assesses a child's understanding of the alphabetic principal by measuring the child's ability to sound out VC and CVC nonsense words or letters. The NWF subtest is divided into two supplemental scores: number of Correct Letter Sounds (NWF CLS) and number of Whole Words Read (NWF WWR) without sounding out. During DIBELS administration, children are presented with VC and CVC structured nonsense words and instructed to either sound out each individual letter or read the whole word (e.g., sim, pol, kej, fom). For the NWF CLS, the child is awarded one point for every correctly identified sound. For NWF WWR, the child is awarded one point for every correctly read nonsense word.

DIBELS benchmark goals were developed to determine a child's need for additional instruction (see in Appendix A). According to the test developers, children who are at or above the benchmark goal are likely to develop adequate early literacy skills and reach benchmark goals with typical classroom instruction. Children who are not identified as at risk yet fall below the benchmark goal exhibit a 50-50 chance of developing adequate early literacy skills, and therefore require specific, additional instruction to ensure that they reach these reading benchmarks. Children who are identified as at risk require intensive, additional instruction because without it, they are unlikely to achieve reading benchmarks (Good et al., 2010).

Multiple studies have investigated the reliability and validity of the DIBELS. In one particular study by Elliott, Lee, and Tollefson (2001), 75 kindergarten children (63% white and 37% non-white) from various classrooms and schools were repeatedly administered a modified version of the DIBELS (DIBELS-M). This version included Letter Naming Fluency, Sound Naming Fluency, Initial Phoneme Ability, and Phonemic Segmentation Ability. Testing occurred in two-week intervals for nine weeks, and participants were allotted additional time for responding. Three types of reliability were measured within the study: interrater reliability, test-retest reliability, and alternate forms reliability. Interrater reliability was calculated for each of the individual subtests and was shown to be between 82% and 94%. Test-retest reliability was also calculated for each of the individual subtests and was shown to be between 74% and 93%. Finally, equivalent forms reliability was calculated for each of the individual subtests and was found to be between 64% and 91%.

Concurrent validity of the average DIBELS-M scores over repeated administrations was measured against multiple criterion measurements. These were: the *Kaufman Brief Intelligence Test* (K-BIT; Kaufman & Kaufman, 1990), *Test of Phonological Awareness* (TOPA; Torgesen, & Bryant, 1994), *Developing Skills Checklist* (DSC; CTB Mcmillan/McGraw-Hill, 1990), an informal teacher's pre-reading rating questionnaire, and the *Woodcock-Johnson Psychoeducational Achievement Battery-Revised* (WJ-R; Woodcock, & Johnson, 1989, 1990). Correlations between the DIBELS-M and the K-BIT ranged from 36% to 59%. Correlations between the DIBELS-M and the TOPA, the DSC, and the teacher's pre-reading rating questionnaire ranged between 67% and 74%. Correlations between the DIBELS and the WJ-R ranged from 62% to 81%. This study yielded results that support the use of the DIBELS for identifying at-risk kindergarten students for reading failure.

Another study completed by Shaw and Shaw (2002) supporting the DIBELS examined its concurrent validity in relation to the reading portion of the *Colorado State Assessment Program* (CSAP). Fifty-two third grade students took both the DIBELS Oral Reading Fluency (ORF) Subtest in the fall, winter, and spring as well as the CSAP in the spring. Correlations ranged from .73 (in the fall and winter) to .80 (in the spring). Because fall, winter, and spring DIBELS scores yielded correlations ranging between .89 and .93, Shaw and Shaw argue that DIBELS administered in the fall, winter, and spring are strong predictors of spring CSAP scores. Also, when the CSAP was used as the outcome measure, the DIBELS ORF correctly classified 86% of the students tested.

No previous studies exist within the literature regarding the appropriateness of DIBELS for children who are speakers of nonmainstream English. However, it is stated in the manual that "students are never penalized for articulation or dialect differences that are part of their typical speech" (Good et al., 2010, p. 16). Assessment and scoring of the children's speech and dialect, however, are left to the examiner's discretion. Therefore, Good et al. (2010), recommend that the assessor be familiar with the children's dialect. Also within the manual, Good et al. (2010) state that the test was created to be sensitive and respectful to all groups and subgroups, to incorporate different issues of diversity, and to avoid issues related to colloquialisms, slang, and nonmainstream dialect. However, if an examiner cannot detect or does not understand the complexities of children's articulation abilities or dialect differences between and within groups of children, a child's score may not be reflective of that child's true abilities.

Phonological Features of Nonmainstream English

To better understand the appropriateness of the items on the DBIELS, it is important to consider the phonological features that occur in nonmainstream dialects of English. Three studies on the phonology of AAE and/or Southern nonmainstream dialects are relevant for this purpose. A summary of these three studies is presented in Appendix B. In Craig et al. (2003), nine common phonological features of nonmainstream AAE speakers were identified: monophthongization of diphthongs, substitution for /Θ/ and /ð/, consonant cluster reduction, postvocalic consonant reduction, consonant cluster movement, syllable deletion, "g" dropping in final word positions, syllable addition, and devoicing of final consonants.

Nine phonological features of AAE speakers also were identified in Kohler et al. (2007), which evaluated the role of dialect in phonemic awareness and nonword spelling tasks. Three of Kohler et al.'s (2007) features overlap with those identified by Craig et al. (2003). The six additional patterns not identified in Craig et al. (2003) included zero /l/ before bilabial stop, I/ɛ before nasals, backing of /str/ clusters, metathesis, vocalization of /l/, and /j/ cluster rhotacization.

Wolfram and Schilling-Estes (1998) is another source that has documented phonological features of nonmainstream English speakers, more specifically all Southern-based varieties. Ten phonological dialect structures of American English consonants were identified: final cluster reduction, reduction of final consonant clusters *–st, –sk,* and *–sp* to *–s* when made plural, /th/ substitution, stopping of fricatives, intervocalic and postvocalic /r/ loss and intrusion, postvocalic and pre bilabial /l/ loss, unstressed initial *w* reduction, unstressed initial syllable loss, g-dropping and nasalization of vowels, and metathesis.

