ABSTRACT: Purpose: The goal of this study was to examine speech-language pathology students’ knowledge of differences versus disorders associated with English language learners (ELLs) and speakers of dialects other than Standard English.

Method: A questionnaire containing 20 statements (12 experimental statements and 8 foils) was presented to 124 students in undergraduate and graduate courses in a college speech-language pathology department. Experimental statements consisted of (a) general statements about bilingualism and (b) technical linguistic statements involving bilingualism and dialect differences.

Results: Participants who had taken a course in bilingualism were better able to distinguish language differences from disorders and had better knowledge of linguistic and dialect differences than participants who had not taken a course in bilingualism.

Conclusion: Findings support the need to train future speech-language pathologists in the knowledge of language and dialect differences so they can better provide services to speakers of diverse languages and dialects.

KEY WORDS: differences, dialect, bilingual, knowledge
Although linguists have agreed that AAE is a rule-governed variation of American English rather than an ungrammatical variant (Labov, 1972; Wolfram, 1971), many SLPs may not be aware of this finding and may view AAE as a highly stigmatized (i.e., socially unacceptable) variety of American English. Frequently, AAE is viewed as a socially unacceptable form of Standard English (Washington & Mills, 2011). This bias has led to communication breakdowns for teachers who are unfamiliar with AAE (Craig & Washington, 2006), suggesting that knowledge of AAE is essential to prevent negative effects on children’s learning and interaction with the classroom teacher.

Given that differences from Standard English may lead to the view that speakers of AAE are less capable of learning (Levey, 2011), it is important to understand the linguistic features of AAE. SLPs who are aware of AAE dialect differences are able to explain dialect differences to classroom teachers to help them understand the positive and rule-governed aspects of language and dialect variation found in children’s communication. When teachers are familiar with the characteristics of AAE, children are able to achieve greater academic success (Delpit, 2006), and ELLs with poor literacy skills are often able to achieve grade-level skills when they are provided with appropriate intervention (Gorman, 2009; Lesaux & Siegel, 2003; Restrepo & Towle-Harmon, 2008). Consequently, to avoid misdiagnosis of a disorder in the presence of a difference, SLPs must be aware of both linguistic and dialect differences.

Despite the need for knowledge of language and dialect differences, many SLPs lack the knowledge needed to work with language-diverse children (Hammer, Detwiler, Detwiler, Blood, & Dean Qualls, 2004; Kohnert et al., 2003; Kritikos, 2003; Roseberry-McKibbin, Brice, & O’Hanlon, 2005), and an inadequate number of SLPs speak the primary language of the children they are treating (Weiss, 2002). Kritikos (2003) conducted a survey to determine SLPs’ beliefs about language assessment of bilingual/bicultural individuals. Respondents consisted of 596 SLPs from five states in the United States who fell into three groups: (a) those who had learned a second language other than English in an academic context (AS), (b) those who had learned a second language in a cultural context (CE), and (c) those who were monolingual English speakers (M). A greater number of participants in the M group (85%) reported the belief that they lacked efficacy in the assessment of speakers of a language they did not understand or speak. Fewer participants in the AS (75%) and CE groups (72%) reported the belief that they lacked efficacy, but none of these numbers reflected a significant number of individuals confident that they could provide assessment of speakers of a language they did not understand or speak.

Participants in the Kritikos (2003) survey also believed that there were few individuals in the field of speech-language pathology who could provide bilingual assessment. In addition, 40% of the participants reported that they would be more cautious in recommending language treatment for a bilingual child than for a monolingual child, most likely due to the absence of bilingual knowledge (Kritikos, 2003, p. 73). This survey suggests that many ELLs will not receive assessment, even if it is needed. Consequently, ELLs may not receive adequate supports for developing strong language skills.

Using a web-based survey, Kohnert et al. (2003) found that fewer than half of the 104 SLPs surveyed (47%) had professional training for working with culturally and linguistically diverse clients. Respondents reported that the greatest challenges when working with bilingual clients were assessment and intervention. They also reported other challenges, such as knowledge of developmental norms for the client’s first language and finding other professionals who spoke the client’s language. Participants in a survey by Roseberry-McKibbin et al. (2005) also reported that assessment procedures and materials for nonbiased assessment of ELLs were the main problem and the greatest interest for learning. Finally, a survey of 213 SLPs found that 87% had not received training in multicultural and multilingual issues as undergraduates or graduates (Hammer et al., 2004).

