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ABOUT THE *JOURNAL*

The *Journal of the National Black Association for Speech-Language and Hearing (JNBASLH)* is a peer-reviewed, refereed journal that welcomes submissions concerning communication and communication disorders from practitioners, researchers or scholars that comprise diverse racial and ethnic backgrounds, as well as academic orientations.

JNBASLH editorial board welcomes submissions from professionals or scholars interested in communication breakdown and/or communication disorders in the context of the social, cultural and linguistic diversity within and among countries around the world.

JNBASLH is especially focused on those populations where diagnostic and intervention services are limited and/or are often provided services which are not culturally appropriate. It is expected that scholars in those areas could include, but not limited to, speech-language pathology, audiology, psychology, linguistics and sociology. Articles can cover any aspect of child or adult language communication and swallowing, including prevention, screening, assessment, intervention and environmental modifications. Special issues of *JNBASLH* concerning a specific topic may also be suggested by an author or through the initiation of the editors.

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Topics accepted for publication in *JNBASLH* could include, but is not limited to, the following:

- Communication breakdowns among persons due to culture, age, race, background, education, or social status
- Use of the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) framework to describe communication use and disorders among the world's populations.
- Communication disorders in underserved or marginalized populations around the world
- Service delivery frameworks for countries' minority populations, including those who are minorities for a variety of reasons including race, religion, or primary language spoken.
- Dialectical differences and their effects on communication among populations
- Evidence base practice research with culturally and linguistic diverse populations
- Provision of communication services in low income/resource countries
- Provision of communication services in middle income/resource countries
- Provision of communication services to immigrant and/or refuge populations
- Effects of poverty on communication development and the provision of services
- Education/training issues in serving diverse populations
- Ethical issues in serving diverse populations
- Role of religion in views of communication disability and its effect on service delivery

Submissions may include:

- Research papers using quantitative or qualitative methodology
- Description of clinical programs
- Theoretical discussion papers
- Scientifically conducted program evaluations demonstrating
- Clinical forums
- Works using disability frameworks or model's effectiveness of clinical protocols
- Critical clinical literature reviews
- Case studies
- Tutorials
- Letters to the editor

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A COMPILATION OF SPEECH SOUND FEATURES OF AFRICAN AMERICAN ENGLISH

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— ABSTRACT —

African American English (AAE) is an American dialect spoken by many African Americans and people of other racial/ethnic groups. In the current study, AAE-related literature was reviewed, and AAE speech sound patterns were compiled, including examples and regional information regarding the dialect. A convenient chart was created upon the review and compilation of AAE speech sound patterns from previous scholarly works. Further, a thorough literature search was completed on Google Scholar and EBSCO databases and recent articles and seminal works were prioritized. Then, a current and more comprehensive chart of AAE speech sound patterns was developed and organized by phoneme for SLPs to use clinically when accessing AAE speakers. Also, AAE speech sound patterns were described using non-deficit terminology as outlined by Hamilton et al. (2018). Several previous scholarly works outlined AAE speech sound patterns; however, there was a need for a current compilation of data across the literature and the need for the inclusion of positive terminology in reporting AAE speech sound features. While this manuscript might not provide a fully comprehensive list of AAE speech sound features, it provides a more comprehensive, clinically feasible chart for SLPs to efficiently use when assessing AAE speakers suspected of having a speech sound disorder.

Keywords: African American English, AAE, speech sound disorder, regionality, assessment, cultural competence

Background

African American English (AAE) is the most current terminology used to refer to what was formally termed Ebonics, Black English, African American Vernacular English, and Negro dialect, to name a few. The study of Black English developed during the Black Power Movement, which sought to combat a White supremacy society (Taylor, 1972). Speech sound features are one common area of focus of AAE research. Various researchers provided AAE speech sound feature data and emphasized its legitimacy as a systematic dialect or language (Pollock, 1998; Stockman, 1996; Thomas, 2007).

Speech Sound Features of African American English

AAE is an American dialect that many African Americans speak or have developed familiarity with due to cultural influences (Taylor, 1972). However, not all African Americans speak AAE. Also, AAE is not exclusive to African Americans because various ethnic and racial groups speak this systematic dialect (Bland-Stewart, 2005; Fasold et al., 1987; Latimer-Hearn, 2020; Rickford & Rickford, 2000; Taylor, 1972). Like Mainstream American English (MAE) or "Standard" American English (SAE), AAE has distinct patterns across five language areas: phonology, morphology, syntax, semantics, and pragmatics (Bland-Stewart, 2005; Hamilton et al., 2018; Rickford & Rickford, 2000). AAE rules differ from MAE rules in each language area (Stockman, 1996; Thomas, 2007); however, this manuscript focused on phonology (i.e., vowels, consonants, blends, and phonological processes). An example of a phonological difference of AAE is that AAE speakers might not release or produce sounds in the final position of words (Pollock et al., 1998; Stockman, 1996; Thomas, 2007). Tables 1-14 in the appendix include a more comprehensive compilation of AAE speech sound patterns. Charts in Pollock et al.'s (1998) and Stockman's (1996) studies influenced the format of the tables.

Eliminating Deficit Terminology When Describing AAE Speech

Regrettably, AAE is stigmatized because African Americans are stigmatized (Taylor, 1972). An inferior tone has been associated with AAE since the slavery era and persists in America (Champion et al., 2012; Gibson & Terrell Shockley, 2018; Hamilton, 2020; Horton et al., 2018; Jackson, 1997; Ladson Billings, 2000; Latimer-Hearn, 2020; Lee, 2005; Meyers et al., 1979; Payne, 2005; Pullum, 1999; Taylor, 1972; Todd, 1997). Scholars often discuss AAE using terms containing a negative connotation by using words such as deletion, omission, and reduction to describe its pat-terns (Hamilton, 2020; Hamilton et al., 2018). They have described AAE regarding how its patterns compare to MAE rather than describing it as a stand-alone dialect (Bland-Stewart, 2005; Hamilton, 2020; Hamilton et al., 2018). Even professionals who advocate for AAE habitually describe AAE using derogatory terms in teaching and research by describing what it "lacks." It is difficult to fully conceptualize AAE as a systematic and valid language when professionals discuss it in the same manner that they discuss impairments. Terms such as omission and deletion describe a disorder and could misrepresent AAE as a deficit that warrants intervention (Hamilton, 2020; Hamilton et al., 2018).

Hamilton et al. (2018) gave examples of how one might describe an apple as red, shiny, and crunchy but would not describe an orange as lacking a red tint, shine, and crunchiness. Similarly, AAE should not be discussed in comparison to MAE (e.g., deleting /d/ in the final position or substituting /f/ for /θ/ in the medial and final position). Hamilton et al. (2018) provided examples of appropriate ways to describe AAE. For example, instead of using terms such as "deletion" or "reduction," one could say, "MAE speakers produce /-ing/ whereas AAE speakers might produce /-in/." Since researchers have used deficit terminology throughout their work and discussions for several decades, it will take time for researchers and professionals (e.g., clinicians and professors) to shift toward AAE-individualized descriptions. Nevertheless, SLP professionals can collaboratively work toward reducing the negative manner in which AAE is discussed.

AAE Regionality

AAE is a regional dialect meaning its patterns may vary between geographical areas (Pollock et al., 1998; Thomas, 2007Wolfram & Kohn, 2015). For example, there may be differences in AAE patterns in the southeast quadrant of the District of Columbia (DC) compared to AAE patterns in New Orleans, Louisiana. One example of regional variation is vowel duration among southern AAE speakers. In the southern region, AAE vowels may be produced significantly longer (Holt et al., 2015). Also, diphthongs in southern AAE may include the production of one vowel instead of the gliding of two vowels (Dorrill, 1983, Labov, 1991; Labov, 1994; Kamhi, 1996; Thomas, 2007).

Another example is how AAE speakers in DC may produce /v/ for /θ/ in the medial position of words, whereas AAE speakers in Louisiana might produce /d/ for /θ/ in the medial position of words. Further, there may be differences in AAE in rural areas compared to AAE in urban areas. Dialectal differences may also occur within the same state (Wolfram &

Kohn, 2015). Regionality is a pivotal factor to consider when assessing speech sounds. There may be dialectal articulatory features that one should consider in a particular geographical area that may not have to be heavily considered in another area. Regionality information was included when creating Tables 1-14 (see Appendix).