Based on these three sources of dialect variation, I completed an item analysis of the DIBELS to examine the appropriateness of the items for nonmainstream English speakers. Each item was examined for the nineteen previously mentioned phonological features. Recall that the DIBELS consists of four subtests: First Sound Fluency (FSF), Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF), and Nonsense Word Fluency (NWF). Of the four subtests administered to kindergarten children and based on my analyses, only two may be problematic for nonmainstream English speakers. These two include FSF and PSF. Of the 60 FSF items, there were three items that might be influenced by a child's potential use of AAE or SWE; of the 48 PSF items, there were 17.

Table 1

Item Analysis of DIBELS

List of problematic items		Reason for problematic item	Example of Pattern
FSF	stream (/s/, /st/, /str/, /**stri**/)	backing of /str/	/s**k**r/ for /s**t**r/ or /s**t**ri/
	skirt (/s/, /sk/, /**skɛr**/)	postvocalic /r/ loss	/sk^/ for /skɛ**r**/
	porch (/p/, /**pɔɪr**/)	postvocalic /r/ loss	/pɔɪ/ for /pɔɪ**r**/
PSF	toes (/to**z**/)	devoicing final consonant /z/ to /s/	/to**s**/ for /to**z**/
	holes (/ho**lz**/)	devoicing final consonant /z/ to /s/	/hol**s**/ for /hol**z**/
	sides (/sɑɪ**dz**/)	devoicing final consonant /z/ to /s/	/sɑɪd**s**/ for /sɑɪd**z**/
	head (/hɛ**d**/)	devoicing final consonant /d/ to /t/	/hɛ**t**/ for /hɛ**d**/
	cave (/keɪ**v**/)	devoicing final consonant /v/ to /f/	/keɪ**f**/ for /keɪ**v**/
	dreamed (/dri**md**/)	devoicing final consonant /d/ to /t/	/dri**mt**/ for /dri**md**/
		final consonant cluster reduction of /md/	/dri**m**/ for /dri**md**/
	cold (/ko**ld**/)	final consonant cluster reduction of /ld/	/ko**l**/ for /ko**ld**/
	fox (/fɑ**ks**/)	final consonant cluster reduction of /ks/	/fɑ**s**/ for /fɑ**ks**/
	send (/sɛ**nd**/)	final consonant cluster reduction of /nd/	/sɛ**n**/ for /sɛ**nd**/
	world (/wɝ**ld**/)	final consonant cluster reduction of /ld/	/wɝ**l**/ for /wɝ**ld**/
	told (/to**ld**/)	final consonant cluster reduction of /ld/	/to**l**/ for /to**ld**/
	kicked (/kɪ**kt**/)	final consonant cluster reduction of /kt/	/kɪ**k**/ for /kɪ**kt**/
	stopped (/stɑ**pt**/)	final consonant cluster reduction of /pt/	/stɑ**p**/ for /stɑ**pt**/
	shelf (/ʃɛ**lf**/)	final consonant cluster reduction of /lf/	/shɛ**l**/ for /shɛ**lf**/
		postvocalic /l/ loss	/shɛ**f**/ for /shɛ**lf**/
	star (/stɔ**r**/)	postvocalic /r/ loss	/stɔ/ for /stɔ**r**/
	near (/ni**r**/)	postvocalic /r/ loss	/ni/ for /ni**r**/
	forth (/fɔɪr**th**/)	substitution of /f/ for /th/	/fɔɪr**f**/ for /fɔɪr**Ɵ**/

Because the PSF and FSF subtests of the DIBELS assess a child's phonological awareness, some nonmainstream English-speaking children could also experience difficulty identifying and segmenting words into individual phonemes. For example, a nonmainstream English-speaking child who devoices final consonants may or may not be able to identify the final sound in the word "toes" to be /z/ or the four individual sounds in the word "world" during the PSF subtest. During the FSF subtest, if a nonmainstream English-speaking child who reduces consonant clusters is presented with a word that contains an initial consonant cluster (e.g., "school" or "plane"), that child may reduce the initial consonant cluster or may not even be able to identify the two individual sounds within the cluster. As Terry et al. (2010) suggest, the mismatch between speech and print may cause children difficulty and confusion while reading.

In kindergarten, children also complete the LNF and NWF subtest. However, because the LNF subtest only measures children's ability to name letters, their use of nonmainstream English would not affect their scores. In addition, benchmark cutoff scores are not provided for kindergarten for the LNF subtest. Regarding the NWF subtest, kindergarten children have the option to sound out each individual phoneme or read the whole nonsense word, nonmainstream phonological variants are more apparent when whole words are read. Therefore, children's use of nonmainstream English could potentially affect their score on the NWF subtest if the whole word is read. However, benchmark cutoff scores are not provided for this subtest, because, according to the test manual most children this age sound out each individual phoneme that forms these nonsense words. Given this, kindergarteners' use of a nonmainstream dialect should not impact the outcome of their test scores. Nevertheless, at later grades, children's use of final consonant devoicing may lead to lower scores on this subtest. For instance a child who devoices

final constants may substitute /s, t, k, p, and f/ for /z, d, g, b, and v/ when reading whole nonsense words (e.g. /nɛs/ for /nɛz/).

Measuring Children's Use of Nonmainstream Dialect

When describing the variation that exists between speakers of nonmainstream English, both the type and number of nonmainstream dialect forms are often measured (Oetting & McDonald, 2002). Rates of nonmainstream form use, or nonmainstream dialect density, vary across speakers (Craig et al., 2009; Craig & Washington, 2002; Oetting & McDonald, 2002; Washington & Craig, 1994). In previous studies by Washington and Craig, nonmainstream dialect densities among children have been found to range from no utterances including a nonmainstream form to the use of one or more nonmainstream dialect forms in most of the utterances a child produces. According to Washington and Craig, high nonmainstream dialect speakers use nonmainstream forms in 24 to 39% of their utterances, moderate nonmainstream dialect speakers use nonmainstream forms in 13 to 21% of their utterances, and low nonmainstream dialect speakers use nonmainstream forms in 0 to 11% of their utterances.

