African American English–Speaking Students: An Examination of the Relationship Between Dialect Shifting and Reading Outcomes

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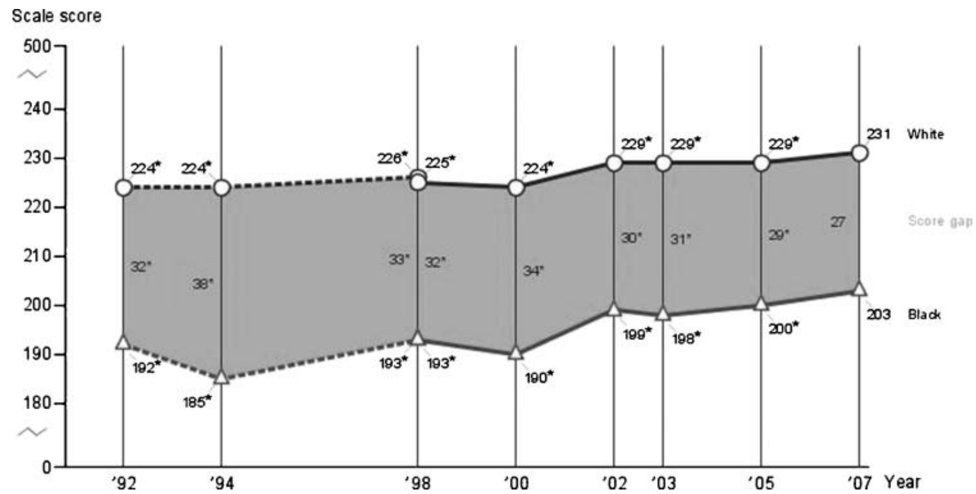
Purpose: In this study, the authors evaluated the contribution made by dialect shifting to reading achievement test scores of African American English (AAE)–speaking students when controlling for the effects of socioeconomic status (SES), general oral language abilities, and writing skills.
Method: Participants were 165 typically developing African American 1st through 5th graders. Half were male and half were female, one third were from low-SES homes, and two-thirds were from middle-SES homes. Dialect shifting away from AAE toward Standard American English (SAE) was determined by comparing AAE production rates during oral and written narratives. Structural equation modeling evaluated the relative contributions of AAE rates, SES, and general oral language and writing skills on standardized reading achievement scores.
Results: AAE production rates were inversely related to reading achievement scores and decreased significantly between the oral and written narratives. Lower rates in writing predicted a substantial amount of the variance in reading scores, showing a significant direct effect and a significant indirect effect mediated by measures of oral language comprehension.
Conclusion: The findings support a dialect shifting–reading achievement hypothesis, which proposes that AAE-speaking students who learn to use SAE in literacy tasks will outperform their peers who do not make this linguistic adaptation.

KEY WORDS: African American English, literacy, code switching, dialect shifting, reading achievement

Learning to read is one of the most important academic tasks faced by elementary-grade students. Not only does learning to read provide students with entry into a wealth of fictional and nonfictional literature, but good reading skills are necessary to access the other major content areas of the curriculum and thus are foundational to academic success. Unfortunately, national averages for African American students reveal chronic academic underachievement compared with their mainstream peers. Known as a Black–White achievement gap or test score gap (Jencks & Phillips, 1998), this underachievement includes performance disparities in reading. To illustrate the persistence and magnitude of the achievement gap for reading, Figure 1 shows the fourth-grade average reading scores on successive administrations of the National Assessment of Educational Progress (NAEP; U.S. Department of Education, 1992–2007) across approximately the last 15 years. The NAEP data also show that regardless of grade, African Americans scored lower than

Figure 1. Average 4th grade reading scores on the NAEP. (U. S. Department of Education, 1992–2007)



their non-Hispanic White peers across the full range of academic content areas. Failure to acquire strong reading skills likely contributes to the more wide-ranging test score disparities.

Two factors that contribute to the Black–White achievement gap relate to types of home literacy practices and the nature of early reading instruction. Key home literacy practices that foster the development of early reading skills of students include frequent opportunities to be read to, access to books of their own, and exposure to a variety of other print materials (Scarborough & Dobrich, 1994; Whitehurst & Lonigan, 2001). Compared with their mainstream peers, African American students are much less likely to be read to daily, own fewer books, and have more limited exposure to a variety of literacy materials (Federal Interagency Forum on Child and Family Statistics [FIFCFS], 2007; Hammer, 1999; Nettles & Perna, 1997; Vernon-Feagans, 1996). Good classroom instruction designed to foster early literacy learning includes an emphasis on storybook reading, vocabulary building, phonemic awareness, and print knowledge (Snow, Burns, & Griffin, 1998). The nature of early classroom instruction and home literacy practices are more congruent with the early literacy experiences of students from mainstream, middle-income homes than of children from more diverse cultural, ethnic, and socioeconomic backgrounds (Neuman, 2006; Vernon-Feagans, Hammer, Miccio, & Manlove, 2001), potentially advantaging mainstream students. Early Reading First and Reading First (No Child Left Behind, 2002) are focused attempts by the federal government to ensure that all students, regardless of their linguistic status or cultural, ethnic, and socioeconomic backgrounds, enter first grade with the tools they need to learn to read and then are provided with high-quality reading instruction in the early elementary grades. Are there additional education-based solutions that might raise the low reading scores specifically of African American students?

African American English (AAE)

Oral language skills are critical to early reading acquisition (Storch & Whitehurst, 2002), so it is not surprising that the search for factors contributing to the Black–White achievement gap for reading have included examinations of the oral language used by African American students. Many African American students, particularly those residing in large urban centers, are speakers of African American English (AAE), a linguistically rich, rule-governed variety of English that contributes in part to the cultural identity of individuals in the African American community (Green, 2002; Rickford, 1999).

Inventories of the dialect features produced by African American students are informative in characterizing the nature of child AAE. Child AAE can be characterized by at least 40 different features that differ systematically from morphological and phonological forms in other varieties of English (Craig, Thompson, Washington, & Potter, 2003; Hinton & Pollock, 2000; Oetting & McDonald, 2001; Seymour & Ralabate, 1985; Stockman, 1996; Washington & Craig, 1994, 2002). Some features are quite common in child discourse. For example, variable omission of subject–verb agreement markers ("the girl give_ the book to the baby") occurs as a high-frequency form both within and across students. Other features are much less common in the discourse of children, such as the use of *done* to express a completed action ("he *done* read the book"). At least, in part, these feature-level variations reflect differences in opportunities for their occurrence.

Child AAE also can be described in terms of frequency of use differences measured as feature production rates—for example, dialect density measures (DDMs; Craig, Washington, & Thompson-Porter, 1998; Kohler et al., 2007; Oetting, 2003; Oetting & McDonald, 2002). DDMs are robust indicators of systematic differences in amounts of feature production among AAE speakers based on demographic variables and language contexts, such as gender and socioeconomic status (SES; Washington & Craig, 1994), grade (Craig & Washington, 2004), community type (Craig & Washington, 2006; Oetting & Pruitt, 2005), and discourse genre (Terry, 2006; Thompson, Craig, & Washington, 2004).

Early examinations of a potential link between AAE and reading achievement consistently failed to find significant relationships between the production of phonological or morphosyntactic features and reading scores (Gemake, 1981; Goodman & Buck, 1973; Harber, 1977; Hart, Guthrie, & Winfield, 1980; Melmed, 1973; Rystrom, 1973–1974; Seymour & Ralabate, 1985; Simons & Johnson, 1974; Steffensen, Reynolds, McClure, & Guthrie, 1982). The methods of the early studies were constrained by the limited information available at the time about child AAE. Consequently, researchers selected a small set of features known to characterize the language use of adult African Americans and then correlated the child's production of these selected features with student reading scores. No significant relationships were observed across a large number of studies.

In contrast to this early research, more recent studies have shown that there is a relationship between AAE and reading when overall feature production is the independent variable rather than frequencies of use of a selected subset of features (Charity, Scarborough, & Griffin, 2004; Connor & Craig, 2006; Craig & Washington, 2004). Charity et al. (2004) found that African American kindergarteners through second graders with better reading scores on the Woodcock Reading Mastery Tests–Revised (WRMT-R; Woodcock, 1987) scored higher when repeating Standard American English (SAE) sentences on an elicited imitation task, interpreted as a greater "familiarity" with SAE. Similarly, African American first through fifth graders with lower DDMs outperformed their peers with higher DDMs on standardized tests of reading achievement (Craig & Washington, 2004). Whereas feature production rates are known to decrease systematically, on average, with rising elementary grades (Craig & Washington, 2004), these studies provided indirect empirical support for the view that some African American students learn to shift away from dialect forms toward SAE equivalents in literacy tasks across the elementary grades. A number of scholars have hypothesized that some African American students learn to "dialect shift," "code-switch," or develop "bidialectal skills" as part of their formal schooling without explicit instruction (Adler, 1992; Battle, 1996; Fishman, 1991; Ratusnik & Koenigsknecht, 1975). The more recent studies extend this hypothesis by proposing that dialect shifting actually provides advantages to students for the acquisition of literacy skills in measurable ways, especially for reading and spelling (Charity et al., 2004; Connor & Craig, 2006; Craig & Washington, 2004; Kohler et al., 2007; Terry, 2006).