In the current study, the researchers compiled AAE speech sound information across previous works while using positive terminology and reducing negative terminology such as deletion, omission, and reduction. Another aim was to conveniently outline the content for SLP clinicians to use in practice. Thomas (2007) provided a summary of many AAE speech sound features. However, the information was in paragraph form, which may take a substantial amount of time to review and interpret. The current study incorporated a more convenient format of AAE speech sound features, as seen in charts from Stockman (1996) and Pollock et al. (1998).

Method

An extensive literature search was conducted on Google Scholar and EBSCO databases to obtain data regarding AAE speech sound features. These databases were utilized to ensure the inclusion of scholarly, peer-reviewed works. To locate relevant articles, the researchers used keywords such as African American English, AAVE, African American English Vernacular, Black English, Ebonics, speech sounds, phonology, phonetics, speech, articulation, regionality, dialect, difference, and talk in a variety of arrangements. The goal of using the stated keywords was to obtain articles focusing on outlining and describing AAE speech sound patterns. Articles that appeared in the literature search that provided information regarding AAE speech sound patterns were used and reported in the current study's compilation of data.

Previously, Pollock et al. (1998), Stockman (1996), and Thomas (2007) provided extensive information regarding AAE speech sound patterns. These three works and their citations were the primary sources of the current study's reporting. Additionally, more recent sources such as Shipley & McAfee (2019) were utilized. The formatting and organization of AAE features in the current study were adapted from Pollock et al. (1998) and Stockman (1996). Pollock et al. (1998) provided AAE features in a convenient chart organized by description, internal constraints, examples, scope/direction, geographical information, examples, and references. Similarly, the current study organized AAE features by description/patterns, examples, population/geographical information, and additional information. However, rather than including references in the chart, the current study

provided a separate refeernce list. Also, rather than features being organized by phonological patterns using terminology such as reduction and deletion, the current study organized AAE patterns by sound type (e.g., diphthong, vowel, consonant, and consonant cluster).

Implications/Application of the Study

SLPs can immediately begin using the chart of AAE features found in the appendix. Suppose one is not entirely familiar with AAE speech sound patterns. The chart can provide further context regarding sound productions characteristic of AAE speech sound differences that are likely not indicative of a disorder for AAE speakers. The chart can be one component of SLPs' dynamic assessment process in addition to independent learning about the dialect through engagement with AAE speakers and further research. SLPs are required to differentiate dialectal variations from disordered errors to facilitate accurate assessment reporting and reduce clinical misdiagnosis. When using the chart, clinicians should note that it may not comprehensively cover all AAE features. Also, all features in the chart might not apply to all AAE speakers. It is fitting to consider individual and regional information and differences when making diagnostic decisions. Finally, clinicians should consider that there is not a universal consensus on all AAE speech sound features. Clinicians should research individual AAE features further when deemed necessary.

Conclusion

A more comprehensive chart of AAE speech sound patterns organized by sound using non-deficit terminology can be an efficient clinical tool for SLPs to use clinically. The chart might also help reduce the negative terminology SLPs use to discuss AAE in report writing and clinical discussion. Also, terminology that beginner and advanced SLPs could easily understand was utilized. Various tables are provided in the appendix presenting systematic speech sound patterns of AAE. Expectantly, SLPs will use these tables when evaluating the speech production of AAE speakers to differentiate actual speech sound disorders from mere speech differences.

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APPENDIX

Allophonic Variations Complied Using Non-Deficit Terminology

Table 1

Diphthong Features

Sound	Systematic AAE Patterns	Systematic Examples	Population and/or Geographical Region Info	Additional Information
/ɑɪ/	• /ɑ/ • /ɑː/ • /aj/ • extended duration	• pie → /pɑː/ • ride → /rɑːd/ • time → /tɑːm/	• /ɑ/ and /ɑː/ reported in the Appalachians, Ozarks, Piney Wood, and Wire Grassbelt, Gulf States, TN, and northern and southern AAE • less common in higher SES • might have extended duration in southern states	• second element of diphthong might not be present. only in open syllables, before nasals, or voiced obstruents (e.g., "prize" and "pry") rather than before a voiceless consonant (ex. "price") • /a/ common before /ɚ/ and /l/ • /ɑ/ and /ɑː/ less likely with the word "night" • /ɑ/ and /ɑː/ tend to be strongest before /l/ and /r/ (e.g., "fire and "file) • /ɑ/ and /ɑː/ decreasing in non-southern urban areas • /ɑ/ and /ɑː/might occur before voiceless consonant in Detroit
/ɑʊ/	• /ɑ/ • nucleus of diphthong might not be produced at the front • /æo/ • /æʊ/ • /aˆo/ • /aˆʊ/ • /əʊ/ • /əu/ • /a/ in our • extended duration	• cowboy → /kɑboɪ/ • flour → /flɑɚ/ • our → /ar/	• /a/ recorded in Memphis • only one diphthong element reported in Memphis • /æo/, /æʊ/, /aˆo/, /aˆʊ/, /əʊ/, /əu/ reported in VA and the low country of SC and GA. • extended duration in southern states	• /a/ common in multisyllabic words before obstruents. • /a/ common before /ɚ/ and /l/
/ɔɪ/	• /ə/ • /oe/ • second element of the diphthong centralized • /ɔ/ • extended duration	• oil → /əl/ • toybox → /tɔbaks/ • boy → /boə/ • oil → /ɔl/	• extended duration in southern states	• Common in open syllables multisyllabic words before voiced obstruents • /ɔ/ common before /ɚ/ and /l/

APPENDIX

Table 1 continued

/eɪ/	• /e:/ • /ɛi/ • laxed (e.g., /ɛ/) before tautosyllabic /l/	• tail→ /tɛl/	• /e:/ reported in MD, VA, NC, southern LA, and the south	
/oʊ/	• /o:/ • not present • /æo/ • brought to the front • /oɪ/	• roach→// rɔɪtʃ/	• reported in MD, VA, NC, and southern LA • bringing to front reported in Ohio • /oɪ/ observed in older speakers in GA, SC, and LA	• /æo/ less likely • brining front is rare
/ɔʊ/	• /ɔ/ • /a/			
/ɛɚ/	• /ɚ/ • /ɛə/ • /eʊ/ • affected when inter-vocalic • followed by /ə/ • vowels preceding /r/ centralized, rhotacized, or not produced	• bear → /bɚ/ • there→ / dɛə/ • bear→ / bɛʊ/ • chair→ /tʃɛɚə/	• /ə/ reported in Memphis. • /ɛə/ reported in north and central Texas and Memphis, TN	
/iɚ/	• /ɚ/ • /ɪə/ • affected when inter-vocalic • followed by /ə/ • vowels preceding /r/ centralized, rhotacized, or not produced	• here→ /hɚ/ • deer→ /dɪə/	• /ɚ/ reported in Memphis.	
/aɚ/	• /a/ • affected when inter-vocalic • followed by /ə/	• car→ /kɑ/		
/ɔɚ/	• /oʊ/ • affected when inter-vocalic • followed by /ə/	• story→ / stɔʊi/		
/ɔr/	• /oʊ/ • /o/	• court→ koʊt • court→ /kot/		

Note. This may not be an exhaustive list. Consider individual differences that may occur.