Following Washington and Craig's work, Oetting and McDonald (2002) presented nonmainstream dialect density ranges for AAE and SWE speakers. Percent of utterances with one or more nonmainstream dialect forms ranged from 10-52% for AAE speakers and 3-35% for SWE speakers. The average nonmainstream dialect density was 29% (SD = 9) for the AAE speakers and 12% (SD = 6) for the SWE speakers.

The dialect density ranges listed above were derived from language samples. However, the language sample process is laborious and requires a 20- to 30-minute elicitation session with a child and an additional four to six hours of transcribing and coding (Oetting et al., 2012). In addition, reliability checks have to be completed. As a quick and standardized alternative, the

Diagnostic Evaluation of Language Variation – Screening Test (DELV-ST; Seymour, Roeper, & de Villiers, 2003) can be used to determine dialect density. This 32-item screener consists of two major areas and yields two different scores – Language Variation Status and Diagnostic Risk Status. The Language Variation portion of the DELV-ST consists of fifteen items that assess a child's production of phonemes and morpho-syntactic structures. Children's responses to the items are then compared to two criterion scores to classify their dialects as MAE, some variation from MAE, or strong variation from MAE.

Although the focus of the current study is on the relation between children's nonmainstream English dialect use and reading abilities, other features, such as a child's race and gender, have been shown to influence a child's use of nonmainstream English (Craig & Washington, 1994, 2002, 2004; Jencks & Phillips, 1998; Oetting & McDonald, 2001, 2002; Oetting & Pruitt, 2005; Thompson et al., 2004; Washington et al., 1998). As mentioned earlier, in the United States, race plays an important role in children's use of nonmainstream English, especially when AA children are compared to non-AA children. Oetting and McDonald (2002) document an average nonmainstream dialect density of 29% for the AA children and 12% for the non-AA children. Other studies that have shown dialect differences between AA and non-AA children include Oetting and Garrity (2006) and Washington and Craig (1998). In Craig et al. (2003), gender did not influence a child's nonmainstream dialect density. However, in other studies of preschool and kindergarten children, males have produced nearly twice the number of nonmainstream dialect forms in spontaneous discourse than females (Craig & Washington, 2002; Washington & Craig, 1994, 1998).

The purpose of this study is to examine the relationship between children's use of nonmainstream English and their reading ability as measured by the DIBELS. As part of the

examination, we must also take into consideration or first examine other child features, such as race and gender that may influence the children's use of nonmainstream English and their DIBELS scores. The questions guiding the research were:

A. Do children's DIBELS scores vary by their race and gender?
B. Within groups of AA and non-AA children, do DIBELS scores vary by the children's nonmainstream dialect density as measured by the DELV-ST?

METHODS

Informed Consent

Written parental consent was obtained prior to the onset of the current study (Appendix C). The data were also collected as part of a larger study by Oetting, Hegarty, and McDonald (2009 - 2014).

Participants

Seventy-nine children provided data for this study. All lived in two rural parishes in Southeast Louisiana, attended public schools, and were in kindergarten. Their ages ranged from 60 to 76 months; 39 were African American (AA) and 40 were non-African American (non-AA). The non-AA participants were identified as White (n = 37), Asian (n = 1), and American Indian (n = 2). Of the 79 participants, 38 were male and 41 were female. These 79 participants were taken from a pool of 115 children. The 79 were selected because their files included the complete battery of assessments, which included the DIBELS and the DELV-ST. Of the 79 participants, 71 were identified as typically developing, and eight were identified as SLI. Therefore, because these children represent a subset of the children in kindergarten, they do not represent all kids attending kindergarten in public schools.

Maternal education was provided for all but three children. As shown in Table 2, maternal education, which can be used as a general estimate of a child's socioeconomic status, varied. To examine the maternal education data, a 2x2 analysis of variance (ANOVA) was performed with race and gender as independent variables. Results indicated a main effect for race; $F(1,72) = 4.60$, $p = .035$. The main effect reflected higher maternal education scores for non-AA children than AA children; however, the effect size was small.

Materials and Procedures

Children were administered the DELV-ST by graduate students in the Department of Communication Sciences and Disorders at Louisiana State University, to determine their degree of language variation. Children who were classified as speaking MAE were assigned a rating of a 1, children who were classified as speaking some variation from MAE were assigned a rating of a 2, and children who were classified as speaking strong variation from MAE were assigned a rating of a 3. Dialect density of the participants are presented in the table below. As can be seen, values for both AA and non-AA children ranged from a rating of 1 to 3; however, mean dialect density ratings were higher for AA children than for non-AA children, $F(1,75) = 31.57$, $p < .001$. With regards to gender, no significant difference in dialect density was found.

Participants also were administered the *Primary Test of Nonverbal Intelligence* (PTONI; Ehrler & McGhee, 2008), the *Peabody Picture Vocabulary Test – 4* (PPVT-4; Dunn & Dunn, 2007), the *Goldman Fristoe Test of Articulation – 2nd Edition* (GFTA-2; Goldman & Fristoe, 2000), and the Syntax Subtest of the *Diagnostic Evaluation of Language Variation – Norm Referenced* (DELV-NR Syntax; Seymour, Roeper, & de Villiers, 2005). All data collection was completed at the children's schools.

In order to determine if results varied by race and gender, a 2x2 ANOVA was completed on all test scores. Similar to the DELV-ST, a race effect was seen only on the PTONI, $F(1,75) = 9.00$, $p = .004$, and PPVT-4, $F(1,75) = 19.10$, $p < .001$. For both tests, scores were higher for the non-AA than the AA children. With regards to gender, a significant difference was found only for GFTA-2 scores, $F(1,75) = 4.39$, $p = .040$, with scores of the girls significantly higher than those of the boys. No significant differences in race or gender were found for DELV-NR scores.

