A pre-kindergarten curriculum supplement for enhancing Mainstream American English knowledge in non-mainstream American English speakers

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A pre-kindergarten curriculum supplement
Abstract

Purpose: The purpose of this study was to evaluate the efficacy of a curriculum supplement designed to enhance awareness of Mainstream American English (MAE) in African American English- (AAE) speaking pre-kindergarten children.

Method: Children in two Head Start classrooms participated in the study. The experimental classroom (n = 13) received the Talking and Learning for Kindergarten (TALK) program, a developmentally appropriate emergent literacy curriculum, which used contrastive analysis to highlight morphological, phonological, and pragmatic differences between MAE and AAE. The control classroom received the Kindness Curriculum (n = 8), which was designed to promote mindfulness and emotional self-regulation. The amount of instruction was the same across the two programs (28 hours across seven weeks). Children in both classrooms participated in pre- and post-test assessments to evaluate the two programs.

Results: Children in the experimental classroom, but not the control classroom, showed significant improvement in three norm-referenced measures of phonological awareness and in an experimental measure that evaluated comprehension of words that are ambiguous in AAE, but unambiguous in MAE, because of morphological and phonological differences between the two dialects.

Conclusion: While much more research needs to be done on the efficacy of the TALK program, these results suggest that it is possible to enhance AAE-speaking children’s awareness of MAE prior to kindergarten entry.

Keywords: dialect mismatch, phonological awareness, African American English, Non-mainstream dialect
A pre-kindergarten curriculum supplement for enhancing Mainstream American English knowledge in non-mainstream American English speakers

Few would argue with the claim that the single most important problem in public education in the United States today is the “achievement gap”: the well-documented observation that children from low-socioeconomic status (SES) families perform less well academically than children from middle-SES families. A variety of strategies and programs have been proposed to close the achievement gap, including investing more in early childhood education, working with parents of young children to speak more to their children, smaller class sizes, and longer school days, among others. While all of these strategies have been successful, the achievement gap has barely changed, at least in part because these programs must be maintained over a long time period and are very expensive to implement. Therefore, we also need to find less costly smaller-scale short-term programs that may also be effective in decreasing the achievement gap. At least one specific challenge faced by children from low-SES families may be amenable to this approach. This is dialect mismatch: the fact that children from low-SES families almost always speak a non-mainstream dialect of English, while the language of instruction is Mainstream American English (MAE). For example, African American children from low-SES families generally speak African American English (AAE). Phonological, morphosyntactic, and pragmatic differences between MAE and AAE may hinder academic progress, interfering with young AAE speakers’ ability to fully benefit from school experiences.

Recent research on dialect mismatch has focused primarily on children in early elementary school. In a series of studies that followed children from kindergarten to first grade and from first grade to second grade, Terry and colleagues (Terry & Connor, 2012; Terry et al., 2012) found that non-mainstream dialect use (as indexed by scores on the Diagnostic Evaluation of Language Variation [DELV]; Seymour, Roeper, & de Villiers, 2005), was predictive of poor reading performance; the higher the DELV score in kindergarten or first grade, the lower the reading score in first or second grade. Edwards, Gross, Chen, MacDonald, Kaplan, Brown, & Seidenberg (2014) measured dialect density (number of dialect features relative to the total number of words in a 50-utterance language sample, cf. Oetting & MacDonald, 2002) in young AAE-speaking children and found that dialect density was negatively correlated with comprehension of MAE in a lexical task that focused on words that were ambiguous in AAE but not MAE (e.g., cold or
Furthermore, this relationship between dialect density and MAE comprehension was independent of vocabulary size.

Several theories have been proposed to explain why dialect mismatch might result in poor academic performance (e.g., Washington, Terry, & Seidenberg, 2013). One theory is that teachers may have negative impressions of students who speak non-mainstream dialects (e.g., Labov, 1995) and it is well known that teacher expectations impact academic outcomes (e.g., Cooper, 1979). A second hypothesis is that high dialect density in school-age children is simply a symptom of a more general problem with linguistic flexibility and metalinguistic awareness. The results of Craig, Kolenic, and Hensel (2014) who directly measured dialect shifting in AAE-speaking children whom they followed from first to third grade support this claim. They found that children who had showed less evidence of dialect shifting had poorer metalinguistic awareness. Finally, there is considerable evidence that it is more difficult for adult listeners to process an unfamiliar dialect, particularly in noise (Clopper & Bradlow, 2008; Clopper, 2012). Both Harris and Schroeder (2013) and Edwards et al. (2014) proposed that such findings suggest that dialect mismatch will put non-Mainstream American English (NMAE) speakers at a disadvantage: in the noisy classroom environment, they need to expend additional cognitive resources simply to understand their teacher.