APPENDIX

Table 2

Vowel Features

Sound	Descriptions	Systematic Examples	Population and/or Geographical Region Info	Additional Information
/ɝ/	• produced as non-rhotic vowel following a vowel produced toward the front • /ɜ/ • affected when intervocalic • extended duration	• bird → /bɜd/ • hurry→ /hʌi/ • hurry→ /hɛɚi/	• might have extended duration in southern states	
/ɚ/	• produced as non-rhotic vowel following a fronted vowel • /ə/ • affected when intervocalic • addition of /ɛ/ to stressed syllabic /r/	• zipper→ /zɪɚ/ • stir→ /stɛɚ/	• /ɛ/ addition reported in Memphis	
/æ/	• /ə/ • /ei/ • /a/ • /e/ • /ɛ/ • produced with long off-glide toward /i/ • extended duration	• butter → / buttə/ • can't→ /kein/ • aunt →/ɑnt/ • ham→ /hɛm/ • wagon→ /wɛɲ/ • glass→ /glæʳs/	• reported in southern, urban, and rural areas. • /ɑ/ reported in the gulf states • /a/ more common in Virginia • /ei/ especially in the South • raising of vowel reported in NC • extended duration in southern states	• Especially common before voiceless fricatives

/ɛ/	• /ɪ/ before a nasal • /i/ • extended duration	• pen → /pɪn/ • again → /əgɪn/	• /i/ reported the gulf states • /ɪ/ reported to occur virtually "everywhere" • raising of vowel reported in NC • extended duration in southern states	
/ɪ/	• produced between sibilants • /ʊ/ • /ɪˤ/ • rhotacized following postvocalic or syllabic /l/ • extended duration	• sister → /sɪster/ • sister → /sʊstə/ • whip → /wʊp/ • still → /stɪˤl/ • pig → /pɪˤg/ • milk → /mɚk/ • pickle → /pɚl̩/	• /ɪˤ/ and /ɚ/ reported in Memphis. • /ʊ/ reported in Gulf states • extended duration in southern states	• /ɪˤ/ especially before liquids and velars
/o/	• /ə/ in unstressed syllables • extended duration	• hollow → /holləw/	• extended duration in southern states	
/i/	• /ɪ/ rarely • laxed before tautosyllabic /l/ • extended duration	• happy → /hɑppɪ/ • wheel → /wɪl/	• /ɪ/ might occur among older speakers • /ɪ/ rarely • extended duration in southern states	
/ɑ/	• /ɒː/ • /ɒ/ • /ɔ/ • extended duration	• /start/ might be produced as /stɒːʔt/ or /stɒɹʔt/ • wasp → /wɔs/	• ɔ reported in southwest Louisiana • extended duration in southern states	
/ɔ/	• /æ/ • extended duration		• /æ/ reported in Gulf States • extended duration in southern states	
/ʊ/	• /u/ • extended duration		• extended duration in southern states	

| /u/ | /ʉ/ brought to the front extended duration | | reported in Gulf states brining front is rare in AAE /ʉ/ reported minimally in Gulf states extended duration in southern states | |
| /e/ | might have extended duration | | extended duration in southern states | |

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 3

Semivowel Features

Sound	Descriptions	Systematic Examples	Population and/or Geographical Region Info	Additional Information
/j/	- not produced after non-coronal consonants as in the word "new" - not present after other consonants /r/ for /j/ after a consonant - not present in the word "pasture"	- computer→ /kʰəmˈpʰuɾə/ - music →/mɹuz-ik/ - beautiful →/buɹfl/ - cute → /kɹut/ - pasture→ /pæstə/	- rhotacization of /j/ may be limited to Southern U.S. "pasture" reported in Gulf states	- usually followed by /u/ vowel - usually precedes a consonant

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 4

Consonant Features (Sonorants)

Sound	Descriptions	Systematic Examples	Population and/or Geographical Region Info	Additional Information
/m/	not produced in final position			
/n/	not produced in final position			

/ŋ/	• not produced in final position • /n/ in unstressed final syllables • preceding vowel nasalized and /ŋ/ not produced	• sing→/sĩ/	• Nasalization reported in Boston	
/l/	• not produced in final position • /ə/ in final • mid to high back rounded vowel or semivowel in the range of /o/ or /w/ in final • not produced after rounded vowel in final • not produced when following a vowel and preceding a labial sound as in "twelve," "help," and "-self" compounds • might be /ʊ/	• pull →/pʰʊ:/ • feel →/fio:/ • bell → /bɛʊ/ • ball→ /bɑɯ/ • belt→ /bɛɤt/ • bottle→ /boɾʊ/ • ball→ /bɔ/ • bowl→ /boʊ/ • help → /hɛp/ • rudolph → /rudɔf/ • milk→ /mɪʊk/	• not produced when preceding a labial -reported in the south • /ʊ/ reported in Boston	• usually either high back rounded /ʊ/, high back unrounded /ɯ/, mid back unrounded /ɤ/, or sometimes /ə/ • assimilate sound might be influenced and shaped by preceding vowel when following a mid-back vowel

| /r/ | • not produced when preceding word that begins with vowel
• not produced if part of a consonant cluster of unstressed syllables as in "throw," "through," "brother," and "forget."
• /r/ in a syllable coda is produced as /ə/ in unstressed and stressed syllables
• "linking /r/" in final position preceding word that begins with vowel (e.g., "four eggs") might be produced when
• word intervocalic /r/ not produced
• /ʊ/ | • four → /foə/ or /foː/
• four → /foː ɛgz/
• carry→ /kʰæi/
• florida→ /flɑəɹə/
• bird→ /bʊd/ | • in the "deep south" (i.e., from South Carolina to Louisiana) and up the Mississippi valley, /r/ in stressed syllables may be produced as /əi/ as in the words "work" and "third"
• /ə/ reported in and out of the south-high prevalence in New York City and Hillsborough, North Carolina. Low prevalence in Columbus, OH and Davenport, IA
• not present at all in Boston and NYC dialects
• /ʊ/ reported in Boston | • /ə/ most common in unstressed syllables and in final and preconsonantal postvocalic positions |

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 5

Consonant Features (Obstruents)

Sound(s)	Descriptions	Systematic Examples	Population and/or Geographical Region Info	Additio-nal Information
/b/	• not produced in final position • not released followed by glottalization in final position • /p/ in final position	• cab→ /cæp/		
/p/	• not produced in final position • voicing of initial singleton /p/ in initial unstressed syllables	• Pajamas → /bəʒæməz/ • Potato → /bəteɪɾo/	• voicing of /p/: Memphis, TN	

/d/	• not produced in final position • not voiced followed by glottalization in final position • /t/ in final position	• bɑd → / bæːtʔ/ • bed → /bɛt/	• absence and voicelessness reported in Detroit and more common as SES decreased; more common among adolescents than adults	
/t/	• not produced in final position • glottal stop before a syllabic nasal			
/g/	• not produced in final position • not voiced followed by glottalization in final position • /k/ in final position	• pig → /pɪk/		
/k/	• not produced in final position			
/v/	• not produced in final position • /b/ when preceding a nasal • /b/ in the medial position	• seven → / sɛbm/		
/z/	• not produced in final position • /s/ in final position	• scissors → / sɪzərs/		
/s/	• not present in final position when the word precedes a quantitative marker as in "two shoe" • lengthened in plurals • glottal stop before a syllabic nasal • /d/ before a syllabic nasal	• posts →/ pʰousez/ • desks →/ dɛsəz/ • wasn't→ / wʌdnt/ • wasn't→ / wʌʔn/		
/ʒ/	• not produced in final position • might be /dʒ/ in final position			

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 6

Interdental Fricative Features

Sound	Descriptions	Examples	Population and/or Geographical Region Info	Additional Information

| /ð/ | • /d/ in initial position
• /d/ in medial position
• /v/ in medial position
• /d/ in final position
• /v/ in final position
• /‿d/
• sound might be influenced and shaped by preceding sound | • thy→ /dɑj/
• other → /ʌdɚ/
• bathe→/beiv/
• like that → /ɫɑik:æʔ/ | • reported in Detroit and New York City
• Reported in the gulf states
• might be less common among people of higher SES, women, speakers with frequent contact w/ White people | |
| /θ/ | • /t/ in initial position
• /f/ in medial position
• /f/ in final position
• /tθ/
• not produced in final
• /‿t/
• occasional occurrence of /s/
• /t/ in the medial and final positions when following a nasal
• /d/ in initial position | • thigh → /tɑigh/
• bath→ /bæf/
• bathtub→ /bæftʌb/
• tenth → /tɛnt/
• nothing → /nʌtn/
• bathroom → /bæs-rum/
• birthday→/bɚsdei/
• thumb→/dʌm/ | • /θ/→ /s/: Memphis, TN and middle and south Atlantic states
• Reported in the gulf states
• reported in Detroit and New York City
• might be less common among people of higher SES, women, speakers with frequent contact w/ White people | • /θ/→ /s/: When in the final position of a syllable within a word before another consonant |