Of the 79 participants who varied in their language abilities, it is also important to note that eight were identified as children with Specific Language Impairment (SLI). Of the eight, five were AA and three were non-AA. Given the low number of AA and non-AA children with SLI in the sample, children were not separated into two separate groups (typically developing and SLI).

Table 2

Participant Profiles by Race and Gender

	AA (n = 39)	Non-AA (n = 40)	Male (n = 38)	Female (n = 41)	Total (n = 79)
Maternal Education (n = 76)	12.84 (2.47) 8-17	14 (2.27) 9-17	13.57 (2.46) 9-17	13.31 (2.42) 8-17	13.43 (2.42) 8-17
DELV-ST Dialect Density Rating (n = 79)	2.64 (0.58) 1-3	1.79 (0.85) 1-3	2.21 (0.84) 1-3	2.12 (0.90) 1-3	2.16 (0.87) 1-3
PTONI (n = 79)	99.18 (10.09) 82-129	108.65 (16.70) 86-140	101.87 (11.40) 86-127	105.93 (16.87) 82-140	103.97 (14.55) 82-140
GFTA-2 (n = 78)	105.82 (5.02) 92-111	107.60 (4.72) 91-114	105.55 (4.88) 92-114	107.81 (4.76) 91-113	106.72 (4.92) 91-114
PPVT-4 (n = 79)	95.05 (11.06) 7-117	105.90 (10.84) 72-130	101.74 (11.40) 78-119	99.44 (12.88) 72-130	100.54 (12.17) 72-130
DELV-NR (n = 79)	8.74 (2.33) 3-14	14.00 (2.27) 3-15	9.16 (2.03) 4-14	9.29 (2.65) 3-15	9.23 (2.36) 3-15

Upon the conclusion of the kindergarten year, DIBELS scores were obtained from the school system database. The DIBELS was administered three times throughout the kindergarten school year in each of the five schools by a trained assessor who was hired by the schools. At the beginning of the school year, children were administered the FSF and LNF. In the middle of the school year, children were administered the FSF, LNF, PSF, and NWF. At the end of the

school year, students were administered the LNF, PSF, and NWF. The version of DIBELS that was administered was the DIBELS *Next* (Good et al., 2009).

RESULTS

Preliminary Analysis

As a preliminary analysis, the distribution of the children's DIBELS scores were examined. DIBELS subtest and composite scores for the beginning, middle, and end of the year are presented in Table 3. As shown in the first three rows of the table, all average raw scores were above the benchmark cutoff score. The percentage of kids above the cutoff scores for each individual subtest ranged from 54 to 94. With regards to composite scores, 69% of the children were above the benchmark cutoff for beginning of the year testing, 78% were above for middle of the year testing, and 79% were above for end of the year testing.

Because the beginning, middle, and end of the year composite scores are composed of a different number of subtests, the total possible score for the composites vary. Therefore, to compare them to each other, composite scores were converted into percentages of correct items. As can be seen, the average percent correct of all subtests and composite scores increased from the beginning of the year to the end of the year. These differences were confirmed when tested with a repeated measures ANOVA with time as the independent variable and the children's composite scores as the dependent variable, $F(1,75) = 198.31$, $p < .001$. Follow-up paired t-tests revealed that the children's percent correct on the DIBELS composite scores significantly increased from the beginning of the year to the middle of the year, $t(75) = 12.71$, $p < .001$, beginning of the year to the end of the year, $t(77) = 13.49$, $p < .001$, and middle of the year to the end of the year, $t(76) = 4.35$, $p < .001$. Degrees of freedom vary due to missing DIBELS scores in the beginning and middle of the year.

Table 3

Children's DIBELS Subtest Scores

	Beginning of the Year		Middle of the Year					End of the Year			
	LNF (n = 78)	FSF (n = 78)	LNF (n = 77)	FSF (n = 77)	PSF (n = 77)	NWF-CLS (n = 77)	NWF-WWR (n = 76)	LNF (n = 79)	PSF (n =79)	NWF-CLS (n = 79)	NWF-WWR (n = 79)
Cutoff Score	n/a	10 (16.7%)	n/a	30 (50%)	20 (25.3%)	17 (11.9%)	n/a	n/a	40 (50.6%)	28 (19.6%)	n/a
Actual Scores	24.95 (15.72) 0-67	14.71 (13.71) 0-55	44.83 (15.22) 1-86	40.66 (14.27) 0-60	39.62 (21.07) 0-73	29.14 (17.14) 0-97	1.32 (4.70) 0-29	54.05 (15.85) 1-90	53.01 (12.10) 1-73	38.44 (21.75) 0-131	4.30 (8.20) 0-44
Percent of Children above Cutoff	n/a	55.1%	n/a	80.5%	71.4%	77.9%	n/a	n/a	93.7%	67.1%	n/a
Children's Average Percent Correct	22.7%	24.5%	40.8%	67.8%	50.2%	20.4%	2.6%	49.1%	67.1%	26.9%	8.6%

Table 4

Children's DIBELS Composite Scores

	Beginning of the Year (n = 78)	Middle of the Year (n = 77)	End of the Year (n = 79)
Cutoff Score	26 (15.3%)	122 (31.1%)	119 (35.8%)
Actual Scores	39.65 (25.81) 0-119	154.26 (55.79) 23-292	145.51 (39.36) 33-277
Percent of Children above Cutoff	69.2%	77.9%	78.5%
Children's Average Percent Correct	23.3%	39.4%	43.8%

DIBELS by the Children's Race and Gender

Table 5 presents the children's DIBELS scores as measured by percent correct on the DIBELS as a function of their race and gender. A mixed 2 x 2 x 3 ANOVA was completed on the composite scores to examine whether the results differed by race, gender, and time. As expected, a main effect for time was again found, $F(1,74) = 196.43$, $p < .001$, and a main effect was found for race, $F(1,74) = 6.31$, $p = .014$. As can be seen, the DIBELS scores of the non-AA children were higher than the scores of the AA children. No significant effect was found for gender. The finding that the children's race influenced their scores indicated that race needed to be considered when the children's nonmainstream dialect densities were examined.