Although survey studies provide a good indication of SLPs’ awareness of their skills, it is also important to determine if individuals actually possess the knowledge needed to provide evidence-based bilingual assessment. Levey (2004) examined 167 undergraduate and graduate speech-language pathology students’ knowledge of linguistic and cultural differences. Students were presented with a questionnaire that contained 20 statements consisting of 11 foils that described monolingual English children’s typical behaviors (e.g., “Overextension is present in typical behavior”), 9 target statements that described bilingual children’s behaviors (e.g., “The production of aks for ask may be the sign of a speech disorder beyond 3 years of age”), and 9 target statements that described ELLs’ behaviors (e.g., “The production of aks for ask may be the sign of a speech disorder beyond 3 years of age”). Accuracy ranged from 44% to 66% across all target statements, with no significant difference between the scores of students who (a) had or had not taken a bilingual course, (b) studied or possessed a language other than English, or (c) lived in a country other than the United States.

It is important for SLPs to recognize that language and dialect variations should not be interpreted as deficits. In fact, some SLPs may be in danger of violating legal mandates that require providing all children with culturally and linguistically appropriate instruction (Roseberry-McKibbin, 1995). Federal mandates state that assessment must be conducted in a nondiscriminatory manner with materials provided in the child’s most proficient language and may include alternative modes of testing (Roseberry-McKibbin & O’Hanlon, 2005). In summary, SLPs should be aware of multilingual and multicultural differences in order to provide evidence-based assessment and intervention that supports children’s language and academic skills.

The Current Study

The current study continued the examination of undergraduate and graduate speech-language pathology students’ abilities to distinguish differences from disorders associated with ELLs and speakers of dialects that differ from Standard English. Without this knowledge, evidence-based assessment will not be achieved.
METHOD

Participants

Study participants consisted of 124 English-speaking students in a speech-language-hearing sciences department in a major urban college, including 52 graduate and 72 undergraduate students (112 females and 12 males). Participants ranged in age from 18 to 57 years (Mge = 27.4, Mdn = 25). Ninety-five participants (76.6%) had taken a bilingual course, and 29 (23.4%) had not. Participants included 80 bilingual speakers (64.5%) who spoke the following languages: Albanian, Arabic, Bengali, Cantonese, Farsi, French, German, Hebrew, Hindu, Italian, Korean, Malayalam, Punjabi, Russian, Spanish, Tagalog, Tamil, Urdu, and Yiddish. Seventy-eight participants (63%) had lived in another country. Of those who had lived in another country, 36 were bilingual (46%). One hundred eighteen of the participants were majoring in speech-language pathology and six were majoring in other fields of study but were minor ing in speech-language pathology (three in linguistics and the others in social work, audiology, and accounting).

Participants were recruited and randomly selected from undergraduate and graduate classes. No student had obtained clinical experience, as all were either undergraduates or first-semester graduate students who had not yet completed the prerequisites for enrollment in the clinical practicum. All speech-language pathology majors had completed their required observation hours.

Questionnaire

The questionnaire consisted of 12 experimental statements and eight foils. Foils were chosen from undergraduate speech-language pathology textbooks and were based on typical language development knowledge (e.g., the speech sound /s/ is placed at the end of a word to signal plurality, e.g., cats). The 12 experimental statements were further divided into (a) general statements about bilingualism and (b) more technical linguistic statements involving bilingual and dialect differences. General statements were less complex and reflected information that was likely to have been taught in a bilingual course or in another language course in a speech-language pathology program. Technical linguistic statements were complex and were chosen to reflect information that is essential in evidence-based assessment of ELLs and AAE speakers. The technical linguistic statements are provided in Appendix A. It was expected that participants who had taken a bilingual course would be aware of this specific linguistic information.

Procedure

Before beginning the study, we submitted the questionnaire to two experts in bilingualism and dialect differences. Following their review, we revised the statements and resubmitted them for review. The final experimental statements were approved. Next, we asked all faculty members in the department of speech-language-hearing sciences at a major college in New York City to administer the questionnaire in their classes. In addition, we distributed a poster describing the study to students and posted it on bulletin boards throughout the department. Five classes participated in the study, and the last 30 min of each class was devoted to administration of the questionnaire.