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 7

Final Consonant Features

Descriptions	Systematic Examples	Population and/ or Geographical Region Info	Additional Information
• Most likely not produced if a nasal sound or oral stop			• when voiced obstruents are deleted, length of preceding vowel is maintained • may be lexically determined

• Most likely not produced if before a word starting with a consonant, especially an obstruent or pause rather than a vowel	• right food → / rɑj fuː/ • best buy → /bɛs bɑː/		
• Most likely not produced if it contains a vowel that can be lengthened or nasalized (more than usual) to maintain semantic clarity	• bad→ /bæ̃/ • bean → /bĩː/ • man → /mæ̃/		
• Most likely not produced if part of monomorphemic consonant cluster	• sent →/sin/		
• Voiceless consonant might occur instead of voice consonant	• bad→ /bæːt/ • nose→ /nouːs/	• may be unique among Southern dialects • /d/ phoneme reported in Detroit	• voiceless sound (e.g., /t/) more common before pauses than consonants • no sound more common before constants than pauses

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 8

Other Consonant Variations

Descriptions	Examples	Population and/or Geographical Region Info	Additional Information
• nasals in nonfinal contexts not produced	• convenient → / kʰənvˈiənt/		
• sound might be influenced and shaped by preceding sound	• ran there → / ræn nɛə/ • talking about → t/aː baː/ or / taː maː/		

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 9

2-Element Cluster Features (Obstruent + Sonorant; Sonorant + Obstruent; Obstruent + Obstruent)

Sound(s)	Descriptions	Systematic Examples	Population and/or Geographical Region Info	Additional Information

/θr/	• /θ/ in initial	• throw→ /θoʊ/		• most often with unstressed /θr/ or in unstressed syllables
/ʃr/	• /s/ in initial • /ʃɹ/ in initial • /sw/ in inital	• shred→ /srɛd/ • shrimp → /ʃɹɪmp/ • shrimp → /ʃwɪmp/		
/pr/	• /p/ in initial cluster	• professor → / pofɛsɚ/		
/lm/	• /m/ in final	• film → /fɪm/		
/ln/	• /n/ in final	• kiln → /kin/		
/lp/	• /p/ in final	• help → /hɛp/		
/ld/	• /d/ in final	• held→ /hɛd/		
/lt/	• /t/ in final	• lilt → /lɪt/		
/lk/	• /k/ in final	• elk → /ɛk/		
/lf/	• /f/ in final	• elf→ /ɛf/		
/lv/	• /v/ in final • not produced in final position	• solve → /sɑv/ • solve → /sɑ/		
/lθ/	• /f/ in final • /t/ in final	• health → /hɛf/ • health→/hɛt/		
/ls/	• /s/ in final	• false → /fɑs/		
/ltʃ/	• /tʃ/ in final	• mulch → /mʌtʃ/		
/ldʒ/	• /dʒ/ in final	• bulge →/bʌdʒe/		
/mp/	• /m/ in final	• trump → /trʌm/		
/mf/	• /mp/ in final	• triumph → /trɑ-jmp/		
/nt/	• /n/ in final	• bent → /bɪn/		Whole cluster more likely to be produced than other clusters
"n't"	• /n/ • not produced	• can't→ /kein/		
/nd/	• /n/ in final	• land → /læn/ • might not be produced		
/nz/	• /ns/ in final	• lens → /lɛns/		
/nθ/	• /nf/ in final • /nt/ in final	• tenth → /tɪnf/ • tenth → /tɪnt/		
/ŋk/	• /ŋ/ in final • not produced	• sink → /siŋ/		Whole cluster more likely to be produced than other clusters

/ks/	• /k/ in final • /s/ when cluster preceding vowel initial suffix	• six → /sɪk/ • accepts→ /ʌsep/		
/sp/	• /s/ in final • /ps/in final	• wasp → /wɑs/ • gasp → /græps/		
/st/	• /s/ in final	• west → /wɛs/		
/sk/	• might be /s/ in final • might be /ks in final	• ask →/æs/ • ask → /æks/	• reported in gulf states	• /sk/→ /ks/ may be lexically determined • primarily occurs in the world "ask"
/pt/	• /p/ in final	• kept → /kɛp/		
/kt/	• /t/ in final • /k/ in final	• act → /æt/ • act →/æk/		
/ft/	• /f/ in final	• left → /lɛf/		
/dθ/	• /t/ in final • /f/ in final	• width → /wɪt/ • width → /wɪf/		

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 10

3-Element Cluster (Obstruent + Obstruent + Sonorant; Sonorant + Obstruent + Obstruent)

Sound(s)	Descriptions	Systematic Examples	Population and/or Geographical Region Info	Additional Information
/str/	• /skr/ initial	• strike → /skrɑik/ • street → /skrit/ • straw → /strɔ	African Americans born in the South	
/mpt/	• /nf/ in final	• tempt → /tɛmp/		
/ŋkθ/	• /nf/ in final	• strength→ /skrɛnf/		
/ŋks/	• /ns/ in final	• larynx → /lɚns/		
/kst/	• /ks/ in final	• next → /nɛks/		
/ksθ/	• /st/ in final • /ks/ in final	• sixth → /sɪst/ • sixth → /sɪks/		

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 11

Other Consonant Cluster Information

Descriptions	Example(s)	Population and/or Geographical Region Info	Additional Information
• ask →/æks/			
• /ps/ → /sp/	• wasp →/waps/		
• **Cluster simplification less likely when:** ○ less likely when both consonants are stops than when first member is a sibilant ○ less likely when the first member is a sibilant than when it is an /l/ ○ less likely when the first member is an /l/ than when it is a nasal ○ less likely when a stop forms a morpheme than when it does not	• closed → /kloz+d/ • More frequent for irregular past tense forms Ex. "kept"		
• **Cluster simplification more likely** ○ when both members of the cluster have the same voicing than when they do not have the same voicing • in unstressed syllables than stressed syllables	• "past" vs. "lamp"	reported in Rural and urban areas	**More likely when** • single morpheme compared to double • when unstressed compared to stressed • when following consonant compared to vowel when an alveolar plosive compared to other consonants
• in clusters with a stop + /s/ or /z/, the stop might not be produced	• that's → /dæs/		

• postvocalic consonant in medial consonant sequence in bisyllabic words not produced if the cluster does not function like an initial cluster (e.g., /sk/)	• fifteen → /fɪtin/		
• might occur when preceding a word starting with a vowel	• past a house → "pas' a house"	any social level	
• items in a cluster may move with or without reduplication	• escape→ /ɪˈskeɪp/	Detroit	

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 12

Suprasegmental Features

Descriptions	Examples	Population and/or Geographical Region Info	Additional Information
• Stress placed on first syllable of some	• police • Detroit	• reported in Gulf states	• Might be lexically determined

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 13

Unstressed Syllable Features

Descriptions	Examples	Population and/or Geographical Region Info	Additional Information
Initial unstressed syllables are not always present in AAE when • syllable is a single vowel • word before ends in a vowel • target word belongs to a closed grammatical class (e.g., conjunction, preposition) that is usually unstressed in natural speech	• away • go away Other examples of unstressed syllables: • away • before • admit • about • until • pretend • believe →/ bli:v/	• possibly more common in older speakers • reported in rural and urban areas	• unstressed syllables are more likely not produced when the target word belongs to a closed grammatical class compared to an open grammatical class.

Initial unstressed syllables are most likely present when • the syllable has a cv shape that cannot be clustered with the initial consonant of the second syllable	• become → "come" • expect → "spect"	• reported in MS	• not producing CV combo is becoming less common than V alone.
• entire weak syllable (including consonants and vowels) deleted initial position			• More likely in syllable for vowel only compared to CV syllables
• unstressed syllables in the medial position not produced	• government → /gʌvment/	• possibly more common in older speakers • reported in rural and urban areas	
• reduplicated syllables not produced	• Mississippi → /mɪsɪpi/ • probably→ /prɑbli/		

Note. This may not be an exhaustive list. Consider individual differences that may occur.