Table 5

Percent Correct on DIBELS by Race and Gender

	Beginning of the Year Composite Scores	Middle of the Year Composite Scores	End of the Year Composite Scores
AA (n = 39)	20.3 (14.6) 0-65.9	34.9 (13.5) 5.9-56.9	40.9 (10.5) 9.9-63.9
Non-AA (n = 40)	26.3 (15.3) 0-70.0	43.5 (13.8) 9.7-74.5	46.7 (12.5) 19.3-83.4
Male (n = 38)	23.1 (16.0) 0-65.9	39.0 (14.4) 5.9-65.6	43.4 (12.1) 9.9-67.2
Female (n = 41)	23.5 (14. 6) 2.5-70.0	39.7 (14.3) 12.0-74.5	44.2 (11.8) 24.4-83.4
Total (n = 79)	23.3 (15.2) 0-70.0	39.4 (14.2) 5.9-74.5	43.8 (11.9) 9.9-83.4

The Relationship between the Children's Nonmainstream Dialect Use and Their DIBELS Scores

The relationship between the children's nonmainstream dialect density and their DIBELS scores was examined in three ways, and each of these analyses were completed on the AA and

non-AA children separately. First, an analysis of variance was completed to determine whether the children's composite scores varied by their dialect density ratings. Second, a Spearman's correlation analysis was completed to analyze the relationship between the children's dialect density as measured by the DELV-ST and their percent correct on the DIBELS composite scores. Thirdly, the children's individual speech sound productions as measured by the GFTA-2 were examined and compared to the items on the individual subtests of the DIBELS.

DIBELS composite scores by the children's dialect densities are presented in Table 6.

Table 6

Percent Correct DIBELS Beginning, Middle, and End of the Year Composite Scores by Dialect

AA Status	DELV-ST Dialect Density Ratings	Beginning of the Year Composite	Middle of the Year Composites	End of the Year Composites
AA	Strong Variation (n = 26)	18.06 (14.71) 0-65.88	30.31 (12.98) 5.87-56.89	37.96 (9.57) 9.94-57.23
	Some Variation (n = 9)	22.65 (13.16) 3.53-40.59	44.47 (7.25) 31.63-53.57	47.59 (10.80) 26.81-63.86
	Mainstream (n = 2)	38.82 (8.32) 32.94-44.71	51.66 (5.23) 47.96-55.36	47.13 (2.77) 45.18-49.10
Non-AA	Strong Variation (n = 10)	18.47 (11.24) 3.53-35.29	36.17 (10.09) 24.49-48.47	40.66 (5.45) 34.34-48.19
	Some Variation (n = 8)	17.65 (8.76) 0-26.47	35.46 (16.00) 9.69-54.08	42.47 (15.91) 19.28-67.17
	Mainstream (n = 21)	33.42 (15.73) 3.53-70.00	49.69 (11.53) 25.51-74.49	50.94 (12.27) 34.34-83.43
Total	Strong Variation (n = 36)	18.17 (13.71) 0-65.88	31.94 (12.39) 5.87-56.89	38.69 (8.66) 9.94-57.23
	Some Variation (n = 17)	20.42 (11.40) 0-40.59	40.23 (12.64) 9.69-54.08	45.31 (13.15) 19.28-67.17
	Mainstream (n = 23)	33.89 (15.18) 3.53-70.00	49.85 (11.08) 25.51-74.49	50.63 (11.79) 34.34-83.43

ANOVA. To examine whether DIBELS results differ for AA and non-AA children by the children's DELV-ST scores, two mixed ANOVAs were completed on the composite scores. The independent variables were the children's DELV-ST dialect ratings and time. As expected, a main effect for time was found for both AA and non-AA children, AA $F(1,36) = 65.31$, $p < .001$, non-AA $F(1,38) = 79.73$, $p < .001$. In addition, a main effect for DELV-ST dialect ratings was documented for both AA and non-AA children, AA $F(1,36) = 9.38$, $p = .004$, non-AA $F(1,38) = 33.52$, $p < .001$. Follow-up paired t-test revealed that for AA the children, DIBELS composite scores significantly increased from the beginning of the year to the middle of the year, $t(36) = 7.68$, $p < .001$, beginning of the year to the end of the year, $t(38) = 8.85$, $p < .001$, and middle of the year to the end of the year, $t(36) = 4.37$, $p < .001$. For non-AA children, DIBELS composite scores significantly increased from the beginning of the year to the middle of the year, $t(38) = 10.45$, $p < .001$, and from the beginning of the year to the end of the year, $t(38) = 10.31$, $p < .001$. Degrees of freedom vary due to missing DIBELS scores in the beginning and middle of the year. For AA children, two DIBELS composite scores were missing in the beginning of the year, and for non-AA children, one DIBELS composite score was missing in the middle of the year.

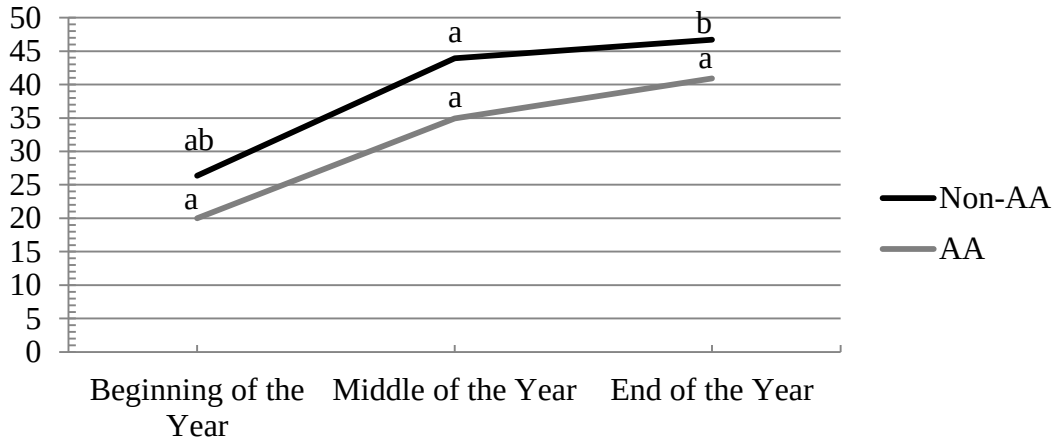

Figure 1. DIBELS Beginning, Middle, and End of the Year Composite Scores by DELV-ST