The dialect shifting–reading achievement hypothesis has considerable intuitive merit. Students who adapt to the SAE language of the classroom and curriculum should find classroom learning in general and the acquisition of reading skills in particular to be less of a challenge than do those students who do not make this adaptation. By implication, any observed negative relationships between AAE feature production rates and reading achievement such as those observed by Charity et al. (2004) and Craig and Washington (2004) would derive from insufficient knowledge of SAE and an inability to dialect shift to SAE in literacy contexts that require this adaptation. In other words, this hypothesis proposes that there is nothing wrong with AAE as some lingering linguistic prejudice suggests; however, it is advantageous to become bidialectal.

Although the recent studies are suggestive, they all assume that dialect shifting has taken place in the relationships under investigation, rather than actually demonstrating this in some independent manner. This lack of empirical support for dialect shifting is a critical limitation in this literature. One way to demonstrate dialect shifting would be to collect AAE feature rates over time and compare earlier with later performances. Another way, suitable for cross-sectional research designs, would be to make within-subject comparisons between tasks that differ in the extent to which SAE might be expected. For example, Connor and Craig (2006) found evidence of dialect shifting for some preschoolers when comparing their spoken imitations of sentences presented in SAE, considered an explicit SAE demand context, with the reading of a wordless storybook, an implicit demand context. For older students, differing feature production rates have been observed for oral narratives, written narratives, and oral reading (Thompson et al., 2004). For the purpose of examining dialect shifting and reading, a comparison of AAE feature production rates in oral and written narratives seems particularly well suited to the detection of dialect shifting. Specifically, if students decrease their DDMs significantly between oral and written tasks, this would demonstrate that they are able to shift away from the spoken forms of AAE toward the conventional written forms of SAE in literacy contexts in which the expectation for SAE is more explicit. The research design could then probe for significant inverse relationships between Written DDMs and reading outcomes. Whereas it is likely that better readers are also better writers, an interpretation of this type would have stronger validity if differences in students' writing skills were considered as part of the analysis to ensure that dialect shifting in writing was making a unique contribution to reading outcomes apart from the contribution of general writing skills.

It is not clear from these recent studies whether the ability to dialect shift is a unique contributor to better reading outcomes or is better characterized as just one more oral language skill that undergirds the development of reading skills. A comparison of the relative contribution to reading outcomes of other important oral language skills such as vocabulary and syntax would be informative in interpreting the importance of any contribution of dialect shifting to reading achievement.

Family Socioeconomic Status (SES)

Low SES in general and higher rates of poverty in particular also have been implicated in the underachievement of African American students on a national level. Child poverty rates (FIFCFS, 2007) for African American students are approximately three times higher (approximately 35%) than those for non-Hispanic White students (approximately 10%).

There is no single best measure of SES or poverty (Liberatos, Link, & Kelsey, 1988). Median household income is one widely used measure and distinguishes African American and non-Hispanic White households. The median incomes of African American male adults are approximately 25% less than those of non-Hispanic White adult males. However, these large income gaps may still underrepresent differences in the financial circumstances of African American families (Hoffman & Llagas, 2003). For example, African Americans receive fewer inheritances and in smaller amounts, and they are less likely to receive substantial financial gifts when purchasing a first home or having a first child enter college (Darity & Nicholson, 2005).

It is widely agreed that poverty is a complex and multidimensional concept, often resulting in combined effects across a number of more discrete variables (Duncan & Magnuson, 2003). Any child living in a home where basic necessities such as food, shelter, clothing, and health care are inadequate is at risk for serious illness, poor school attendance, and compromised cognitive development (Bradley & Corwyn, 2002; Rooney et al., 2006). High levels of family stress and increased rates of behavioral and socioemotional difficulties characterize homes where basic resources are limited (McLoyd, 1990). Complicating this picture further, children living in low-income homes also are more likely to live in low-income communities where libraries and museums are rare and schools and teachers may be of lower quality (Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993; Hoffman & Llagas, 2003).

Overall, this literature indicates that the African American segment of the student population in this country is at risk for academic difficulties at least in part due to their disproportionately high rates of living in poverty. Whereas so many more African American students are affected by poverty than are non-Hispanic White students, and the negative effects of poverty can be profound, the outcomes of any examination of factors contributing to the Black–White achievement gap should not ignore SES. The literature indicates that measures beyond just household income should be adopted.

The purpose of this study was to examine the relationships between the ability to dialect shift from oracy to literacy tasks and reading achievement. Comparisons were made between AAE feature rates in the generation of an oral and a written narrative. It was hypothesized that African American students who spoke AAE in oral narratives would produce lower rates of AAE in writing. Feature production rates in writing were then examined for their relationship to standardized reading scores for African American students from both low-SES and middle-SES homes. It was hypothesized that when SES, general oral language skills, and writing skills were controlled, AAE production rates in written narratives would evidence an inverse relationship. The following questions were posed.

1. Are there statistically significant differences between feature production rates, measured as DDMs, in oral narrative compared with written narrative language samples that provide evidence of dialect shifting from AAE toward SAE?
2. What is the relationship between DDMs in an oral narrative task and reading achievement scores? What is the relationship between DDMs in a written narrative task and reading achievement scores?
3. How does AAE shifting relate to other oral language skills in predicting reading outcomes? Is there unique variance in reading accounted for by DDMs apart from the contributions of SES, other oral language skills, and writing skills?

Method

Participants

Participants were 165 typically developing African American first (n = 12), second (n = 37), third (n = 60), fourth (n = 30), and fifth (n = 26) grade students residing in Southeastern Lower Michigan. Approximately one half of the sample were boys, and one half were girls. The students were speakers of AAE, and their spoken discourse incorporated a variety of AAE features. All of the students were recruited to participate in a larger multiyear project examining the relationships between oral language and literacy skills in the elementary grades. The participant group for the current study included all students with standardized reading achievement scores, a sample of oral language elicited during a picture description narrative, and a sample of written language elicited during the generation of a spontaneous narrative.

All students were determined to be typically developing on the basis of an academic record free from referral for special services and of performance within normal expectations on a nonverbal measure of general cognitive skill, the Triangles subtest of the Kaufman Assessment Battery for Children (K-ABC; Kaufman & Kaufman, 1983). The mean standard score for the participant group was 10.6, with an *SD* of 2.2, which corresponded well to the expected standard scores on the test (M = 10, SD = 3).

Approximately one third of the students were from low-SES homes, and two-thirds were from middle-SES homes. SES was determined using computed scores from the Hollingshead Four Factor Index of Social Status (HI; Hollingshead, 1975), which has a range of potential computed scores from 8 to 66. The HI considers four types of information: caregiver education, caregiver occupation, gender, and marital status, based upon parent/caregiver report. SES was treated as a continuous variable using the HI computed scores in subsequent analyses.[1] Parent reports were unavailable for 4 students; thus, these students were excluded from SES analyses.

Data Collection, Scoring, and Measures

This study examined the relationships between reading achievement scores as the outcome variable and SES, AAE, other major nondialectal types of oral language skills, and writing skills. The instruments and measures are described in the paragraphs that follow.

Reading Achievement

All of the participants were administered one of a small set of standardized tests of reading achievement. Oral Reading Quotient standard scores from the Gray Oral Reading Tests (Wiederholt & Bryant, 1992) were collected by research staff, or scores were provided by the school district when students had them available from district-level testing. Tests and measures provided by the school districts were the following: the total reading score from the Iowa Tests of Basic Skills (Hoover, Dunbar, & Frisbie, 2001); the reading score from the TerraNova (1997); the total reading score from the Metropolitan Achievement Test (Balow, Farr, & Hogan, 1992); and the mean of two reading subtests, Story and Informational, from the Michigan Educational Assessment Program, which is a state-level achievement test (Michigan Educational Assessment Program, 1999–2001). Reading achievement scores were converted to z scores to standardize performance across the different tests, and these scores served as the dependent variable in the statistical design (Read), with an expected mean z score of 0 and *SD* of 1.0.