Table 14

Plural, Past Tense, and -ing Features

Descriptions	Examples	Population and/or Geographical Region Info	Additional Information
• stop sounds in cons0onant clusters of plural words may not be produced	• posts → /pʰousez/ • desks → /dɛsəz/		
• past tense "ed" might be pronounced as /ɪd/ in the following words: skin, bone, face, like • past tense "ed" might be pronounced as /s/ when final sound is /st/	• two faced→ /tu festɪd/ • liked → /laɪkɪd/ • missed→ /mɪs/ • passed→ /pæs/		
• Words ending -ing might be /ɪn/	• Working→ /wɜrkɪn/		

Note. This may not be an exhaustive list. Consider individual differences that may occur.

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HELPING PARENTS OF CHILDREN WITH ASD FIND APPROPRIATE FAMILY SUPPORT

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— ABSTRACT —

Parents finding out they have a child diagnosed with autism spectrum disorder (ASD) are often frustrated and feel isolated when looking for family support to help them cope. They may come to speech-language pathologists (SLPs) and audiologists for evaluations and therapy, but these professionals often focus their discussions with the parents on the evaluation findings and issues with therapy related to the children. What these professionals miss is discussing where the parents can find support in their communities to be more successful dealing with their children while finding others with whom they can share frustrations and concerns. These interactions cannot only help parents with their children, but also bridge the gap with professionals and the children's caregivers.

This article discusses the lack of support for Black parents who have a child with ASD and the emotional feelings, concerns, and frustrations these parents identify dealing with their child. This will also include misconceptions that are faced by these parents and the negative interactions these parents have with the schools, with medical professionals, and others. The purpose of the article is for SLPs and Audiologists to engage with families and provide appropriate discussions regarding where the families can obtain adequate community support and services.

Key Words: autism spectrum disorder, Black parents, audiologists, speech-language pathologists

Speech-language pathologists (SLPs) and audiologists who deal with children who are diagnosed with autism spectrum disorder (ASD) often engage in evaluating issues with these children as well as providing therapy for these children. They may ask questions of the parents typically focusing on issues related specifically to the child. What these professionals may miss is engaging parents in discussions regarding where these families may find support when they have questions.

What is Available for Parents of Children ASD

In reviewing what is published regarding involvement of SLPs with parents of children diagnosed with ASD, the review indicated that the overwhelming material on the internet where parents may search focuses on what these professionals can provide regarding therapy for their child. The material also discusses how the SLP can work with the parent to help them learn how to support the speech, language, and communication therapy at home that is provided to the child by the SLP. For example, the Autism Speaks website (https://www.autismspeaks.org/science-blog/speech-language-pathologists-and-autism-learn-how-we-can-help) discusses "Speech-language pathologists and autism: Learn how we can help focusing on the therapy and communication training for these children with ASD as well as early intervention and early diagnosis of the children's communication problems." However, there is nothing regarding where the parents can find community support for any issues or concerns that are affecting the parents and the family as a whole. In an article published in Focus on Autism and Other Developmental Disabilities (Beverly & Matthews, 2021) the authors focus their research solely on what SLPs and parents of children with ASD feel about how prepared the SLPs working with the children with ASD are regarding dealing successfully providing speech, language, and communication therapy for these children. There was nothing in their research that discussed the SLP's interactions with parents regarding support the parents wanted and needed to deal better with their child with ASD as well as support for the parent's feelings and concerns.

Our national professional association, the American Speech-Language-Hearing Association (ASHA; n.d.) has an online publication regarding Autism (Autism Spectrum Disorder) and the role of the SLP working with such clients. In reviewing this publication, it was noted that the factors discussed are only: information about the definition of Autism (ASD), "Signs and Symptoms" the SLP may see in a child indicating the child may have ASD, the "Causes of ASD", what parents and other professionals may need to know regarding "Seeing a Professional" and what the SLP may need to know about other professionals who work with children with ASD, along with "Other Resources". In the section on "Seeing a Professional", it was identified that the publication focuses on evaluation/assessments for people with ASD as well as treatments that the SLP may provide for people with ASD. In the section on "Other Resources", ASHA identifies other places people can check out about information regarding ASD. These places include Autism Navigator, Autism Self-Advocacy Network, Autism Society of America, Autism Speaks, Autism Today, Centers for Disease Control and Prevention, Autism Information Center, and the National Institute of Mental Health Autism Information. Reviewing each of these links in the ASHA publication, the following was identified regarding resources for parents in general versus resources for parents who are Black.

Review of Autism Navigator has a specific "link" for parents called "Family Resources". One of these links is to a "Virtual Community for Families" which focuses on children one to eight years old. This link indicates that the community discussion focuses on information about speech, language, communication, and behavioral issues in children which may indicate ASD, or which may be found in a child identified with ASD. However, the link does not discuss concerns parents may have and frustrations parents may feel and the fact that they can share such issues on this virtual link. While the above link is for parents of children one to eight years of age, there is also a link specifically for parents of children 24 months old and younger. However, this link focuses on the speech, language, and communication factors as well as behavioral issues that may indicate that these young children may have ASD. Thus, there is nothing specifically for parents regarding their personal concerns and where they may find support and help for these issues.

The Autism "Self-Advocacy" link is more for specifics regarding how older children and adolescents and adults can advocate for their needs and issues since they have ASD. It does not focus on families and their specific needs nor on any advocacy they may need.

The Autism Society of America (ASA) provides information regarding local groups that focus on families having children with ASD as well as people with ASD who may be ready for self-learning and advocacy as older adolescents and adults. There may be some support through this Society for families, but they would need to contact their local ASA group to find out.

One concern the authors have identified is the following. One of the authors has a child with ASD and the child's parents went to an ASA meeting. At the meeting there were many families present, but of the nearly 50 families having children with ASD, only two were Black. Thus, would this group of largely White families be able to appropriately reflect on concerns the Black parents have because the group was predominantly White families?

As for the Autism Speaks organization, some of their focus was discussed earlier. However, going to their website what was noticed was that there is a specific link for Parents where they can find some resources. Viewing the resources noted on that link they were mostly regarding information about the person with ASD and that person's specific issues and not issues that parents may have.

The Autism Today link is specifically for parents providing examples of books, videos, and articles about ASD and people, especially children with ASD. There appears to be little focus on where parents of children with ASD can find support for the parents' needs, concerns, emotional frustrations, etc. This led the first author to conduct a comprehensive research study identifying what resources parents have children with ASD find in their communities when the families are Black.

Method

Participants

The researcher developed specific questions and asked them of the parents. These questions involved what resources the parents identified to provide them help when questions or needs arose regarding their child with ASD. Additionally, questions were asked regarding health issues identified by the parents and where they discovered resources to assist them with these problems, and what the parents learned regarding access to community resources and programs.

Consent forms and interview questions were provided to each participant prior to the interviews by email or by mailing them a printed copy. Interviews were conducted either in person or by phone. The researcher did not change her interviewing style between the in person and by phone interviews.

The semi-structured questions were designed for managing the interviews being subdivided into four focus areas, with a set of questions on each of these areas. The four areas were: 1). personal experiences, 2). social support/relationships, 3). community/emotional support, and 4). what needs to be done. Few follow up questions were asked due to the personal

and uncomfortable nature of some of the questions and out of respect to the participants' time and need to spend limited time away from being with their child who has ASD.

For the participants who agreed to meet with the researcher, accommodations were provided by scheduling interviews after church services were completed, due to this being a familiar and similar setting for both the participants and the researcher. The researcher also was sensitive to the limited time available for participants due to parenting responsibilities of a child with ASD. Participants who were interviewed by phone specifically cited attending to the needs of their child as a reason to request an interview that was not conducted in person.

The researcher employed a semi-structured, one-on-one interview methodology to gather rich detail and insight into the daily experiences of families who have children diagnosed with ASD. The researcher focused on asking questions from each of the four categories, but also probed the parent to expand answers provided to better understand their experiences raising a child with ASD.