Correlations. A Spearman's correlation was completed to assess the relationship between the children's DELV-ST ratings and their DIBELS scores. For the AA children, a negative correlation was found between the two measures for the middle of the year composite scores, r = -.55, $p < .001$, and end of the year composite scores, r = -.47, p = .002. For the non-AA children, a negative correlation was found between the two measures for all testing periods; beginning of the year composite scores r = -.52, p = .001, middle of the year composite scores r = -.47, p = .002, end of the year composite scores r = -.40, p = .011. When the AA and non-AA children were combined, the results were similar. A negative correlation was found between these two measures at each testing session: beginning of the year composite scores r = -.45, $p < .001$, middle of the year composite scores r = -.55, $p < .001$, end of the year composite scores r = -.48, $p < .001$.

Item Analysis of the GFTA-2. Finally, the children's individual speech sound productions on the sounds in words subtest of the GFTA-2 were examined. This section of the GFTA-2 is comprised of 52 mono- and multi-syllabic target words that assess 77 target sounds in the initial, medial, and final word positions. Of the 77 target sounds, 52 sound errors were noted. Of the 52 errors, 11 could be attributed to dialect differences and the 41 could not. Instead, these were considered related to the children's articulation abilities (i.e. interdental lisp, r/l articulation errors). Table 7 lists the 11 items. The 11 sound errors were produced by 64 children (38 AA, 26 non-AA).

Table 7

Children's Speech Sound Errors from GFTA-2

Deviation	Target Sound	Position of sound	Syllables in Target Word	Type of Error	Frequency	Target Sound's Inclusion on DIBELS
p	b	final	2	devoicing	1	yes
gri	gi	initial	1	r intrusion	1	no
n	ŋ	final	1	g omission	1	no
d/t/f	Θ	initial	1	substitution	24	no
f/t	Θ	medial	2	substitution	49	no
f/t/-	Θ	final	1	substitution	51	yes
b	v	initial	2	substitution	10	no
b/f	v	medial	2	substitution	5	no
b/-/f	v	final	1	substitution	4	no
d	ð	initial	1	substitution	23	no
d/t	ð	medial	2	substitution	32	no

Next, the 11 child productions which could be attributed to a nonmainstream dialect were examined for their presence on the DIBELS. For this analysis, items for the DIBELS *Next* were examined to be consistent with the version of the test the children received. Results showed that only two of the target sounds are included within items on the DIBELS. These two target sounds include voiceless "th" in the final word position of the word "fourth" and "v" in the final word position of the word "cave." However, this analysis is limited because the GFTA-2 did not assess backing of /str/, postvocalic /l/ or /r/ loss, nor final consonant cluster reduction. Therefore, three of the 60 (5%) items in FSF subtest and thirteen of the 79 (16%) items in PSF subtest might be influenced by the children's potential use of AAE or SWE.

DISCUSSION

The present study was completed to learn more about the relationship between children's use of nonmainstream English and their reading ability. As discussed earlier, children who begin kindergarten speaking nonmainstream English could be at risk for reading acquisition difficulties. To address, this, the *Dynamic Indicators of Basic Early Literacy Skills Next* (DIBELS; Good et al., 2009) was used to measure children's emerging reading skills in kindergarten. In addition, the *Diagnostic Evaluation of Language Variation – Screener Test* (DELV-ST; Seymour, Roeper, & de Villiers, 2003) was used to quantify children's use of nonmainstream English.

Preliminary analysis was first completed to examine the distributions of the children's DIBELS scores. Results showed that on average, DIBELS composite scores increased over time. Similarly, the number of children above the benchmark cutoff score increased over time. Furthermore, on average, DIBELS subtest and composite scores were above the benchmark cutoff scores.

Next, two research questions were posed. The first research question asked was, *Do children's DIBELS scores vary by their race and gender?* Results showed that DIBELS scores varied by race. On average, DIBELS scores of the non-AA children were higher than the scores of the AA children. For both AA and non-AA children, DIBELS scores increased over time. Therefore, regardless of the child's race, reading ability increased over time.

The second question was, *Within groups of AA and non-AA children, do DIBELS scores vary by their nonmainstream dialect densities as measured by the DELV-ST?* Three different analyses were completed to answer this question: ANOVA, correlations, and an item analysis of the children's responses on the GFTA-2. Results showed that for both AA and non-AA children,

DIBELS scores for the beginning, middle, and end of the year testing differed by children's nonmainstream dialect densities. For both races and across all testing sessions, children who produced the least amount of nonmainstream English scored higher on the DIBELS. A negative correlation between the children's nonmainstream dialect densities, as measured by the DELV-ST, and their emerging reading skills, as measure by the DIBELS was also documented. Both of these findings showed that as children's nonmainstream dialect density increased, their reading achievement decreased.

Finally, in order to assess the appropriateness of the DIBELS for children who speak nonmainstream English, an item analysis of the GFTA-2 was completed. When sound errors produced on the GFTA-2 were compared to items on DIBELS, only two target sounds overlapped. However, this analysis was limited because the GFTA-2 did not assess all phonemes included within the items on the DIBELS.