Language Sample Collection and Transcription

Oral and written narratives were collected from all students. The oral samples were collected during a picture description task in which each student described three colored action pictures (#5, #7, and #24) from the Bracken Concept Development Program (Bracken, 1986). Pictures were presented in a random order during this untimed task. Students were given the prompt, "Tell me as much as you can about these pictures." If students simply labeled objects or actions, they were given an additional prompt, "Tell me what is happening in the picture." Both the child and the examiner wore head microphones and were audio recorded.

Students were instructed to write a story about a topic of their own choosing that had a beginning, a middle, and an end. This story-generation task was selected to provide an authentic, child-centered elicitation context comparable with the oral task. The task was untimed. When the students completed their writing, each read his or her text aloud while tracing his or her progress through the text with a finger, and this was videotaped to facilitate interpretation during transcription and scoring. The oral and written samples were transcribed using the Codes for Human Analysis of Transcripts (CHAT) conventions of the Child Language Data Exchange System (CHILDES; MacWhinney, 1994).

Scoring of AAE

AAE features produced during the oral and written narratives were identified and coded for a potential set of 23 morphosyntactic, 9 phonological, and 9 combinations of morphosyntactic and phonological types based on a prior coding system developed for child AAE (Craig & Washington, 2006). The frequency command (FREQ), which tallies frequencies of coded behaviors, and the mean length of turn command (MLT), which counts units within a turn such as words, of the Computerized Language Analysis Program (CLAN) from CHILDES automatically generated production frequencies and rates. From the AAE scoring, the DDM was calculated for the oral and written narratives, in which AAE frequencies

[1]The HI assigns total weighted scores to five social strata. The strata ranged from unskilled labor and menial service work to major business and professional. These categorical designations were not used in analyses in this study.

(tokens) regardless of type were divided by total number of words produced in the sample (Craig et al., 1998; Oetting & McDonald, 2002). For example, five instances of AAE feature production divided by 100 words yielded a DDM of 0.050, corresponding to the production of one feature every 20 words. Using words as a base in the calculation helped to minimize the effects of potentially inherent relationships between longer sentences and increased opportunities for features to occur. The mean DDMs varied significantly by grade, Oral $F(4, 160) = 3.513$, $p = .009$; Written $F(4, 160) = 2.609$, $p = .038$. Tukey's HSD revealed statistically significant differences between Grade 1 and Grades 3, 4, and 5 for Oral DDMs but no statistically significant additional contrasts by grade. For Written DDMs, no statistically significant post hoc effects were observed for grade. In the context of some grade effects for DDM and the need to standardize all other variables in the study, DDMs were standardized by grade as well.

Oral Language Measures

Five measures of oral language were selected for examination that have been shown previously to be useful in characterizing a broad range of nondialectal oral language skills of African American students (Craig & Washington, 2006). The vocabulary measure is standardized by age; the other four are informal language sampling measures that are not standardized by age or grade. However, students in higher grades have significantly higher scores than those in lower grades on these four measures (Craig, Washington, & Thompson, 2005). Therefore, for the purposes of the present study, scores on the four informal measures were standardized within grades to remove the grade effect, and the standardized scores were used in subsequent analyses. Each measure is described below.

Peabody Picture Vocabulary Test–III (PPVT-III; Dunn & Dunn, 1997*).* This widely used standardized test of receptive vocabulary measured students' vocabulary breadth or ability to match spoken words to pictured objects and actions in the form of common nouns as well as knowledge of more abstract concepts such as those represented by adverbs. Although earlier versions of this test discriminated against African Americans (Washington & Craig, 1992), the PPVT-III is more culturally fair and informative for African American students (Washington & Craig, 1999). The expected mean standard score was 100 with an *SD* of 15.

Responses to requests for information (Wh-q). A *Wh*-question (Wh-q) task assessed students' ability to respond to requests for information and was developed by Craig and Washington (2000) specifically for the assessment of African American students. Students were presented with two randomly ordered colored action pictures; one depicted a snow-shoveling scene, and the second depicted a beach scene. The task probes the student's understanding of simple cognitive relationships (e.g., "What's this?") and more difficult comparatives, predictions, and explanations (e.g., "How is this like this?" and "What do you think will happen when the man/woman [action + object]?"). Scoring of Wh-q is based on a 3-point scale, with a total of 114 possible points.

Mean length of communication units (MLCU). MLCU was calculated for the narratives as the number of words produced divided by the number of communication units, defined as an independent clause and its modifiers (C-units; Loban, 1976) in each student's oral and written narrative, and it provided a measure of oral productivity.

Complex syntax production rates (Csyn). Oral narratives were coded for production of any of 11 complex syntax types (Craig & Washington, 1994), including simple sentence constructions such as simple infinitives with the same subject (e.g., "He don't need to stand up") and more advanced forms such as relative clauses (e.g., "That's the noise that I like"). Complex syntax frequencies (tokens) regardless of type were divided by the total number of C-units produced in the oral and written narratives of each participant and were reported as overall production rates of complex syntax.

Number of different words (NDW). NDW was a rate calculated from the oral and written narratives and provided a measure of expressive vocabulary diversity. The FREQ command automatically generated NDW word lists. Adjustments were made to the word lists in order to replicate traditional methods of calculating NDW (Miller, 1982; Templin, 1957) so that root words were considered as single words regardless of morphological suffixes (e.g., *hope, hoping,* and *hopes* were considered as three examples of the single word type *hope*). In contrast, irregular nouns and verbs were considered as separate word types (*leaf, leaves* and *sit, sat* were calculated as separate word types). NDW was the sum of the word types for the oral and written narratives divided by the total number of C-units in each sample.

Written Language Skills

Written language skills were evaluated by using the Beginning Writer's Continuum (BWC; Northwest Regional Educational Laboratory, 2001) to assess each written narrative. The BWC is an extension of the 6+1 Trait (Northwest Regional Educational Laboratory, 2001) rubric, scaled down to include beginning writers. The BWC rubric evaluates seven core skill areas—ideas, organization, voice, word choice, sentence fluency, conventions, and presentation—against five developmental levels: experimenting (lowest = 1 point), emerging, developing, capable, and experienced (highest = 5 points). Points are assigned to each skill area, corresponding to the scorer's judgments of the student's developmental level. Total scores range from 5 to 35. The average total score varied significantly by grade, $F(4, 160) = 16.224$, $p < .001$, so scores were standardized by grade for subsequent analyses.

Reliability

Transcription reliabilities were established by independent observers who retranscribed 10% (17 participants) of the oral and written narratives. Reliabilities were calculated by dividing the number of agreements by the number of agreements plus disagreements. Morpheme and C-unit reliabilities were high for the oral (98% and 96%, respectively) and written samples (100% and 99%, respectively). Scoring reliabilities for grammatical complexity were examined, and they were high for tokens (95%) and for types (98%). Ten percent of the participants were randomly selected and rescored for the BWC. Exact agreement scoring reliabilities for two raters ranged from 38% to 57% for the seven traits of writing skill. As is common with categorical judgment measures, adjacent agreement reliabilities were also calculated and were much higher at 90% to 100%, indicating acceptable scoring reliability for this rubric.

Samples were recoded for AAE types and tokens. AAE coding agreements for oral samples were high for tokens (93%) and types (99%). Coding agreements were also high for tokens (91%) and types (100%) in the writing samples.

Results

Relationships were examined between AAE production rates in the generation of short oral and written narratives and reading achievement test scores, while controlling for SES (HI), general oral language skills, and written language skills (BWC). Grade was not treated as an independent variable because the measurement variables were standardized by grade.

Table 1 provides a summary of selected language characteristics for the two sampling contexts. The oral narrative elicited more language in terms of significantly greater numbers of words, paired $t(164) = 15.757$, $p < .001$; frequencies of C-units: paired $t(164) = 20.455$, $p < .001$; and a greater diversity of word choice, NDW: paired $t(164) = 42.624$, $p < .001$, than did the written narratives. The written narratives elicited significantly longer C-units on average, MLCU: paired $t(164) = -4.101$, $p < .001$, than did the oral narratives. The grammatical complexity of the two contexts did not differ significantly, Csyn: paired $t(164) = -0.806$, $p = .422$. These findings revealed that the oral and written narratives differed from each other as language elicitation contexts, primarily in terms of overall amount of language elicited and lexical complexity. The differences in linguistic productivity underscored the need to control for differing sample lengths, for example, by rate measures, and overall the comparison indicated that students were sensitive to genre differences.