Phenomenology is the study of experiences from the first-person point of view or centering on that person's experiences while investigating how they communicate with others. Phenomenology describes the common factors identified with several individuals based on their experiences related to a concept or phenomenon. Phenomenological methodologies rely on descriptions of experiences lived to develop an understanding of the meaning of human interactions in everyday life (Schwandt, 2001). By using a phenomenological approach for this research, common or shared experiences of a phenomenon for several individuals can be understood (Creswell & Miller, 2000). This method develops a deeper understanding about the features of the phenomenon (Moustakas, 1994) and provides numerous examples of phenomena that have been identified.

The present research examined the experiences of parents of Black children with ASD employing self-reported data through in-depth interviews. There are three methods used in this study (Elliott, 2005; Pinnegar & Daynes, 2007). First, the sociocultural focus is on cultural considerations which influence the individual parent's experiences. Second, a focus on rich descriptions of the participants' stories about significant issues and their children, are provided. Third, the literary approach is used to complement both the sociocultural focus and the focus on rich description in order to describe experiences adequately (Denzin & Lincoln, 2011).

Procedures

The researcher met socially and privately with participating parents and took notes. The in-depth questions developed by the researcher (i.e., the first author) were presented to get concrete information regarding whether Black parents received or found support for their concerns about their child diagnosed with ASD, and input regarding from whom this information was obtained and what, specifically, was told to them. Additionally, general discussions were held to expand on what the parents said and clarify issues that they presented.

The researcher took notes and, later, reviewed the notes focusing on themes that were identified as common among the 12 participating families. The study employed one-on-one interviews to obtain information and perceptions of Black families of children with ASD. The one-on-one interviews provided the opportunity to better understand the experiences of raising a child with ASD in a Black family and how emotional, social, and caregiving support can affect that experience.

Data collection in phenomenological studies often consists of in-depth interviews with participants, although sometimes data is collected as part of a focus group (Polkinghorne, 1989). Using in-depth interviews establishes a cohesive partnership between the researcher and the participants. Denzin and Lincoln (2011) suggest conducting qualitative research which leads to empowering individuals to share their stories and have their voices heard. Qualitative research also functions to minimize the power differential in relationships that often exist between a researcher and the participants in a study.

Phenomenology is the study of what the individual experiences and how the experience is received and explained both internally and personally when presented to others (Moustakas, 1994). Phenomenology was used to describe the experiences of these Black parents of children with ASD. A phenomenological study attempts to set aside biases and preconceived assumptions of human experiences, feelings, and responses to a particular situation. Phenomenological research refers to researching how an individual perceives the meaning of an event, as opposed to how the event exists beyond the perception of people through a descriptive passage that discusses the essence of the experience for individuals. Moustakas (1994) argues that the experiences of individuals and how they have both subjective experiences of the phenomenon and objective experiences of something in common with other people are important. This research form endeavors to understand what a group of people felt during a phenomenon. Perceptions, perspectives, and understanding are all going to be analyzed and then used to create an understanding of what it is like to experience autism within a Black family. Within interdisciplinary fields of study, phenomenology attempts to bring pure, untainted data from those who have experienced the phenomena. Deeply rooted in philosophy, this form of research certainly has its benefits, including a unique perspective to the experience, an intimate understanding of how the family's experiences are different, but at the same time, the similar, and rich data explaining daily, lived experiences (Maxwell, 2013).

The fundamental goal of the approach is to arrive at a description of the nature of the particular phenomenon that is rich in detail (Creswell, 2013). In-depth interviews with Black parents who have first-hand knowledge of autism as they are raising their children with ASD provide a rich description of this lived experience. The interviews answer broad questions (Moustakas, 1994) related to what is experienced in terms of the phenomenon and what contexts or situations typically influence the experiences of the phenomenon being studied (Creswell, 2013). Through this process the researcher asks the study participants to explain their daily, life experiences and arrive at a shared understanding of the phenomenon.

Results

The interview data from Black parents raising children with ASD provides voice to their daily experiences of the challenges and difficulties of parenting a child with special needs. Many different themes, especially Major/Primary Themes (see Table 1), arose from the interview data, using the parents' explanations of how they met the challenges and difficulties of raising a child with ASD and how they seek support or encouragement in dealing with the frustrations of parenting, additional stress of rearing a child with ASD, and what support they wish was provided for them from the medical community, including SLPs and Audiologists, within their family and from "friends groups" at their places of religious worship.

Results from the input provided by these Black parents of children diagnosed with ASD revealed high stress levels with these parents negatively affected by significant disparities when seeking and receiving healthcare. Black families with children with ASD cite the significance of religion, community, and family involvement as important providers of emotional support. They rely on many people for emotional and spiritual support, including their families, church members, and friends.

One significant factor identified was how these Black parents have come to accept or be stigmatize having a child with ASD. Parents and caregivers of children with ASD feel they need continued social

and spiritual support and information about autism The support and information they seek can be provided by family and friends, faith communities, and healthcare providers, including SLPs and audiologists.

Specifically, the themes or categories of data identified from the interviews included inequalities in the diagnosis and treatment of Black children with ASD and disparities across all services provided to the children which was a constant theme.

The Health Belief Model (HBM) helps explain the frustrations of Black parents who seek medical treatment and services for their children with ASD. HBM identifies perceptions of those studied being important predictors of whether the person will seek treatment and how motivated these people are to change their behaviors. For the present study, the perceptions of severity and susceptibility and the concerns about barriers to receiving treatment were identified as very important. Black parents of children with ASD face many barriers when trying to get their children diagnosed with ASD, and after strong advocacy to obtain appropriate assessments, they must continue to forcefully request services and treatments for their children. HBM also identifies perceived benefits of behavior change as impacting whether changes are made. Parents of Black children with ASD are typically very motivated to pursue medical and other interventions for their children as they believe there are benefits from such interventions. Medical professionals, including Speech-Language Pathologists and Audiologists, need to understand the gravity of health disparities Black families face when seeking medical care and treatments, especially for ASD-related issues, and help remove these barriers which prevent access to beneficial services.

Parents interviewed for this study also mentioned many times their frustrations with the process of getting their child properly diagnosed with ASD and their desire that medical professionals would be more proactive in observing changes in their children which would indicate a possible ASD diagnosis. Following the diagnosis, Black parents in this study recommend and request that medical professionals including SLPs and audiologists proactively provide information about autism and how to access services for their children, especially since the ASD diagnosis itself is life changing and usually prompts feelings of helplessness and uncertainty for parents.

The theory of intersectionality also helps explain this disparity in receiving diagnosis for ASD and treatment for young Black children. This study provides the phenomenological daily experiences of mothers who are raising a child with ASD. As intersectionality reveals intersections of oppression,

health disparities can be better understood. Intersectionality shows that women seeking healthcare services for their Black children with ASD can experience health disparities because of their many layers of identity, including race, gender, age, socioeconomic status, etc. Concerns raised by women with medical professionals are more likely to be dismissed without appropriate testing or treatment. There is a longstanding history of healthcare segregation based on race. When a Black mother of a child with ASD advocates for her child with medical professionals, including SLP and Audiologists, her concerns are likely ignored. Black fathers of children with ASD are also likely to have their concerns dismissed or minimized by such professionals. Although men are not typically burdened by their gender, they, too, can experience multiple intersections of oppression. Regardless of profession or socioeconomic status, Black men also face discrimination from medical professionals and are less likely to have their concerns addressed, tested, or treated than their middle-class White peers.

The parents of Black children with ASD interviewed for this study constantly mention community support as being an important need for them to adequately reduce their own stresses and provide a loving home for their children. Community support in this study can be defined as any support outside of the family unit. Extended family, friends, community groups, and church groups are all entities from which support is desired by parents of Black children with ASD.