Clearly the explanations of the relationship between dialect mismatch and academic performance are not mutually exclusive. And the fact remains that most children who speak a non-mainstream dialect of English face the challenge that the language of instruction is Mainstream American English when they enter school. While several programs have been successful at teaching MAE to NMAE-speaking children, they have not been not designed for preschool children. The dialect-shifting programs of Wheeler and Sword (2010) and Fogel and Ehri (2000) are aimed at children from third to sixth grade; these programs use contrastive analysis of morphosyntactic differences between MAE and AAE and focus primarily on written language. Toggle Talk (Craig, 2013) is designed for younger children (kindergartners and first graders); it also focuses on explicitly contrasting MAE (formal language or school talk) and AAE (informal language or home talk) and on morphosyntactic differences only. The purpose of this study was to evaluate whether a somewhat less direct approach that focused on phonological and pragmatic differences in addition to morphosyntactic differences between the two dialects...
A pre-kindergarten curriculum supplement (also using contrastive analysis) could enhance understanding of MAE in NMAE-speaking children prior to kindergarten entry.

**Methods**

**Participants**

There were 13 children in the experimental classroom (7 boys, 6 girls, mean age = 5;5 years;months). There were 8 children in the control classroom (2 boys, 6 girls, mean age = 5;4). All children in the experimental classroom were African American and spoke AAE, based on teacher report. All children in the two classrooms were enrolled at local Head Start centers for a summer kindergarten readiness program. The experimental and control classrooms were implemented at two separate Head Start centers.

**Procedure**

**Design.** The experimental classroom participated in TALK (Talking And Learning For Kindergarten), a developmentally appropriate emergent literacy curriculum that emphasized differences between MAE and AAE, as described in more detail below. The control classroom participated in a mindfulness curriculum, the Kindness Curriculum (Flook, Goldberg, Pinger, & Davidson, 2014). The Kindness Curriculum is designed to teach mindfulness to preschoolers and is focused on emotional self-regulation and compassion for others. The two curricula were delivered the same number of hours per week (one hour per day, four days a week, for seven weeks.

**Assessments.** Children in the two programs received the same pre-test and post-test assessments. Assessments for the TALK program included the following: standardized measures of expressive vocabulary and syntax (Expressive Vocabulary Test, 2nd edition, EVT-2, Williams, 2007 the Elaborated Phrases and Sentences subtest (EPS) from the Test of Auditory Comprehension of Language, 3rd edition, TACL, Carrow-Woolfolk, 1999) as well as three subtests to assess phonological awareness (blending subtest of the Comprehensive Test of Phonological Processing, CTOPP, Wagner, Torgeson, & Rashotte, 1999, rhyming and incomplete words subtests of the Test of Phonological Awareness Skills, TOPAS, Newcomer &
A pre-kindergarten curriculum supplement (Barenbaum, 2003). The final assessment for the TALK program was an experimental measure of lexical comprehension of MAE (Edwards et al., 2014). This three-alternative forced choice task presented pictures of three words (target, foil, distractor as in coal, cold, bus or cat, cats, block) in which the target and foil are consistently pronounced differently in MAE, but not in AAE. Half of the items focused on a phonological contrast between MAE and AAE. This was final consonant cluster deletion (e.g., coal for cold), which is much more common in AAE than MAE (Craig, Thompson, Washington, & Potter, 2003; Guy, 1980). The other half of the items focused on a morphological contrast between MAE and AAE. This was plural marking (e.g. cat for cats), which is optional in AAE if another number word is present (fifty cent) (Washington & Craig, 2002). In each trial, one word was produced in MAE and the child was asked to point to the correct picture on a touch screen. The condition of interest was the singleton consonant condition for both the phonological and morphological contrasts because these words (e.g., coal, goal, cat, block) are ambiguous in AAE but not in MAE. Because all words were not equally familiar or pictureable, the experimental trials were preceded by familiarization trials in which each picture was named in AAE and the child was asked to repeat each picture-name. The children in both classrooms also participated in assessments for the Kindness Curriculum, which were designed to measure aspects of emotional self-regulation. In both classrooms, at the end of the programs, we also asked parents to fill out informal questionnaires to gauge their reactions to the two programs.