Findings Related to Past Research

Recall the two previously mentioned positions within the literature regarding the relationship between children's use of nonmainstream English dialect and reading skills. One set of literature states that use of nonmainstream English is not the sole influence on children's reading skills. Rather, the use of a nonmainstream English dialect may be one of many factors that influence children's reading achievement (Connor & Craig, 2006; Craig et al., 2009; Good, Gruba, & Kaminiski, 2001; Washington & Craig, 2001). The second set of literature argues that the use of a nonmainstream English dialect places a child at risk for difficulty when learning how to read (Craig & Washington, 1994, 2004; Isaacs, 1996; Jencks & Phillips, 1998; Thompson et al., 2004). The current study supports both positions. Children's increased use of nonmainstream English dialect negatively affected their reading achievement, but race was also

found to affect the children's reading achievement. Importantly, however, children's increased use of a nonmainstream dialect of English negatively related to their reading achievement scores regardless of their race.

Limitations and Directions for Future Research

Although significant findings were found, this study was not without limitations. One limitation of the study was the inability to assess reliability and validity of the DIBELS scores because they were provided by the school. Therefore, the interrater and intrarater consistency of administration and scoring by the examiner for the DIBELS was unknown. In addition, the children's actual responses to the items on the DIBELS were not provided and consequently their use of a nonmainstream dialect response on the DIBELS was unknown

It is also important to reiterate that the children represented a subset of kindergarteners. They were selected from a larger study and were required to meet rigorous inclusion criteria. As part of the inclusion criteria, only children who were either typically developing or SLI were included out of the entire kindergarten class. Therefore, this study may not generalize to a full population of kindergarten children. Another limitation was the small number of children in the study. In addition, the children were limited to kindergarteners and as children progress in age, the subtests on the DIBELS change.

Finally, the study was correlational in nature and limited to two variables, the children's dialect and emerging reading achievement. Because correlation analyses do not equal causation, other variables, such as maternal education, could influence children's emerging reading abilities. However, these variables were not included in the study. Interestingly, when the relationship between children's emerging reading achievement and their maternal education is analyzed, they were correlated at the beginning and middle of the year testing ($r = .49$ and .31,

respectively). For non-AA children, maternal education did not correlate with emerging reading achievement, and for AA children, maternal education correlated with beginning of the year testing. This could also be attributed to other factors, such as reading environment and parental interaction before the child enters kindergarten. Subsequently after the child has been exposed to the kindergarten classroom and instruction for a few months, maternal education no longer influences reading achievement.

Based on the previously discussed limitations of the study, three suggestions are made for future studies. First, to address validity and reliability of testing, researchers should obtain audio recordings of the DIBELS administrations. By doing this, both the language of the children and examiners could be examined. Secondly, to address the limited number of participants, future research should include more children. Given that the DIBELS is used state-wide in Louisiana, the study could be expanded.

In future studies, research should further inspect the effects of race to examine the educational significance of the race effect that was documented in the current study. For example, although a race effect was observed, it seems important to examine if this race effect led to different percentages of children scoring above or below the benchmark cutoff scores on the DIBELS. If the children's performance relative to the benchmark scores do not differ, the race effect documented here may not carry educational significance.

In addition, future research should expand the age range of children examined. The DIBELS is given to children through sixth grade. By including children in each grade level that the DIBELS tests, the different subtests of the DIBELS could be analyzed. Studies including children of all grades could also be used to determine whether kindergarten DIBELS scores and nonmainstream dialect ratings predict later reading ability.

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APPENDIX A: DIBELS KINDERGARTEN BENCHMARK GOALS

	Benchmark	Beginning	Middle	End
DIBELS Composite Score	Above Cutoff	26+	122+	119+
	Below Benchmark; Not at risk	13-25	85-121	89-118
	Below & At Risk	0-12	0-84	0-88
	Total Possible Score	170	392	332
First Sound Fluency (FSF)	Above Cutoff	10+	30+	not tested
	Below Benchmark; Not at risk	5-9	20-29	not tested
	Below & At Risk	0-4	0-19	not tested
	Total Possible Score	60	60	not tested
Letter Naming Fluency (LNF)	Above Cutoff	none	none	none
	Below Benchmark; Not at risk	none	none	none
	Below & At Risk	none	none	none
	Total Possible Score	110	110	110
Phoneme Segmentation Fluency (PSF)	Above Cutoff	not tested	20+	40+
	Below Benchmark; Not at risk	not tested	10-19	25-39
	Below & At Risk	not tested	0-9	0-24
	Total Possible Score	not tested	79	79
Nonsense Word Fluency – Correct Letter Sounds (NWF-CLS)	Above Cutoff	not tested	17+	28+
	Below Benchmark; Not at risk	not tested	8-16	15-27
	Below & At Risk	not tested	0-7	0-14
	Total Possible Score	not tested	143	143
Nonsense Word Fluency – Whole Words Read (NWF-WWR)	Above Cutoff	not tested	none	none
	Below Benchmark; Not at risk	not tested	none	none
	Below & At Risk	not tested	none	none
	Total Possible Score	not tested	50	50