Lack of resources is a continual concern for these parents. Geographically, resources may not be readily available for Black children with ASD. Additionally, parents of children with autism may not even be informed by medical professionals or government agencies that resources are or should be available for their children. Healthcare practitioners may neglect to tell Black parents of children with autism about resources or where to seek them because they believe the parent will not be motivated to seek this assistance. Thus, medical and health professionals, including SLP and Audiologists, may be a barrier as identified in the HBM to better healthcare due to their beliefs about their patients or their patients' caregivers. Because Blacks are often stigmatized by medical professionals and experience health disparities because of these stigmatizations, their healthcare is substandard.

Many of the Black parents of children with autism interviewed for this study believe media messages about autism are typically positive, but not necessarily realistic. Because people with ASD are depicted. Parents of children with ASD would prefer that persons with autism are depicted in the media as having abilities and skills across the autism spectrum.

Table 1

Major/Primary Themes Identified from the Interviews with Black Parents of Children with ASD

Theme	Description	Sample Quotes (when appropriate)
High Levels of Stress	Parents felt that there were many challenges and difficulties raising a child with ASD that caused parental stress.	
Lack of Resources	Parents felt they did not have appropriate support to help them overcome the challenges and difficulties. (This includes services by SLPs and Audiologists.)	*"Practitioners should have information to share with families, schools should have a person available to reach out to families, provide seminars and information packets, institutions should provide fair and adequate resources and funding to all families."*
Access to Healthcare and Limited Services	Stress was made worse because of problems obtaining appropriate healthcare and services their child with ASD needed.	
Problems Obtaining Information Regarding Their Children with ASD.		*"Many of us are not in environments where information is easily accessible and, as a result, some of our children get diagnosed much later and get services or help later than other ethnic groups."*
Being Stigmatized Having a Child with ASD	Many Parents felt that people and the media view ASD in very negative ways which stigmatized them, their families and, especially, their child.	
Significant Healthcare Disparities for Black Families	There are many barriers that Black Families may face when seeking appropriate services for their children, especially a child with ASD, including SLP and Audiology services.	
Obtaining Appropriate Diagnosis for Their Child with ASD	Often the child with ASD was diagnosed with some other emotional or behavioral disorder which was later found to be inappropriate. (This is very important for SLPs and Audiologists to consider.)	
Obtaining Appropriate Treatment for Their Child with ASD	Schools often provided inappropriate IEPs for their children, or a lack of appropriate services and Parents often did not know where to go for appropriate services. (This is very important for SLPs and Audiologists.)	
Media Messages about Autism	Autism is often viewed negatively in the media.	*"The message that I receive from media is that autism is a cookie cutter disability, and it is not. I am constantly amazed at the things that my child and my students achieve and develop as they grow."*

Unfortunately, media still provides very negative depictions of ASD as well, portraying children as well as adults as awkward and unpredictable which further stigmatizes and makes others hesitant to interact with children with ASD.

Lack of awareness of autism in the United States is an ongoing problem for Black parents raising children with ASD. Because autism is still viewed as different or exotic, and those beliefs are furthered by negative media images, autism and children with ASD are negatively stigmatized. Parents interviewed for this study prefer that people approach them personally and ask questions about autism so they can help others become aware of autism and how children are affected by the spectrum both with their abilities and limitations. The need to bring more awareness to ASD is also believed to be important, so that society as a whole must make an effort to build awareness of autism and not just rely upon persons with ASD or their caregiving parents to inform others about autism and how it impacts their Black families.

Conclusion

As a Black parent of a child with ASD, there are many challenges in daily life. One of the large challenges is communicating with one's child with ASD who may have varying abilities to understand verbal and nonverbal communication and may be severely limited in communicating to others both verbally and nonverbally. Caregiving for someone who has difficulty communicating is a challenge and adds stress to parents of Black children with ASD. This stress of communicating can be reduced somewhat as parents identify how to best communicate with their child with ASD and how the child's abilities can be utilized to communicate effectively. The stress of all those identified in interviews involved in the present study is addressed solely by those who have experience working with persons with ASD, such as medical professionals, educators, and SLP and Audiologists. Additionally, parents of children with ASD who are willing to help and mentor other parents of children with ASD can be an important part of supporting and helping these other parents, especially Black parents.

The responsibilities of caring for a child with ASD are great and can be alleviated somewhat by the nurturing social support of others. Limited social support was mentioned many times by the Black parents of children with ASD interviewed for this study. Social support can be provided by friends, family members, and members of church groups, etc. Listening to the parent of a child with ASD, being willing to listen to venting about frustrations and stresses of

raising such a child and providing opportunities to do something other than caregiving are all welcome ways for professionals, such as SLP and Audiologists to provide social support to parents of Black children with ASD. Table 2 outlines some of the support parents identified they found, which SLPs and Audiologists can share with Black families having a child with ASD.

Raising a child is a stressful experience. However, raising a child with ASD is additionally stressful due to special needs that children with autism have. The Black parents of children with autism interviewed for this study also talked about the heavy stresses the entire family faces when raising a child with ASD. In this phenomenological study of daily lived experiences of Black parents of children with autism, it is important to highlight the many stresses experienced when caregiving for such a child.

Receiving the information that a child has been diagnosed with ASD is almost a universally devastating experience for the Black parents as identified by the parents interviewed for the present study. The initial finding was negative experiences and feelings of hopelessness and helplessness which were common among these parents. However, some of the parents were able to quickly reframe their frustration and grief into recognizing that parenting a Black child with ASD is a blessing to them and their families. Because of the religious and spiritual beliefs of the parents interviewed, some of them are able to realize the blessings of learning from their children with ASD and appreciating the perspective that a child with ASD provides the Black parents and their families.

Black women have traditionally taken the primary caregiving role for children and housekeeping tasks within Black households. Mothering a child with ASD becomes an all-consuming task for many of the women interviewed for this study based on the experiences of the Black families with a child with ASD interviewed. Although each parent has many identities, the mothers in this study say that their experiences parenting a child with ASD shaped their identity as a mother to the child with ASD first and all other identities, including spouse, employee, friend, or even parent to other children became secondary. While focusing on a child with ASD is important and providing excellent care to the child is necessary, parents can find relief from their parenting stresses by taking breaks from the caregiving by focusing on their other identities andtionships they have that are defined by their other identities.

Raising a child with ASD can make many parents feel socially isolated. The feelings of isolation are felt personally as a parent of a child with autism

Table 2

Where Black Parents of Children with ASD Found Support

Religious Community	Many parents found minimal support from church members including Pastors and other families whether these families did or did not have a child with ASD. SLPs and Audiologists may find it helpful to present to church members on autism awareness.
Withing the Family	Support was often found by members of the family such as the spouse or other children who would help the parent deal with their child with ASD.
Friends	Parents of children with ASD found turning to close friends was helpful to share the parents' concerns as well as express their problems which reduced stress many times. SLPs and Audiologists may find it helpful to present to communities on autism awareness.
ASD Organizations	There are a number of special ASD organizations which have websites (many cited in this article) and community meetings. However, as reported, these organizations may not have many Black families involved so SLPs and Audiologists should check out these organizations to see which, if any in the family's community, have other Black families involved.
Providing Appropriate Information	Many concerns the Black families raised were a lack of appropriate information regarding ASD including treatments and daily needs. SLPs and Audiologists should discuss with all families having a child with ASD appropriate and comprehensive information that the families can understand. This is especially important for Black families having a child with ASD.

may not have friends or family members they can rely on to assist physically with the child or even listen to their frustrations. A parent of a child with ASD who feels isolated can also further isolate the entire family from vital relationships and interactions. Fears of how a child with ASD will behave or react to new people or new situations and settings sometimes makes it difficult to interact with the family and other people. However, parents raising children with ASD crave opportunities to not feel so isolated and appreciate the efforts of others to include them and their children with ASD in activities and programs.

Access to programs and resources benefiting children with ASD is an important need for Black parents of children with ASD. Knowledge of which programs and resources exist is the first thing that needs to be provided to such parents. This information can be provided by the Speech-Language Pathologist and Audiologist. Unfortunately, the access to information about programs and resources for children with ASD is unevenly provided. If information about such programs is provided, access to those programs and resources is usually not easily attained and Black parents of children with ASD must repeatedly advocate to receive benefits for their children.