The questionnaire contained the experimental statements as well as demographic questions that examined students’ major, language background, experience, and enrollment in a bilingual course. The questionnaire was given to students who had agreed to participate; those who did not choose to participate left the room. We distributed the questionnaire, explaining that we were investigating students’ knowledge of differences associated with bilingual and dialect speakers versus disorders associated with bilingual and dialect speakers. Participants were told to answer to the best of their ability and not to refer to any books or other materials while completing the questionnaire. We remained in the room while the participants completed the questionnaire. There were 150 participants who agreed to participate in the study, but only 124 (83%) returned fully completed questionnaires. Some students wrote comments, but raised no verbal questions, in relation to the statement regarding MLU (i.e., Mean length of utterance (MLU) is the most important way to analyze any child’s typical language development). In these cases, some qualified the use of MLU for speakers of languages other than English.

Analysis

We conducted three analyses. The dependent variable in the first analysis was mean scores for the 124 participants on all 12 experimental statements. The dependent variable in the second analysis was the difference in mean scores between two categories of statements that required knowledge of (a) general bilingual/dialect information and (b) technical linguistic information. Independent variables consisted of study (i.e., had or had not taken a course in bilingualism), residence (i.e., had or had not lived in another country), education (i.e., undergraduate vs. graduate), and bilingualism (i.e., monolingual vs. bilingual). Multivariate analyses of variance (MANOVAs) were performed to examine the effects of the independent variables on the two score variables. An independent-samples t test was performed to examine the difference in mean scores between the two categories of statements (general vs. technical linguistic). Finally, the third analysis examined participants’ belief that they possessed adequate knowledge of bilingual and dialect differences.

RESULTS

Study was the only significant variable associated with the overall statement scores (M = .47, SD = .28 vs. M = .13, SD = .08), F(1, 120) = 3.82, p < .05 (Table 1). There were no other significant variables or interactions. These results indicate that residence in a country other than the United States, education level, or bilingualism did not contribute to participants’ bilingual knowledge. However, the scores
of the participants who had taken a bilingual course were significantly higher than the scores of the participants who had not taken a bilingual course for the combination of general bilingual and technical linguistic information (Appendix B).

In the second analysis, the difference in mean scores between the two categories of statements was examined (i.e., general bilingual information and technical linguistic information), as shown in Table 2. The mean scores were greater for general bilingual information ($M = .77$, $SD = .11$) than for technical linguistic information ($M = .37$, $SD = .24$). A two-way independent-samples $t$ test confirmed that the score difference between these two categories was significant, $t(124) = –5.84$, $p = .0001$. The mean scores for participants who had taken a bilingual course were also significantly greater for certain technical linguistic statements ($M = .37$, $SD = .25$) than for those who had not taken a bilingual course ($M = .09$, $SD = .06$), $F(1, 11) = 4.62$, $p < .03$ (Table 3).

An item analysis revealed that certain statements presented more difficulty for participants who had not taken a bilingual course than for those who had, as shown in the differences in mean scores in Table 2. For example, there were greater differences between mean scores for Statements 1 (.43), 2 (.53), 4 (.24), 6 (.54), and 9 (.42) than for the remaining statements. Bilingual differences were targeted in Statements 1, 6, and 9 (e.g., final consonant deletion beyond age 3; noun or pronoun in subject position for all languages; and pauses, repetitions, and/or revisions as signs of a fluency disorder). Dialect differences associated with AAE were targeted in Statement 2 (e.g., production of the word *aks* for *ask*); both bilingual and AAE dialect differences were targeted in Statement 4 (e.g., MLU is the most important way to analyze a child’s typical language development). Differences between other technical linguistic statements were not as great, ranging from a difference of .03 to .12 for Statements 3, 5, 7, and 8 (e.g., the use of double negatives, plural and possessive omission, ungrammaticality of *have two cats the boys*, and the word *train* produced as *ten*). Statements 3 and 5 involved AAE, and Statements 7 and 8 involved Spanish speakers.

It should be noted that the technical linguistic statements 3, 5, 7, and 8 received the lowest accuracy scores

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**Table 1. Multivariate analyses of variance (MANOVAs) for mean scores on all statements.**

<table>
<thead>
<tr>
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<th>df</th>
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<th>$p$</th>
</tr>
</thead>
<tbody>
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<td>Study</td>
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<td>3.82*</td>
<td>.034</td>
<td>.03</td>
</tr>
<tr>
<td>Residence</td>
<td>1</td>
<td>.34</td>
<td>.003</td>
<td>.56</td>
</tr>
<tr>
<td>Education</td>
<td>1</td>
<td>.28</td>
<td>.003</td>
<td>.65</td>
</tr>
<tr>
<td>Bilingualism</td>
<td>1</td>
<td>.16</td>
<td>.001</td>
<td>.70</td>
</tr>
</tbody>
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*$p < .05$.