Reading Achievement (Read)

For the sample of participants as a whole, the mean z score was -0.303 with an SD of 1.01. On average, therefore, the group was performing within the expected range but somewhat below the mean on the tests of reading achievement. There was considerable performance spread across the students, with a minimum reading standard score of -3.00 and a maximum of 2.44.

Reading standard scores related to SES. A Pearson correlation coefficient showed a low, statistically significant, positive relationship between HI total scores and Read ($r = .192$, $p = .015$). On the basis of (a) this statistical finding, (b) the national demographics that show disproportionate numbers of African American students living in low-SES homes, and (c) the theoretical importance of SES for reading achievement, SES was included in subsequent analyses.

Read did not vary significantly by gender. The mean Read for males ($M = -0.234$, $SD = 1.057$) was not

Table 1. Means and standard deviations of selected language measures by narrative context.

Variable	Oral narrative *M (SD)*	Written narrative *M (SD)*	Paired *t*	*p*	Cohen's *d*
Words	188.15 (85.845)	69.61 (50.893)	15.757	< .001	1.38
C-units	26.44 (9.554)	8.73 (5.223)	20.455	< .001	1.85
MLCU	7.083 (1.684)	8.097 (2.934)	−4.101	< .001	0.35
Csyn	.631 (0.304)	0.666 (0.517)	−0.806	.422	0.07
NDW	3.387 (0.788)	0.651 (0.127)	42.624	< .001	3.47

Note. C-unit = communication unit; MLCU = mean length of communication units; Csyn = complex syntax production rate; NDW = number of different words.

significantly different from the mean Read for females ($M = -.367$, $SD = .966$), $t(163) = 0.852$, $p = .395$. Therefore, gender was not considered as a potential predictor in subsequent analyses.

Feature Production Rates

For the sample of participants as a whole, the mean unstandardized DDM in the oral narrative task was 0.103 ($SD = 0.74$), indicating that, on average, students produced one AAE feature for every 10 spoken words. After standardizing by grade, Oral DDMs did not vary by gender, $t(163) = 0.547$, $p = .585$, but correlated with HI total scores for SES ($r = -.162$, $p = .040$).

The mean unstandardized DDM in the writing task was 0.040 ($SD = 0.049$); this was significantly lower than the mean DDM in the oral narratives, pairwise $t(164) = 9.74$, $p < .001$, and had a large effect size ($d = 0.85$). This frequency-of-use difference was in the direction hypothesized and indicated that students were dialect shifting away from AAE toward SAE between the oracy and literacy context.

DDMs and reading achievement were negatively related, with low to moderate effect sizes. Both Oral and Written DDMs were inversely correlated to Read at statistically significant levels: $r = -.218$, $p = .005$, and $r = -.411$, $p < .001$, respectively (see Table 2). As students produced higher AAE feature rates in either oral or written narratives, their reading z scores decreased, and vice versa.

Intercorrelations between Oral and Written DDMs and the other oral language measures are presented in Table 2. Both Oral and Written DDMs were inversely correlated to the PPVT at statistically significant levels, $r = -.306$, $p < .001$, and $r = -.243$, $p = .002$, respectively. Oral DDM was negatively related to MLCU ($r = -.173$, $p = .027$), and Written DDM was negatively related to Csyn ($r = -.176$, $p = .024$) at statistically significant but weak levels. Other intercorrelations between DDMs and the oral language measures were nonsignificant.

Oral Language Skills

The non-DDM measures of oral language also are reported in Table 2. All but one (NDW) correlated positively with Read at statistically significant levels ($p < .05$). Among the oral language measures, PPVT and Read showed the strongest positive relationship, $r = .518$, $p < .001$. All but one (Wh-q) of the oral language measures also correlated positively and significantly with each other.

These intercorrelations were suggestive that the five oral language measures might form two clusters. MLCU, Csyn, and NDW evidenced strong intercorrelations with Pearson's r, ranging from .597 to .704, offering strong evidence that they were measuring a common unobserved variable. The association between PPVT and Wh-q was modest ($r = .392$), which indicated that these two measures might share some commonality with each other. MLCU, Csyn, and NDW were not strongly correlated with either PPVT or Wh-q (the strongest correlation was between Csyn and PPVT, Pearson's $r = .220$), suggesting that MLCU, Csyn, and NDW were distinct from PPVT and Wh-q.

As suggested by the correlation analyses, factor analysis revealed a fairly clear pattern in which there were two oral language skill components (see Table 3). Component I was labeled a Comprehension Factor (COMP),

Table 2. Means and standard deviations for Reading (Read), DDMs, oral language measures, and written language skills, and Pearson correlations for Read, DDMs, and the standardized scores of the oral and written (BWC) language measures ($N = 165$).

	Read	Oral DDM	Written DDM	PPVT-III	Wh-q	MLCU	Csyn	NDW	BWC
M	–0.303	0.103	0.040	99.552	105.291	7.083	0.631	3.387	24.220
SD	1.010	0.074	0.049	12.173	5.580	1.684	0.304	0.788	3.753
Read	—	–0.218**	–0.411***	0.518***	0.276***	0.184*	0.253**	0.123	0.284***
Oral DDM		—	0.125	–0.306***	–0.086	–0.173*	–0.119	–0.047	0.038
Written DDM			—	–0.243**	–0.045	–0.135	–0.176*	–0.128	–0.188*
PPVT				—	0.392***	0.211**	0.220**	0.199*	0.138
Wh-q					—	–0.005	0.056	0.067	0.189*
MLCU						—	0.647***	0.704***	0.166*
Csyn							—	0.597***	0.124
NDW								—	0.204
BWC									—

Note. DDM = dialect density measure; PPVT-III = Peabody Picture Vocabulary Test–III; Wh-q = *wh*-questions; BWC = Beginning Writer's Continuum.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3. Factor loadings and communalities for exploratory factor analysis using principal axis extraction with varimax-rotation.

	Oral DDM included			Oral DDM excluded		
	Component I: COMP	Component II: PROD	Extracted Communalities	Component I: COMP	Component II: PROD	Extracted Communalities
PPVT	.940	.137	.903	.609	.194	.408
Wh-q	.409	−.009	.167	.651	−.024	.425
Csyn	.133	.729	.549	.120	.733	.551
MLCU	.095	.881	.786	.044	.883	.781
NDW	.094	.789	.631	.107	.791	.637
Oral DDM	−.294	−.106	.098	—	—	—
% shared variance	16.6	35.6	52.2	16.5	39.6	56.1

Note. COMP = Comprehension factor; PROD = Production factor.

representing the common unobserved variable that was strongly related to PPVT and Wh-q, and Component II was labeled a Production Factor (PROD), representing the common latent variable that was strongly related to Csyn, MLCU, and NDW. Oral DDM was weakly and negatively related to both Components I and II.

Component I explained 17% of the shared variation among the five oral language measures and Oral DDM combined, Component II explained 35%, and the two components together explained 52% of the total variation when Oral DDM was included. Only approximately 10% of the shared variance in Oral DDM was explained by the two common components, indicating that the factors did not successfully explain Oral DDM. As in Oral DDM and the correlational measures discussed previously, the factor analysis indicated that DDM was distinct from the five measures of oral language. Table 3 shows that after removing Oral DDM, the pattern of two factors remained. The total shared variation explained by the two factors combined increased from 52% to approximately 56%.

Written Language Skills

The mean written language score on the BWC was 24.22 of a possible 35 points, with considerable performance spread across participants, from 17 to 35 points. As expected, standardized scores on the BWC were positively related to scores on Read at a statistically significant low-to-moderate level (r = .284, p < .001). Better readers tended to be better writers. The BWC showed statistically significant low correlations with Wh-q and MLCU but not with the other oral language measures. Writing skill as assessed with the BWC was negatively correlated with Written DDM at a statistically significant low level (r = −.188, p = .015), similar to the inverse relationship observed between Read and Written DDM (see Table 2).