Mean pre-test scores for both groups are shown in Table 1. At pre-test, the two groups were not significantly different on all measures, except for one, the Incomplete Words subtest on the CTOPP. This subtest asks children to fill in missing sounds in familiar words (e.g., children hear “po_ato” and need to add medial “t” to form potato). Because the statistical analysis of the
A pre-kindergarten curriculum supplement

efficacy of the TALK program was to compare each child to him/herself, this pre-test difference should not influence these results.

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**TALK Curriculum.** TALK is a curriculum supplement building on the early literacy emphasis already part of prekindergarten programs. TALK was designed using developmentally appropriate, evidence-based, and recommended practices for teaching language and literacy skills to young children (Adams, Foorman, Lundberg, & Beeler, 1998; Blachman, Ball, Black, & Tangel, 2000; Bunce, 2008; Lybolt, Armstrong, Techmanski, & Gottfred, 2007; Shanahan & Lonigan, 2013). The unique aspect of TALK was that it also included direct, explicit, covert, and systematic practice on the contrasts between MAE and NMAE in the context of an emergent literacy curriculum.

TALK was held for seven weeks, four days per week for 60-minute sessions. Two graduate student speech-language clinicians led the lessons, under the supervision of the second author. Each day was structured with a 10-minute opening circle, a 20-minute Talk Time, a 20-minute Rhyme Time, and a 10-minute closing circle. The clinicians co-taught an opening circle time with all of the children. The children were then split into two groups for either Talk Time or Rhyme Time. The children switched groups for the other lesson before coming back together for the closing circle. Each clinician taught either Talk Time or Rhyme Time for two weeks and then alternated for the following two weeks. This pattern was repeated throughout the seven-week program.
Each week centered on a theme with selected TALK targets (see Table 2) as the focus of the weekly activities. TALK incorporated shared-book reading, dramatic play, music and movement, crafts and book-extension activities. The TALK targets were embedded into each part of the daily lessons. Talk Time explicitly emphasized the morphosyntactic and phonologic contrasts between MAE and AAE. Children recited and acted out scripts, poems, and short stories, which included MAE features such as plural /s/, the copula, and word-final consonant clusters. Explicit emphasis during Rhyme Time was on phonologic contrasts within the framework of phonemic awareness and learning about the alphabetic principle. Children practiced rhyming, segmenting, and blending in addition to letter-sound correspondence. Rhyme Time also incorporated contrasts between MAE and AAE. For example, children practiced rhyming with words that ended in either /ʊl/ (coal, hole, bowl, goal) or /ʊld/ (cold, hold, bold, gold) because, as noted above, final consonant cluster deletion is much less common in MAE as compared to AAE.

Pragmatic and metalinguistic TALK targets were embedded into all activities but were explicitly taught during opening and closing circles. Code-shifting activities highlighted how we all talk differently based on different conversational and social contexts (e.g., friends vs. teachers, home vs. school). Appreciation for these differences was expressed, for example, in greetings in the opening circle time as we took turns saying “Hello” in different languages or as different characters e.g., pirate or troll talk. Pragmatic features of MAE such as interpreting indirect questions (e.g., *Can you read your teacher’s mind?*) were taught.

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**Results**

**Pre-test vs. Post-test Comparisons**

Paired comparison t-tests were used to compare pre- vs. post-test results for all of the TALK
assessments. Children who received the TALK curriculum had significantly higher post-test scores on all three measures of phonological awareness ($t_{[9]} = 2.293, p = .048$ for the CTOPP blending subtest, $t_{[12]} = 6.009, p < .001$ for the TOPAS rhyming subtest, and $t_{[12]} = 3.696, p = .003$ for the TOPAS incomplete words subtest), as illustrated in Figure 1. The children in the TALK classroom also had higher post-test scores for the experimental measure of comprehension of words produced in MAE that are ambiguous in AAE but not in MAE, as shown in Figure 2. These pre- versus post-test differences were significant for all singleton consonant words, combined across the morphological and phonological contrast ($t_{[12]} = 4.629, p = .001$) and for the singleton consonant words in the morphological contrast ($t_{[12]} = 4.796, p < .001$). The difference between pre- and post-test scores approached significance for the singleton consonant words in the phonological contrast ($t_{[12]} = 41.949, p = .075$) for children in the TALK classroom. The children who received the Kindness Curriculum did not improve significantly on any of these measures. Because the sample was smaller for the Kindness Curriculum ($n = 8$), these comparisons were redone with the Wilcoxon Signed Ranks Test; all comparisons were also non-significant with this non-parametric test. There were no significant differences on either the EVT-2 or the TACL-EPS between pre- and post-test for either group.