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<th>Source</th>
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<tbody>
<tr>
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<td>3.82*</td>
<td>.034</td>
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<tr>
<td>Residence</td>
<td>1</td>
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<td>.56</td>
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<tr>
<td>Education</td>
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<tr>
<td>Bilingualism</td>
<td>1</td>
<td>.16</td>
<td>.001</td>
<td>.70</td>
</tr>
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</table>

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**Table 2. General bilingual and technical linguistic statements: Mean accuracy scores and differences between means.**

<table>
<thead>
<tr>
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<th>Statement</th>
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<th>No</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>General bilingual</td>
<td>1. Parents whose first language is not English should only speak English in the home if their child has a language disorder.</td>
<td>.88</td>
<td>.25</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td>2. If you learn another language after the age of 12 you will probably have a &quot;foreign&quot; accent in the second language.</td>
<td>.65</td>
<td>.21</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>3. There are more people who are bilingual/multilingual on this planet compared to monolingual.</td>
<td>.77</td>
<td>.20</td>
<td>.57</td>
</tr>
<tr>
<td>Mean</td>
<td>.77</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$SD$</td>
<td>.12</td>
<td>.03</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical linguistic</th>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Final consonant deletion beyond the age of 3 is the sign of a speech disorder.</td>
<td>.51</td>
<td>.08</td>
<td>.43</td>
<td></td>
</tr>
<tr>
<td>2. The production of the word <em>aks</em> for <em>ask</em> may be the sign of a speech disorder beyond 3 years of age.</td>
<td>.73</td>
<td>.20</td>
<td>.53</td>
<td></td>
</tr>
<tr>
<td>3. The sentence <em>Nobody don’t like me</em> reflects an error in the use of double negatives.</td>
<td>.16</td>
<td>.05</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>4. Mean length of utterance (MLU) is the most important way to analyze any child’s typical language development.</td>
<td>.36</td>
<td>.12</td>
<td>.24</td>
<td></td>
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<tr>
<td>5. The sentence <em>Two boy live in John house</em> reflects morphological errors (omission of plural –s after boy and the possessive’s after John).</td>
<td>.06</td>
<td>.03</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>6. The production of a noun or pronoun in sentences in subject position <em>(Mary</em> goes to school/<em>He</em> goes to school) occurs in all languages.</td>
<td>.70</td>
<td>.16</td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td>7. The sentence <em>Have two cats the boys</em> is ungrammatical.</td>
<td>.15</td>
<td>.06</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td>8. The word train produced as ten by a 5-year-old is a sign of a speech disorder.</td>
<td>.17</td>
<td>.05</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>9. The use of pauses, repetitions, and/or revisions while speaking is the sign of a fluency disorder.</td>
<td>.51</td>
<td>.09</td>
<td>.42</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>.37</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$SD$</td>
<td>.25</td>
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</table>
for participants who had taken a bilingual course (.16, .06, .15, and .17). Statements 3 and 5 were examples of ELLs’ productions. The average accuracy for these statements was 13.5% for participants who had completed a bilingual course; the average accuracy for all other statements for participants who had taken a bilingual course was 64%.

The mean scores for technical linguistic statements were significantly greater for participants who had resided in another country (M = 5.65, SD = 1.81) than for those who had not (M = 5.83, SD = 1.69), F(1, 11) = 5.78, p < .02. A Pearson product–moment correlation analysis revealed a significant but small correlation between bilingualism and residence in another country (.221, p = .014), indicating that the combination of these two factors may enhance a person’s understanding of linguistic differences.

Finally, the third analysis examined the difference in mean test scores between participants who believed that they possessed adequate knowledge of differences versus those who believed they did not. There was no significant difference in mean accuracy between participants who reported the belief that they possessed adequate bilingual knowledge (M = 5.89, SD = 1.63) and those who did not hold this belief (M = 5.36, SD = 2.07). This shows that people may not have an accurate perception of their own knowledge base. Finally, there were no other findings that were significant, and there were no significant interactions.