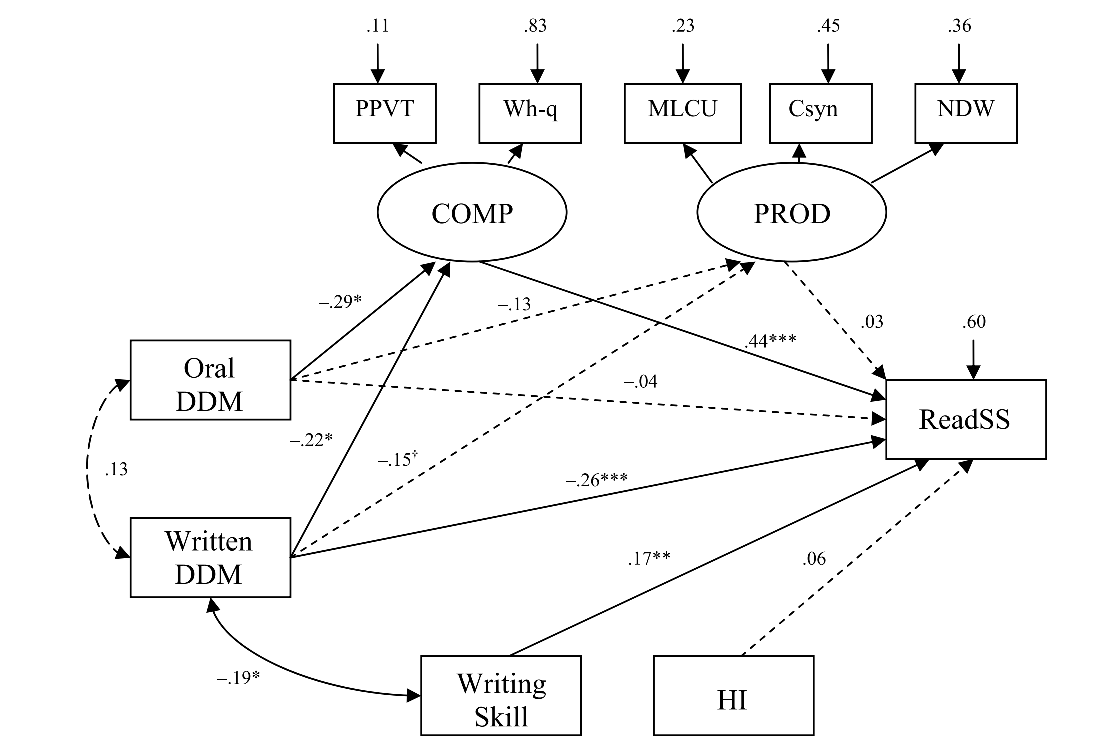
Contribution of DDMs to Student Reading Achievement

The number of statistically significant intercorrelations between the oral language measures, BWC, reading achievement scores, and the DDMs and non-DDM measures underscored the theoretical need to examine the relationship of DDM to reading achievement when the influences of the other oral and written language skills were controlled. Therefore, the relationships between Read, HI, DDMs, COMP and PROD, and BWC were further examined in a structural equation model (SEM) using Amos 7.0 (Arbuckle, 2006). Figure 2 displays the model. Based on goodness-of-fit indexes (Kline, 2005), the model was a reasonably good fit to the data, $\chi^2(24, N = 165) = 35.784$, p = .058, with a root-mean-square error of approximation (RMSEA) of .055, a 90% CI of 0–.090, a nonnormed fit index (NFI) of .912, and a comparative fit index (CFI) of .966, supporting both the appropriateness of the measurement and the structural part of the model. The goodness-of-fit indexes indicated that the model captured the interrelationships among variables to an acceptable degree.

The measurement part of the model confirmed that the two factors—COMP and PROD—explained all five oral language variables with statistical significance (see Table 4). A substantial amount of variation in MLCU, Csyn, and NDW were accounted for by PROD (range of R^2: .551–.771). COMP explained approximately 89% of the variation in PPVT but only 17% in Wh-q, which suggested that COMP was primarily constructed by PPVT.

Approximately 40% of the total variation in reading achievement scores was explained by the model (see Table 5). HI had no significant effect on Read in the context of the model after controlling for the other variables. Table 6 lists the estimated regression weights for all paths. For the two oral language factors, COMP had a direct effect on Read (standardized β = .436, p < .001)

Figure 2. Influences of Oral dialect density measure (DDM), Written DDM, oral language skills, Beginning Writer's Continuum (BWC), and socioeconomic status (SES) as measured by the Hollingshead Index (HI) on reading achievement (Read). Correlation between HI and Oral DDM was −.16, p = .039; correlation between HI and Written DDM was −.11, p = .183; and correlation between HI and BWC was .15, p = .058. Solid lines indicate significant paths; dashed lines indicate insignificant paths. PPVT = Peabody Picture Vocabulary Test; Wh-q = *wh*-questions; MLCU = mean length of communication unit; Csyn = complex syntax production rate; NDW = number of different words; COMP = Comprehension Factor; PROD = Production Factor; C-unit = communication unit.
$^{\dagger}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.



and PROD did not (standardized β = .034, p = .622). In addition, BWC had a direct effect on Read (standardized β = .166, p = .009).

Oral DDM showed no direct effect on Read (standardized β = −.040, p = .599) after controlling for HI, COMP, PROD, and BWC (see Table 5). Oral DDM had a significant effect on COMP (standardized β = −.294, p = .011) but not PROD (standardized β = −.132, p = .113). Oral DDM had a statistically significant indirect effect on Read, estimated at −.133, which was significantly mediated through COMP (Sobel Test, z = 2.151, p = .031).[2] Oral DDM showed no significant indirect relationship to Read through PROD (Sobel Test, z = 0.467, p = .641).

Written DDM impacted Read quite differently from Oral DDM (see Table 6). After controlling for HI, COMP, PROD, and BWC, Written DDM showed a significant direct effect on Read (standardized β = −.257, p < .001). As DDM decreased by an *SD* of 1 in the written narrative task, students' reading achievement scores increased by approximately one quarter of 1 *SD*. Written DDM also showed marginally significant indirect effects on Read through COMP (Sobel Test, z = 1.893, p = .058). There were no significant indirect effects through PROD (Sobel Test, z = 0.472, p = .647). Considered together, the direct path contributed approximately 72% to the combined effect (Direct Effect ÷ Total Effect), and the other 28% was through the significant and nonsignificant relationships mediated by COMP and PROD (Indirect effect ÷ Total effect). Table 5 summarizes these relationships.

Post Hoc Analyses

To further explore these findings, two post hoc analyses were performed.

Reading outcomes. The purpose of this post hoc analysis was to categorize students by reading achievement

[2]The indirect effect of Oral DDM on Read, mediated by COMP, equaled the product of two standardized path coefficients, the path coefficient for Oral DDM → COMP (−.294), and the coefficient for COMP → Read (.436). The effect mediated by PROD equaled the product of the coefficient for Oral DDM → PROD (−.132), and the coefficient for PROD → Read (.034). The total indirect effect was the sum of the two compound paths, numerically being −.133.

Table 4. Factor loadings and uniqueness for confirmative factor model of oral language skills variables.

Factor and variable	Unstandardized factor loading	*SE*	Standardized factor loading	*p*	R^2	Uniqueness
COMP						
PPVT	27.942	8.420	.943	< .001	.889	.111
Wh-q	1.000	—	.416	—	.173	.827
PROD						
MLCU	1.099	0.106	.878	< .001	.771	.229
Csyn	0.929	0.097	.743	< .001	.551	.449
NDW	1.000	—	.799	—	.639	.361

level and then confirm that the groups were distinguished from each other by patterns of DDM, and oral and written language skills as indicated by the SEM. The participants were sorted into two groups, a *below-average* reading group (n = 104; 63% of participants) and an *above-average* reading group (n = 61; 37% of participants), on the basis of their z scores (≤ 0 or > 0, respectively). The above-average reading group was characterized by larger receptive vocabularies (PPVT), better understanding of oral requests (Wh-q), the production of longer sentences (MLCU), more advanced syntax (Csyn), and better written language skills (see Table 7).

DDMs were marginally different between groups in the oral context, independent $t(163) = 1.946$, $p = .053$. However, the above-average reading group shifted toward significantly less dialect in writing and more SAE than what was shown by the students in the below-average reading group, independent $t(157) = 5.143$, $p < .001$. The difference was a moderate-to-large effect size ($d = 0.7$); students in the below-average reading group produced dialect features at rates approximately three times those of students in the above-average reading group.

In addition to mean DDMs for the groups, patterns of AAE change at the individual level were examined as well. This analysis of unstandardized scores used the following calculation: Oral DDM – Written DDM = Individual DDM Shift Score. A positive individual shift score meant that a student had a higher DDM in the oral context and therefore shifted to a lower DDM in the writing context. A negative individual shift score represented a nonshift. This calculation revealed that most students (85%) decreased their DDMs between the oral and written narratives, regardless of their reading group designation. In the below-average reading group, 81% of students showed decreases in DDM between the oral and written narratives, and 19% showed no shifts. In the above-average reading group, 92% of students showed decreases in DDM between the oral and written narratives, and 8% showed no shifts. This difference was marginally significant, $\chi^2(1, N = 165) = 3.641$, $p = .056$. The individual shift scores indicated that most students, regardless of reading skill level, were attempting to dialect shift in the literacy context, and it confirmed that the better readers had a greater tendency to make this adaptation.