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**Parent Questionnaire**

The parent questionnaire included specific questions about children’s phonological awareness skills as well as a section for more general comments on the program. Parents of all 13 participants in the TALK program returned the questionnaires. 13 of 13 parents indicated that their children were able to “rhyme words or point out rhymes,” “say the letters of the alphabet,” and “say sounds that letters make,” and 10 of 13 parents indicated that their children could “break apart words into sounds.” The general parent reaction was uniformly positive. Parent responses to the question “What is one thing you liked about the program?” included the following: “The fact that I could see that my child was learning. He always came home and talked about what went on in the classroom that day;” “I liked how you used rhyming words to

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1 The degrees of freedom is 9 rather than 12 for the blending subtest of the CTOPP because three children did not pass the baseline at pre-test.
help prepare the children for kindergarten. My favorite activity was sound out the words using the fly swatters;” and “I think all schools should do programs like this. It really help the kids learn.”

**Discussion**

This paper reports on a small-scale study to implement TALK, a curriculum supplement designed to enhance NMAE children’s knowledge of MAE prior to kindergarten entry. After a short summer program that included 28 hours of instruction, children in the experimental classroom, but not the control classroom, showed significant improvement in their understanding of words that are ambiguous in AAE but unambiguous in MAE, either because of a phonological feature of AAE (final consonant cluster deletion) or a morphological feature of AAE (plural deletion). Children in the experimental classroom, but not the control classroom, also showed significant improvement on three measures of phonological awareness, rhyming, blending, and word completion.

The Hawthorne effect can be mostly ruled out as an explanation of these findings because children in the control classroom received the same amount of instruction, although in a different area altogether. While the improvement in phonological awareness might have occurred in an emergent literacy curriculum that did not focus on differences between MAE and AAE, it seems unlikely that the improvement in MAE comprehension would also have been observed. While it is possible that the lack of a significant pre-test vs. post-test difference in the control classroom was due to the smaller number of participants in this classroom, a visual inspection of most of the pre- and post-test means for the control classroom (see Figs. 1 and 2) suggests that this explanation is unlikely, given the small changes in pre- and post-test scores (except for the Incomplete Words subtest of the TOPAS, for which there was a pre-test difference between groups).

It should be emphasized that this is an extremely small-scale study, involving only 13 children in the experimental classroom and only 8 children in the control classroom. Clearly, much more research needs to be done to determine the effectiveness of the TALK curriculum supplement. Several questions must be addressed. First, is it preferable to explicitly tell children that AAE (*home talk*) and MAE (*school talk*) are being contrasted? TALK did not do this with pre-kindergarten children, but the Toggle Talk program developed by Craig (2013) does do this with children who are only slightly older than the children in the current study (kindergarten and
A pre-kindergarten curriculum supplement

first grade students). Second, is it important to include phonological and pragmatic differences as well as morphosyntactic differences between MAE and AAE? Again, TALK differs from Toggle (Craig, 2013) in that the latter focuses only on morphosyntactic differences. Third, are the differences observed in this study sustained over the long term; that is, do children who participate in the TALK program perform differently at the end of kindergarten relative to children who do not? Fourth, who should implement this curriculum supplement? The TALK program was implemented by graduate students in speech-language pathology under the supervision of a speech-language pathologist, while Toggle Talk is designed to be implemented by classroom teachers. Should the TALK program be implemented in 4K classrooms by a school speech-language pathologist or by the classroom teacher? Finally, TALK was designed specifically as a curriculum supplement for AAE speakers. Would it also benefit children who speak a different non-mainstream dialect?