**DISCUSSION**

Participants who had taken a bilingual course had better understanding of differences and disorders than those who had not (as shown in Table 2). Those who had taken a bilingual course had an average score that was approximately six times higher for these statements than those who had not taken a bilingual course (.51 vs. .08 and .51 vs. .09). Participants who had lived in another country had significantly better scores for technical linguistic statements that addressed bilingual and dialect differences. Practical experience with other languages may have given them a greater sensitivity to these differences.

There were other statements that presented difficulty for all participants, whether or not they had taken a bilingual course: Statement 3 (“Nobody don’t like me” reflects an error in the use of double negatives), Statement 5 (“Two boy live in John house” reflects morphological errors, the omission of plural –s after boy and the possessive ‘s after John), Statement 7 (“Have two cats the boys” is ungrammatical), and Statement 8 (The word train produced as ten by a 5-year-old is a sign of a speech disorder). In this case, participants who had taken a bilingual course had average scores that were two or three times higher than those of participants who had not taken a course, but their scores were still relatively low (as shown in Table 2).

Finally, the mean scores of participants who believed that they possessed adequate bilingual knowledge did not differ from those of participants who believed they did not. This finding contradicts those found in the survey conducted by Kritikos (2003), showing that individuals’ self-perception does not necessarily match their knowledge levels.

Although a course in bilingualism is usually mandatory in most speech-language pathology university programs, only 77% of the participants in our study had, in fact, taken a bilingual course. Without this knowledge, individuals may not be able to distinguish a speech or language difference from a disorder. Given the findings in the current study, bilingual information should be mandatory for all speech-language pathology students, with information on linguistic differences so that students are better prepared to provide evidence-based assessment. A review of four introductory bilingual course books revealed no information on the linguistic productions of either AAE or Spanish-speaking children. Thus, it appears that students who have taken a bilingual course may still lack the essential information to understand differences versus disorders.

Roseberry-Mckibbin and O’Hanlon (2005) provided a tutorial guide to nonbiased assessment of ELLs. An investigation of school SLPs’ assessment of bilingual-speaking children revealed that they used formal, standardized measures rather than informal, alternative measures (Cesar & Kohler, 2007). Most formal and standardized tests are normed to reflect the majority of cultures and languages. Thus, legislation opposes their use (Individuals with Disabilities Education Act, 1997, 2004).

**Limitations and Future Study**

Future investigations should aim at a deeper exploration of participants’ experiences and education in order to provide a more robust study of their knowledge of bilingualism and dialects. For example, additional examples of AAE- and Spanish-speaking children’s productions should be included, with results provided to faculty who are teaching these bilingual courses. In addition, the number of examples could be increased to present more functional statements regarding methods of assessment and intervention when working with children with language and dialect differences.

**REFERENCES**


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APPENDIX A. TECHNICAL LINGUISTIC STATEMENTS

1. Final consonant deletion beyond the age of three is the sign of a speech disorder. Spanish does not have many final consonants. (Goldstein & Iglesias, 1996)

2. The production of the word asks for ask may be the sign of a speech disorder beyond 3 years of age. This feature may appear in some AAE speakers. (Goldstein, 2000)

3. The sentence Nobody don’t like me reflects an error in the use of double negatives. Double negatives are a feature of AAE. (Seymour & Roeper, 1999)

4. Mean length of utterance (MLU) is the most important way to analyze any child’s typical language development. It is not appropriate to use MLU in the analysis of dialects or languages whose morphemes differ from English. (Bernstein & Levey, 2009)

5. The sentence Two boy live in John house reflects morphological errors (omission of plural –s after boy and the possessive ’s after John). Redundant morphemes are omitted in AAE. (Goldstein, 2000)

6. The production of a noun or pronoun in sentences in subject position (Mary goes to school/He goes to school) occurs in all languages. A noun or pronoun in the subject position of a sentence is not required in Spanish.

7. The sentence Have two cats the boys is ungrammatical. Many Verb Subject Object (VSO) languages allow this word order, such as Spanish for questions.

8. The word train produced as ten by a 5 year old is a sign of a speech disorder. Cluster reduction is a characteristic found in the productions of young Spanish-speaking children. (Goldstein, 2000)

9. The use of pauses, repetitions, and/or revisions while speaking is the sign of a fluency disorder. These behaviors appear in second language learners but secondary behaviors are absent. (Watson & Kayser, 1994)