Measurement. Second, it seemed possible that the downward shift in AAE production between the oral and written language samples could be an artifact of differences in opportunities between the two contexts. In other words, lower DDMs in the written samples might reflect a fundamental difference in genre rather than a difference in dialect usage. Perhaps the oral sample naturally offered more opportunities for use of AAE features than did the written samples. Theoretically, for example, the

Table 5. Standardized effects of HI, COMP, PROD, BWC, and DDMs on reading achievement using structural equation modeling.

Read (R^2 = .397)	HI	COMP	PROD	BWC	Written DDM	Oral DDM
Total effect	.058	.436	.034	.166	−.357	−.173
Direct effect	.058	.436***	.034	.166**	−.257***	−.040
Indirect effects	—	—	—	—	−1.00	−.133
Indirect effect through COMP	N/A	N/A	N/A	N/A	−.058†	−.128*
Indirect effect through PROD	N/A	N/A	N/A	N/A	−.005	−.007

Note. HI = Hollingshead Four Factor Index of Social Status.

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 6. Path coefficients estimates of HI, COMP, PROD, BWC, and DDMs predicting reading achievement using structural equation modeling.

Path	*B*	*SE*	β	*p*
Written DDM → Read	−0.259	.072	−.257	< .001
Oral DDM → Read	−0.041	.077	−.040	.599
HI → Read	0.006	.006	.058	.367
COMP → Read	1.058	.262	.436	< .001
PROD → Read	0.042	.086	.034	.622
BWC → Read	0.167	.064	.166	.009
Written DDM → COMP	−0.090	.042	−.218	.030
Written DDM → PROD	−0.124	.067	−.155	.064
Oral DDM → COMP	−0.122	.048	−.294	.011
Oral DDM → PROD	−0.106	.067	−.132	.113

descriptive oral narratives using pictures should offer more opportunities for the use of the present-tense zero copula feature ("two little boys *are* helping that little boy skate"), whereas the written stories should offer more opportunities for the use of the zero past feature ("the dog look*ed* for a dog bone"). In the present study, the analytic unit—DDM—offered a way to neutralize genre effects, but it seemed important to check that this assumption was valid. It was hypothesized that decreased opportunities for any specific feature in one context would be balanced against increased opportunities for another feature in the other context. A feature-level analysis should show these trade-offs.

In order to test these possibilities, oral and written narratives were examined for differences in opportunity of the zero copula and zero past features, considered high probability features for the oral descriptive narratives and written stories, respectively. A random subset of participants was selected, representing 20% of the sample as a whole (n = 34). Opportunities for present-tense zero copula and zero past features were identified and compared for the two narrative contexts by summing the number for each feature generated by each student and dividing by the number of words in each sample, as a control for differing sample lengths. As anticipated, the mean number of zero copula and zero past features differed significantly by context, indicating that they were genre specific. However, as seen in Table 8, a trade-off was evident between the two features. When opportunities for both features together were compared, there was no significant difference in opportunities, paired $t(33) = 0.967$, $p = .341$. This analysis confirmed that the students' oral language use did differ by genre, but the rate measure-DDM would capture differences in rates of dialect production between the contexts.

Discussion

The reading achievement scores of this sample of participants mirrored trends for African American students at the national level, scoring below the mean on major tests of reading achievement. Instead of an expected mean z score of 0, as a whole, the group mean was

Table 7. Means and standard deviations of standardized scores for the DDMs, oral language variables, and BWC, by reading group.

Variable	Reading at or below zero (n = 104)	Reading above zero (n = 61)	*p*	Cohen's *d*
		DDM		
Oral	0.114 (1.033)	−0.194 (0.880)	.053	0.31
Written	0.243 (1.111)	−0.414 (0.522)	< .001	0.70
		Oral language skills		
PPVT	95.49 (11.622)	106.48 (9.790)	< .001	0.99
Wh-q	−0.161 (1.048)	0.274 (0.812)	.006	0.45
Csyn	−0.218 (0.915)	0.372 (1.004)	< .001	0.62
MLCU	−0.154 (0.920)	0.263 (1.049)	.008	0.43
NDW	−0.109 (0.945)	0.186 (1.038)	.064	0.30
BWC	−0.167 (0.938)	0.267 (1.019)	.006	0.45

Table 8. Mean rates and standard deviations of opportunities per words for each feature in the two narrative contexts.

Feature	Oral narrative *M* (*SD*)	Written narrative *M* (*SD*)	Paired *t*	*p*	Cohen's *d*
Zero copula	.063 (.030)	.015 (.028)	7.104	.001	1.60
Zero past	.030 (.020)	.069 (.049)	−3.963	.001	0.80
Zero copula + zero past	.093 (.037)	.084 (.048)	0.967	.341	0.19

lower, at −0.303. However, there was considerable spread in reading achievement *z* scores across the 165 students, from −3.00 to 2.44. The goal of the present project was to evaluate whether dialect shifting contributed to this variability in reading achievement in important ways.

The model examined relationships among AAE production and reading achievement scores, other important oral language skills, writing skills, and SES. The model was successful in explaining 40% of the variance in reading scores. There has been considerable discussion about home and community factors contributing to the Black–White achievement gap, such as the prevalence of home literacy materials for preschoolers (Scarborough & Dobrich, 1994; Whitehurst & Lonigan, 2001), cultural differences in approaches to literacy (Ball & Lardner, 2005; McBride-Chang, 2004), and household income disparities that can impact school readiness and educational engagement across the early elementary grades (Bradley & Corwyn, 2002; FIFCFS, 2007; Rooney et al., 2006). Influences such as these were not part of the model and likely contributed to the approximately 60% of variance in reading scores not explained by the variables considered in this investigation.

All of the participants in this study spoke AAE. To the extent that the oracy context provided a baseline measure of feature production rates, on average the participants produced one feature for every 10 words they spoke. Very little research has accorded a role to oral language factors or AAE in the Black–White achievement gap until recently. In each of these recent studies, the relationships were inverse, such that lower feature production rates were associated with higher literacy scores. Similarly, in the present study both Oral and Written DDMs were inversely correlated to Read at statistically significant levels. In both contexts, as student rates of feature production increased, their reading achievement scores decreased.

Implicit in these newer studies has been the assumption that any observed negative relationship between feature production rates and literacy outcomes was due to dialect shifting. The dialect shifting–reading achievement hypothesis predicts that African American students who are speakers of AAE but who shift toward SAE in literacy tasks presented in SAE will outperform students who do not make this shift. Fundamental to the appropriateness of this interpretation is the need to demonstrate dialect shifting. Modeled after the work of Connor and Craig (2006) with preschoolers, the present study provided evidence of dialect shifting by making within-student comparisons between dialect production in an oracy and a literacy context. Although all participants produced AAE in the generation of a short oral narrative, AAE rates decreased significantly when students were writing a short narrative, from a mean of .103 down to .040. The change in participants' dialect production was observable at both group and individual levels. It is noteworthy that AAE rates in the oracy task did not directly predict reading outcomes, whereas AAE rates in the writing task did. The present study confirms that many African American students are able to dialect shift (85% of students in the present study) and that this shifting can be operationalized for research purposes by comparing feature production rates in spontaneous speaking and writing contexts. Future research that focuses on the impact of dialect shifting might benefit from adopting this methodological heuristic.

The current findings provide strong support for the dialect shifting–reading achievement hypothesis. It was not simply being a dialect speaker or the density of feature production in oral discourse that predicted reading achievement. Oral DDMs were not a direct predictor of Read, and only a modest indirect effect was observed, which was significantly mediated through COMP. Overall, all students spoke AAE, but their spoken feature production rates were not of direct consequence to reading achievement. In the present study, SEM offered a level of statistical control not available in prior studies, which, unlike the current findings, reported a relationship between oral AAE production rates and reading outcomes (Charity et al., 2004; Craig & Washington, 2004). The findings of the present study indicate that the relationships between oral AAE and reading outcomes reported previously likely reflected the influence of important co-variables such as SES and general oral language and writing skills, not just oral AAE production rates. The high levels of control in the SEM analyses clarified these relationships.

What did predict reading achievement was Written DDM. The ability to shift away from spoken levels of AAE features toward more SAE in the written task was of consequence to reading achievement. Written DDM showed a statistically significant direct effect on Read, such that an *SD* decrease of 1 for Written DDM corresponded to a 0.26-*SD* improvement in Read. A modest indirect effect of Written DDM on Read was present through COMP. The combined effects of direct and indirect influences of Written DDM on Read were substantial, estimated at –.357. Further, when students were grouped into higher and lower reading groups, students in the lower reading group produced dialect features at rates approximately three times those of the students in the higher achievement group.