While future research is needed to address these questions, these results add to a growing body of research that suggest that it is feasible to teach even young children who speak a non-mainstream dialect of English about MAE prior to kindergarten entry. If a program such as TALK is effective and can be implemented more widely, then children from low-SES families who speak a non-mainstream dialect of English can enter kindergarten knowing something about MAE, which will permit them to allocate fewer cognitive resources to dialect mismatch at the onset of their academic career.
Acknowledgements

This work was supported by a Wisconsin Institutes for Discovery Seed grant, awarded to Mark S. Seidenberg; National Institute on Deafness and Other Communication Disorders grant R01 02932 and National Science Foundation grant BCS-0729140, awarded to Jan Edwards; by National Institute of Child Health and Human Development P30 HD03352 grant, awarded to the Waisman Center, and by a Friends of the Waisman Center grant. We are grateful to all of the children who participated in this study and to their families, and we thank teachers and staff of the Dane County Parent Council as well. We also thank Ruby Braxton, Alia Dayne, Megan Gross, Ali Holt, Doris Leeper, Brittany Manning, Maryellen MacDonald, Monique Mills, Elisabeth Piper, Mark Seidenberg, and Alissa Schneeberg for their contributions to many aspects of this research program.
References


Table 1

*Mean pre-test scores for participants in the experimental (TALK) and control (Kindness Curriculum) classrooms (standard deviations in parentheses).*

<table>
<thead>
<tr>
<th></th>
<th>EVT-2&lt;sup&gt;1&lt;/sup&gt;</th>
<th>TACL-EPS&lt;sup&gt;2&lt;/sup&gt;</th>
<th>CTOPP: Blending&lt;sup&gt;2&lt;/sup&gt;</th>
<th>TOPAS: Rhyming&lt;sup&gt;2&lt;/sup&gt;</th>
<th>TOPAS: Incomplete words&lt;sup&gt;2,3&lt;/sup&gt;</th>
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</thead>
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<tr>
<td>TALK classroom</td>
<td>98 (9)</td>
<td>11 (2)</td>
<td>10 (1)</td>
<td>9 (2)</td>
<td>10 (1)</td>
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<tr>
<td>Kindness classroom</td>
<td>91 (12)</td>
<td>9 (3)</td>
<td>11 (1)</td>
<td>9 (2)</td>
<td>7 (1)</td>
</tr>
</tbody>
</table>

<sup>1</sup>Standardized mean = 100, SD = 15;  <sup>2</sup>Standardized mean = 10, SD = 3,  <sup>3</sup>The two classrooms were significantly different at pre-test (*t*[18] = 3.32, *p* = .004).
Table 2

*TALK Targets*

<table>
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<tr>
<th>Language</th>
<th>Phonemic Awareness</th>
<th>Alphabetic Principle</th>
<th>Phonologic Contrast</th>
<th>Morphosyntactic Contrast</th>
<th>Pragmatic Metalinguistic</th>
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<tr>
<td>Semantic/vocabulary</td>
<td>Rhyme detection</td>
<td>Recognize first name</td>
<td>Word-final pre-vocalic consonant cluster reduction (best = /bɛs/)</td>
<td>Zero marking of plurals</td>
<td>Using a school voice</td>
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<tr>
<td>Compound/complex sentences</td>
<td>Rhyme creation</td>
<td>Recognize last name</td>
<td>Methathesis (ask = /æks/)</td>
<td>Zero possessives</td>
<td>Introductions</td>
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<td>Narrative Elements:</td>
<td>Rhyme production</td>
<td>Recites the alphabet in song</td>
<td>Deletion of final (/l/ or /r/) after the vowel (/ʊ) (door = /dʊ/)</td>
<td>Absent copula</td>
<td>Talking differently based on context</td>
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<tr>
<td>• Character</td>
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<td>• Resolution</td>
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<td>Sequencing Vocabulary</td>
<td>Rhyme oddity</td>
<td>Points to letters</td>
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<td>Absent auxiliary</td>
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<td>• First, second third</td>
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<td>• Beginning, middle, end</td>
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<td>Sounds → words</td>
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Figure Captions

Figure 1. Pre- and post-test mean test scores (bars indicate standard errors) for experimental (top plot) and control (bottom plot) classrooms for three subtests that measure phonological awareness (standardized mean = 10, SD = 3).

Figure 2. Pre- and post-test mean test scores (bars indicate standard errors) for experimental (top plot) and control (bottom plot) classrooms for experimental measure of comprehension of words that are ambiguous in AAE but not in MAE.
Figure 1.
Figure 2.