APPENDIX B: PHONOLOGICAL VARIATIONS USED BY SOUTHERN NONMAINSTREAM ENGLISH SPEAKERS

Phonological pattern	Example
1. Monophthongization of diphthongs	/ɑr/ for /ɑʊr/
2. Substitution of /t, f, v, d/ for /Θ/ and /**ð**/	/ərɪtm^tɪc/ for /ərɪΘm^tɪc/; bæf/ for /æΘ/; /dɛm/ for /**ð**ɛm/; /smuv/ for /smu**ð**/
3. Stopping of fricatives	/ɪdnt/ for /ɪsnt/; /sɛbm/ for /sɛvn/
4. Consonant cluster reduction	/col/ for /cold/; /æk/ for /ækt/
5. Reduction of *-st -sk* and *-sp* to *–s* when pluralized	/tɛsɛs/ for /tɛsts/; /dɛsɛs/ for /dɛsks/; /wɔsɛs/ for /wɔsps/
6. Postvocalic consonant reduction	/maʊ/ for /maʊΘ/
7. Consonant cluster movement (Metathesis)	/æks/ for /æsk/; /ɛkskeɪp/ for /ɛskeɪp/
8. Unstressed syllable deletion	/k^z/ for /bək^z/
9. "G" dropping in final word positions	/swɪmɪn/ for /swɪmɪŋ/
10. Syllable addition	/fɔɪrɪstɪz/ for /fɔɪrɪst/
11. Devoicing of final consonants	/hɪs/ for /hɪz/, /wɑɪf/ for /wɑɪv/; /k^p/ for /k^b/; /frɪt/ for /frɪd/; /wɪk/ for /wɪg/
12. l/ɛ before nasals	/lɪn/ for /lɛn/
13. Backing of /str/ cluster	/skrit/ for /strit/
14. Vocalization of /l/	/mɪdo/ for /mɪdl/
15. Postvocalic/Intervocalic /r/ loss	/sɪst^/ for /sɪstə˞/; /Θo/ for /Θro/; /stɔɪi/ for /stɔɪri/
16. Postvocalic and pre bilabial /l/ loss	/sti/ for /stil/; /hɛp/ for /hɛlp/; /wʊf/ for /wʊlf/
17. r intrusion; /j/ cluster rhotacization	/wɔrʃ/ for /wɔʃ/; nonword /hurbe/ for /hube/
18. Initial /w/ reduction	/juŋ ^ns/ for /juŋ w^ns/
19. Nasalization of vowels	/bĩ/ for /bĩn/

Adapted from Craig et al. (2003), Kohler et al. (2007), and Wolfram and Schilling-Estes (1998).

APPENDIX C: PARENTAL CONSENT FORM

Study Approved By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb
Approval Expires: 12-8-2010

Parent Signature

By signing this form, I acknowledge that I have read the consent form, agree to my child's participation in the study, and know that I can call or email Dr. Oetting at anytime with questions about the study. If I have questions about my child's rights or other concerns, I also know that I can contact Robert C. Mathews, Chairman, LSU Institutional Review Board, (225)578-8692.

By signing this consent form, I acknowledge the researchers' obligation to provide me with a copy of this consent form.

_____ _____

Parent's Signature Date

Child's Name _____Gender: _____Race_____ Date of Birth: _____

Please circle the highest grade completed by the child's mother.

(6 = 6th grade, 12 = high school graduate, 16 = college graduate)

6 7 8 9 10 11 12 13 14 15 16 or more

Is your child receiving services by a Speech Language Pathologist/ Speech Therapist?

Yes No

Does anyone in your child's immediate or extended family have difficulties with speech, language, reading, writing, hearing, or stuttering?

Yes No

May we contact you to learn more about your family's language and dialect history?

Yes No

If yes, please provide 1-2 phone numbers_____ or _____

If you would like us to send you the results of the study, please write down your address here.

Address: _____

RETURN IN ENVELOPE

LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL & MECHANICAL COLLEGE
Department of Communication Sciences and Disorders • LSU Speech and Hearing Clinic

PARENTAL CONSENT FORM

Improving Speech and Language Tests for Children who Live in Louisiana

We are conducting a five-year study that is funded by the National Institutes of Health. The purpose of the study is to improve the tests speech language pathologists use to assess and treat kindergartners who live in Louisiana. We would appreciate your child's help in our project. This study will take place at your child's school.

200 kindergarteners in regular education and 100 kindergarteners receiving speech and language services by speech language therapists will be included in the study. Children who have a hearing loss or a history of medical, behavioral, or psychological disorders will not be able to participate in the study.

Your child will attend no more than 6 sessions, lasting no longer than 20 minutes at his/her school (at times convenient for his/her teacher). During the sessions, your child will complete a battery of speech and language tests; play with age-appropriate toys; imitate lists of words and sentences, and explain events and actions while looking at videos of everyday events (e.g., a boy tying his shoes or a girl planting a flower). The sessions will be audio recorded so that we can transcribe your child's language. We will also conduct a hearing screening and verify your child's educational placement through your child's school.

This study will help us learn more about the dialects of children from Louisiana and help us better understand differences between Louisiana children with speech and language impairments and Louisiana children who are typically developing. The results should help speech language pathologists improve their services in Louisiana as well as improve the services of professionals who work in other parts of the country where multiple dialects of English are spoken. There are no known risks associated with participating in this project.

This study is confidential. All materials will be coded and children's names and personal information will be kept secure. Results of this study will be published and your parish will be formally thanked in the acknowledgements, but no names or any other identifying information will be included within the publication. Your child's participation will remain confidential unless release is legally compelled.

Participation in the study is voluntary, and your child will become part of the study only if you and your child agree to participate. Children's assent will be verbal. At any time, you or your child may choose not to participate or to withdraw from the study with no jeopardy to services provided by his/her school. We also reserve the right to discontinue your child's participation in the study if you share with us information that indicates that your child does not meet the criteria for research participation listed above.

If you have any questions about this study, you may contact Janna Oetting at LSU by email at cdjanna@lsu.edu or by phone at 578-2545 from 8:30 am to 4:30 pm Monday thru Friday.

Sincerely,

Janna B. Oetting, Ph.D
Professor

KEEP FOR YOUR RECORDS

64 Hatcher Hall • Baton Rouge • Louisiana • 70803-2606
225/578-2545 Department • 225/578-9054 Clinic • Fax 225/578-2995

VITA

Katelyn Danielle Rodrigue was born in New Orleans, Louisiana, and raised in a small town in St. Charles Parish. She graduated from St. Mary's Dominican High School and continued on to Louisiana State University, where she earned her Bachelor in Arts degree in communication sciences and disorders. Shortly after graduation, Katelyn began her master's program at Louisiana State University where she worked as a research assistant on an NIH grant that examined Louisiana children's use of nonmainstream English. Katelyn began her thesis under the direction of Dr. Janna Oetting in partial fulfillment of the requirements for a Master of Arts degree. Upon graduation, Katelyn plans to work in the school system where she hopes to complete the necessary clinical fellowship requirements to become a licensed speech-language pathologist.