In the present study, better readers were better writers and vice versa. Scores on the BWC and Read were positively correlated at a statistically significant low-to-moderate level, and BWC showed a statistically significant direct effect on Read in the SEM. Accordingly, the model included BWC to assess whether the effects of Written DDM on Read might be accounted for by general writing skill. When the other variables were controlled, including BWC, Written DDM exerted a statistically significant direct effect on Read. These findings indicated that shifting away from AAE toward SAE in writing positively impacted reading outcomes beyond the influences represented by good writing skills. The differences in sample length and lexical complexity of the oral and written narratives as well as the different levels of opportunities for present and past tense features to occur indicated that the students were sensitive to genre differences. However, the DDM analyses neutralized genre-specific sample length and opportunity effects of the oral and written narratives and clarified that the decrease in feature rates in the written samples were best characterized as dialect shifting.

The SEM revealed a low-to-moderate statistically significant negative relationship between Written DDM and BWC (standardized $\beta = -.19$, $p = .018$). Whereas both Written DDM and BWC exerted significant direct effects on Read, it seems important for future research to learn more about the association between lower AAE production rates in writing and overall writing skills. Does decreased use of AAE features in writing contexts provide a foundation for better general writing skills, or do better writing skills contribute to the student's ability to learn to use SAE in literacy contexts? It will be important for future research to answer these questions.

Good general oral language skills lay a strong foundation for reading acquisition (Scarborough, 2001; Snow, Burns, & Griffin, 1998; Storch & Whitehurst, 2002). In the present study, five measures of oral vocabulary, syntax, and sentence production were examined for their relationships to DDM and Read. Consistent with the extant literature on the relationship between oral language skills and reading acquisition, all five measures correlated positively with Read at statistically significant levels. The understanding of spoken vocabulary, as measured by the PPVT-III, showed the strongest positive relationship to reading achievement scores, and students in the higher reading group had better receptive vocabulary scores than did students in the lower reading group. Although the PROD factor had no significant direct effect on Read, in the present study receptive oral language skills, represented by the factor COMP, had a direct effect on Read, and most of this effect was from the influence of the PPVT-III scores. These findings are consistent with prior research, which demonstrates that vocabulary breadth is a core component to the development of good reading skills by African American students (Thompson, 2003).

Although the findings of the present study provide substantial support for the dialect shifting–reading achievement hypothesis, they fall short of demonstrating a cause–effect relationship between dialect shifting and reading outcomes. At this time, the data are persuasive that a relationship exists between dialect shifting and reading outcomes, but the direction of influence remains unconfirmed. The present analyses were unidirectional, exploring the influences of dialect shifting on reading. Therefore, this study does not rule out that the relationship between dialect shifting and reading may be better characterized as the reverse or as even bidirectional in nature. Perhaps a skilled reader's emerging sensitivity to the forms of language scaffolds the learning of SAE, with benefits to a range of literacy tasks. Future research that compares the teaching of dialect shifting to an explicit instructional focus on the syntactic and phonological forms of SAE should be informative in demonstrating cause–effect influences and their directionality. Therefore, the limits of the present study must be considered when formulating implications of this work. The need to improve reading outcomes for the nation's African American elementary-grade students is pressing. However, it would be premature to interpret the findings of the present study as anything more than support for a promising and relatively new direction in the field of reading acquisition.

It is not clear whether precious educational resources should be spent on teaching African American students to dialect shift as part of reading instruction. It is an established observation that some African American students learn the SAE of texts without direct instruction (Adler, 1992; Battle, 1996; Fishman, 1991; Ratusnik & Koenigsknecht, 1975). Would it be beneficial to supplement this spontaneous learning in more formal ways? Should students who do not make this linguistic adaptation to classroom instruction on their own be taught to dialect shift? If so, how should this instruction be delivered so that it meets the educational goals while preserving and respecting heritage language forms? Contrastive analysis in which differences between AAE and

SAE are identified and the use of the SAE alternatives are encouraged (Sweetland, 2006; Wheeler & Swords, 2006) has been proposed as one instructional approach to teach dialect shifting. Is this method effective in reducing the Black–White achievement gap for reading? These are important questions for speech–language clinicians in the public schools, classroom teachers, and policy makers. The present study indicates that dialect shifting may play an important causal role in the reading acquisition of African American students, and the shift is occurring in writing contexts. Future research that addresses issues of causality and implications for clinical and educational practice promises to make important contributions to the process of discovering educational solutions to the reading challenges faced by our minority-language students.

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References

Adler, S. (1992). *Multicultural communication skills in the classroom*. Boston: Allyn & Bacon.

Arbuckle, J. L. (2006). *Amos 7.0* [Computer software]. Spring House, PA: Amos Development Corp.

Ball, A. F., & Lardner, T. (2005). *African American literacies unleashed: Vernacular English and the composition classroom*. Carbondale, IL: Southern Illinois University Press.

Balow, I. H., Farr, R. C., & Hogan, T. P. (1992). *Metropolitan Achievement Test 7*. San Antonio, TX: Psychological Corporation.

Battle, D. E. (1996). Language learning and use by African American children. *Topics in Language Disorders, 16,* 22–37.

Bracken, B. A. (1986). *Bracken Concept Development Program*. San Antonio, TX: Psychological Corporation.

Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53,* 371–399.

Brooks-Gunn, J., Duncan, G. J., Klebanov, P. K., & Sealand, N. (1993). Do neighborhoods influence child and adolescent development? *American Journal of Sociology, 99,* 353–395.

Charity, A. H., Scarborough, H. S., & Griffin, D. M. (2004). Familiarity with School English in African American children and its relation to early reading achievement. *Child Development, 75,* 1340–1356.

Connor, C. M., & Craig, H. K. (2006). African American preschoolers' language, emergent literacy skills, and use of African American English: A complex relation. *Journal of Speech, Language, and Hearing Research, 49,* 771–792.

Craig, H. K., Thompson, C. A., Washington, J. A., & Potter, S. L. (2003). Phonological features of child African American English. *Journal of Speech, Language, and Hearing Research, 46,* 623–635.

Craig, H. K., & Washington, J. A. (1994). The complex syntax skills of poor, urban, African American preschoolers at school entry. *Language, Speech, and Hearing Services in Schools, 25,* 181–190.

Craig, H. K., & Washington, J. A. (2000). An assessment battery for identifying language impairments in African American children. *Journal of Speech, Language, and Hearing Research, 43,* 366–379.

Craig, H. K., & Washington, J. A. (2004). Grade-related changes in the production of African American English. *Journal of Speech, Language, and Hearing Research, 47,* 450–463.

Craig, H. K., & Washington, J. A. (2006). *Malik goes to school: Examining the language skills of African American students from preschool–5th grade*. Mahwah, NJ: Erlbaum.

Craig, H. K., Washington, J. A., & Thompson, C. A. (2005). Oral language expectations for African American children in grades 1 through 5. *American Journal of Speech–Language Pathology, 14,* 119–130.

Craig, H. K., Washington, J. A., & Thompson-Porter, C. (1998). Average c-unit lengths in the discourse of African American children from low income, urban homes. *Journal of Speech, Language, and Hearing Research, 41,* 433–444.

Darity, W., Jr., & Nicholson, M. J. (2005). Racial wealth inequality and the black family. In V. C. McLoyd, N. E. Hill, & K. A. Dodge (Eds.), *African American family life: Ecological and cultural diversity* (pp. 78–85). New York: Guilford Press.

Duncan, G. J., & Magnuson, K. A. (2003). Off with Hollingshead: Socioeconomic resources, parenting and child development. In M. H. Bornstein & R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development* (pp. 83–106). Mahwah, NJ: Erlbaum.

Dunn, L., & Dunn, L. (1997). *Peabody Picture Vocabulary Test–III*. Circle Pines, MN: AGS.

Federal Interagency Forum on Child and Family Statistics. (2007). *America's Children: Key national indicators of well-being, 2007*. Washington, DC: U.S. Government Printing Office.

Fishman, J. A. (1991). *Reversing language shift: Theoretical and empirical foundations of assistance to threatened languages*. New York: Multilingual Matters.

Gemake, J. S. (1981). Interference of certain dialect elements with reading comprehension for third graders. *Reading Improvement, 18,* 183–189.

Goodman, K. S., & Buck, C. (1973). Dialect barriers to reading comprehension revisited. *The Reading Teacher, 27,* 6–12.

Green, L. J. (2002). *African American English: A linguistic introduction*. Cambridge, England: Cambridge University Press.

Hammer, C. S. (1999). Guiding language development: How African American mothers and their infants structure play. *Journal of Speech, Language, and Hearing Research, 42,* 1219–1233.

Harber, J. R. (1977). Influence of presentation dialect and orthographic form on reading performance of Black, inner-city children. *Educational Research Quarterly, 2*(2), 9–16.

Hart, J. T., Guthrie, J. T., & Winfield, L. (1980). Black English phonology and learning to read. *Journal of Educational Psychology, 72,* 636–646.

Hinton, L. N., & Pollock, K. E. (2000). Regional variations in the phonological characteristics of African American vernacular English. *World Englishes, 19,* 39–58.

Hoffman, K., & Llagas, C. (2003). *Status and trends in the education of Blacks* (NCES 2003-034). Washington, DC: National Center for Education Statistics.

Hollingshead, A. B. (1975). *Four Factor Index of Social Status*. New Haven, CT: Yale University, Department of Sociology.

Hoover, H. D., Dunbar, S. B., & Frisbie, D. A. (2001). *Iowa Tests of Basic Skills*. Chicago: Riverside Publishing.

Jencks, C., & Phillips, M. (Eds.). (1998). *The Black–White test score gap*. Washington, DC: Brookings Institution Press.

Kaufman, A., & Kaufman, N. (1983). *Kaufman Assessment Battery for Children*. Circle Pines, MN: AGS.

Kline, R. B. (2005). *Principles and practice of structural equation modeling*. New York: Guilford Press.

Kohler, C. T., Bahr, R. H., Silliman, E. R., Bryant, J. B., Apel, K., & Wilkinson, L. C. (2007). African American English dialect and performance on nonword spelling and phonemic awareness tasks. *American Journal of Speech-Language Pathology, 16,* 157–168.

Liberatos, P., Link, B. G., & Kelsey, J. L. (1988). The measurement of social class in epidemiology. *Epidemiologic Reviews, 10,* 87–121.

Loban, W. (1976). *Language development: Kindergarten through grade twelve*. Urbana, IL: National Council of Teachers.

MacWhinney, B. (1994). *The CHILDES Project: Tools for analyzing talk* (2nd ed.). Pittsburgh, PA: Carnegie Mellon University.

McBride-Chang, C. (2004). *Children's literacy development*. London: Arnold.

McLoyd, V. C. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioemotional development. *Child Development, 61,* 311–346.

Melmed, P. J. (1973). Black English phonology: The question of reading interference. In J. L. Laffey & R. W. Shuy (Eds.), *Language differences: Do they interfere?* (pp. 70–85). Newark, DE: International Reading Association.

Michigan Educational Assessment Program. (1999–2001). *State Summary Essential Skills Reading Grade 4*. Lansing, MI: Author.

Miller, J. (1982). *Assessing language production in children*. Baltimore: University Park Press.

Nettles, M. T., & Perna, L. W. (1997). *The African American education data book: Volume II, Preschool through high school*. Ann Arbor, MI: Frederick D. Patterson Research Institute of College Fund/UNCF.

Neuman, S. B. (2006). The knowledge gap: Implications for early education. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy* (Vol. 4, pp. 29–40). New York: Guilford Press.

No Child Left Behind Act of 2001, 20 U.S.C. § 6301 et seq. (2002).

Northwest Regional Educational Laboratory. (2001). *Beginning Writer's Continuum*. Portland, OR: Author.

Oetting, J. B. (2003, June). *The measure of measurement: Measuring nonmainstream dialect use*. Paper presented at the annual meeting of the Symposium on Research in Child Language Disorders, Madison, Wisconsin.

Oetting, J. B., & McDonald, J. L. (2001). Nonmainstream dialect use and specific language impairment. *Journal of Speech, Language, and Hearing Research, 44,* 207–223.

Oetting, J. B., & McDonald, J. L. (2002). Methods for characterizing participants' nonmainstream dialect use within studies of child language. *Journal of Speech, Language, and Hearing Research, 45,* 505–518.

Oetting, J. B., & Pruitt, S. (2005). Southern African American English use across groups. *Clinical Linguistics & Phonetics, 3,* 136–144.

Ratusnik, D. L., & Koenigsknecht, R. A. (1975). Influence of certain clinical variables on Black preschoolers' nonstandard phonological and grammatical performance. *Journal of Communication Disorders, 8,* 281–297.

Rickford, J. R. (1999). *African American vernacular English: Features, evolution, educational implications*. Malden, MA: Blackwell.

Rooney, P., Hussar, W., Planty, M., Choy, S., Hampden-Thompson, G., Provasnik, S., et al. (Eds.). (2006). *The condition of education 2006* (NCES 2006-071). Washington, DC: National Center for Education Statistics.

Rystrom, R. (1973–1974). Perceptions of vowel letter–sound relationships by first-grade children. *Reading Research Quarterly, 2,* 170–185.

Scarborough, H. S., & Dobrich, W. (1994). On the efficacy of reading to preschoolers. *Developmental Review, 14,* 245–302.

Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97–110). New York: Guilford.

Seymour, H. N., & Ralabate, P. K. (1985). The acquisition of a phonologic feature of Black English. *Journal of Communication Disorders, 18,* 139–148.

Simons, H. D., & Johnson, K. R. (1974). Black English syntax and reading interference. *Research in the Teaching of English, 8,* 339–358.

Snow, C., Burns, S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.

Steffensen, M. S., Reynolds, R. E., McClure, E., & Guthrie, L. F. (1982). Black English vernacular and reading comprehension: A cloze study of third, sixth, and ninth graders. *Journal of Reading Behavior, 14,* 285–298.

Stockman, I. J. (1996). Phonological development and disorders in African American children. In A. G. Kamhi, K. E. Pollock, & J. L. Harris (Eds.), *Communication development and disorders in African American children* (pp. 117–153). Baltimore: Brookes.

Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology, 38,* 934–947.

Sweetland, J. (2006, November). *A sociolinguistic approach to teaching Standard English*. Paper presented at NWAV 35, The Ohio State University, Columbus, OH.

Templin, M. C. (1957). *Certain language skills in children: Their development and interrelationships*. Westport, CT: Greenwood.

TerraNova CTBS. (1997). Monterey, CA: CTB/McGraw-Hill.

Terry, N. P. (2006). Relations between dialect variation, grammar, and early spelling skills. *Reading and Writing, 19,* 907–931.

Thompson, C. A. (2003). The oral vocabulary abilities of skilled and unskilled African American readers. *Dissertation Abstracts International, 64*(09), 3200. (UMI No. 3106173)

Thompson, C. A., Craig, H. K., & Washington, J. A. (2004). Variable production of African American English across oracy and literacy contexts. *Language, Speech, and Hearing Services in Schools, 35,* 269–282.

U. S. Department of Education. (1992–2007). *The nation's report card: Reading.* [Various reading assessments from 1992 to 2007]. Washington, DC: National Center for Education Statistics.

Vernon-Feagans, L. (1996). *Children's talk in communities and classrooms*. Cambridge, MA: Blackwell.

Vernon-Feagans, L., Hammer, C. S., Miccio, A., & Manlove, E. (2001). Early language and literacy skills in low-income African American and Hispanic children. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 192–210). New York: Guilford.

Washington, J. A., & Craig, H. K. (1992). Performances of low-income, African American preschool and kindergarten children on the Peabody Picture Vocabulary Test–Revised. *Language, Speech, and Hearing Services in Schools, 23,* 329–333.

Washington, J. A., & Craig, H. K. (1994). Dialectal forms during discourse of urban, African American preschoolers living in poverty. *Journal of Speech and Hearing Research, 37,* 816–823.

Washington, J. A., & Craig, H. K. (1999). Performances of at-risk, African American preschoolers on the Peabody Picture Vocabulary Test–III. *Language, Speech, and Hearing Services in Schools, 30,* 75–82.

Washington, J. A., & Craig, H. K. (2002). Morphosyntactic forms of African American English used by young children and their caregivers. *Applied Psycholinguistics, 23,* 209–231.

Wheeler, R. S., & Swords, R. (2006). *Code-switching: Teaching Standard English in urban classrooms*. Urbana, IL: National Council of Teachers of English.

Whitehurst, G. J., & Lonigan, C. L. (2001). Emergent literacy: Development from prereaders to readers. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 11–29). New York: Guilford.

Wiederholt, J. L., & Bryant, B. R. (1992). *Gray Oral Reading Tests, Third Edition*. Austin, TX: Pro-Ed.

Woodcock, R. W. (1987). *Woodcock Reading Mastery Tests—Revised*. Circle Pines, MN: AGS.

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