Parents of Black children with autism also reported that they believe society needs to provide education about autism to everyone. This education could be in the form of classes or programming, or even through the media. These parents know that their children and families are stigmatized due to their child having ASD, and they realize the stigmatization will only be reduced when all are educated about autism and the special needs and abilities of children who have ASD. The responsibility of providing education about autism should be assumed by everyone, including Speech-Language Pathologists and Audiologists, especially since there are more diagnoses of autism each year.

Results from the present study indicate that sources of support for Black parents of children with ASD can be provided by many different people. Family, friends, church members, members of organizations for families involved with ASD are all important sources for reducing parental stress when raising a child with autism. Speech-Language Pathologists and Audiologists working with these children also need to provide support through listening and consultation with these parents to help them with their concerns and guide them to places where they can get what they need.

The Black parents with children with ASD interviewed for this study hope for greater acceptance of ASD and their children in society. They believe children need to be taught from a young age to accept everyone, regardless of their limitations or abilities, and provide a welcoming experience for all children. Too often children with ASD and their families still face discrimination in all realms of life because autism is not readily understood nor accepted. By educating and encouraging everyone to embrace and accept children with ASD, raising a child with autism will be an easier experience for Black parents, all their children, and their entire families. Speech-Language Pathologists and Audiologists can be a significant supporting part to make these experiences more positive for these families.

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A MODEL FOR CSD FACULTY TO IMPLEMENT ORGANIZATIONAL MULTICULTURAL COMPETENCE IN HIGHER EDUCATION

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— ABSTRACT —

Multicultural competence (MC) is essential for unbiased, successful delivery of academic curriculums and clinical practices in the field of communication sciences and disorders (CSD). To achieve a greater degree of MC, it must be implemented at all organizational levels in higher education (e.g., university, department). However, there is limited research documenting the specific frameworks of MC relating to the organizational infrastructure in higher education within the CSD field. The authors will synthesize empirical findings, summarize frameworks, and highlight resources that support organizational cultural competence at three different levels: university, department/program, and the individual. Additionally, the authors propose a model, **A**ssess, **P**lan, **T**ake action (APT) that can be used by CSD faculty to implement MC at all organizational levels within higher education.

Keywords: multicultural competence, organizational cultural competence, cultural humility, cultural competence in higher education

Embedding multicultural competence (MC) into the communication sciences and disorders (CSD) program is necessary to ensure instructors, students, and clinicians are culturally responsive when working with diverse populations. However, to achieve a culturally competent environment and prepare individuals in the CSD profession for a pluralistic society, MC must be addressed at the macro- and micro-levels of an organization within a university setting. Top-down (e.g., organizational cultural competence) and bottom-up (e.g., student and staff cultural competency) implementations of cultural competence are needed to facilitate an organizational practice of cultural humility and foster an environment in which individuals value and advocate for cultural diversity in various settings (i.e., work, academic and clinical). To foster MC, CSD faculty and staff must be familiar with cultural competency at all organizational levels.

To provide further clarity, it is necessary to differentiate the following terms: MC (i.e., cultural competency) and cultural humility. The terms MC and cultural competency can be used interchangeably and the authors purposefully chose to use the term MC to highlight the importance of the multicultural aspect. MC is not easily defined because of its multidimensionality (Sue, 2001), and how the term is defined can be considered limiting in scope (i.e., as a skill set to be studied and mastered versus ongoing learning (Ginsberg, 2018; Juarez et al., 2006). However, the American Speech-Language Hearing Association (ASHA) defines the term cultural competency as "…a dynamic and complex process requiring ongoing self-assessment and continuous expansion of one's cultural knowledge (ASHA, n.d., para. 3). Further, ASHA clarifies that

> Culture as a concept may represent a wide range of variables including but not limited to age, disability, ethnicity, gender identity (encompasses gender expression), natioal origin (encompasses related aspects e.g., an cestry, culture, language, dialect, citizen ship, and immigration status), race, religion, sex, sexual orientation, and veteran status. Linguistic diversity can accompany cultural diversity. (ASHA, 2017, para. 3).

MC requires that the individual is culturally aware and acknowledges cultural differences between oneself and others and that individuals identify with a variety of cultural identifies that may be visible (e.g., religious clothing and ethnicity) and invisible (e.g., sexual orientation and citizenship; Ortega & Faller, 2011; Sue, 2001). Comparably, cultural humility is the dynamic and continuous analysis of self-reflection to explore one's belief systems and biases, question power imbalances within working relationships and

institutions, and develop an attitude that promotes learning from others (Bradshaw & Randolph, 2021; Danso, 2018). The latter characteristic requires an individual to consider culture from others' perspectives and to acknowledge aspects of a culture they may be unfamiliar to them (Isaacson, 2014).

To cultivate an environment that supports MC and cultural humility, an organization should align goals and objectives (e.g., mission statements) that promote multicultural learning and interactions in people, policies, curricula, and activities (Keršienė & Savanevičienė, 2005). The organization must define a set of values and principles that support the behavior, attitudes, and structures across cultures (Center for Substance Abuse, 2014). The organization's valuing of diversity can be demonstrated by conducting assessments, effectively managing cultural differences, and adapting to the cultural needs of the community in which it exists. The dynamic relationship between the organization and its constituents (i.e., students, faculty, clients) allows for the creation and maintenance of MC at each organizational level. All constituents (e.g., faculty, staff, and clinicians) provide significant contributions to cultural diversity that must also include their ability to develop cultural awareness in knowledge and skills that relate to MC and cultural humility. To be the most effective, the support and resources of higher organizational levels (e.g., university, university) are needed. Figure 1 depicts the possible flow of MC within an organizational unit. It is proposed that addressing MC and cultural humility at each of these levels will allow for the cultivation of continuous multicultural learning in education and practice.

Figure 1
Depiction of the Flow of Multicultural Competence in an Organization
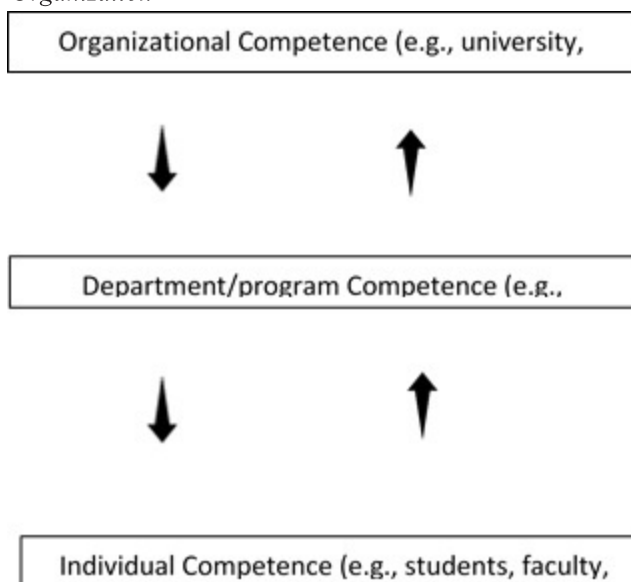
In pursuing cultural competence, organizations can look to Sue's (2001) multidimensional model of cultural competence (MDCC) for guidance. The MDCC model is presented in the context of a 3 x 4 x 5 cuboid design, which represents the multiple dimensions of MC and interactions. The primary dimensions of MC represented include race- and culture-specific attributes (e.g., African American, Asian American), foci (e.g., societal, organizational), and components of cultural competence (e.g., awareness, knowledge). Organizations can use this model as a guide for assessing multicultural competence by examining each area within the MDCC, creating a plan, and implementing the plan.

In addition to exploring the dimensions of the MDCC, organizations can integrate the four components of MC designated by Martin and Vaughn (2007). These components include awareness, attitudes, skills, and knowledge, which work together to create a synergistic effect (North Carolina State University, 2022, https://diversity.ncsu.edu/cultural-competence-toolkit/).. All levels of the organization should work to continuously improve the four components of MC (see Figure 2) especially individuals because they make up a large proportion of the MC that exists within an organization. It is important to highlight that these components may look slightly different at each level (e.g., awareness at the departmental level may include policies but self-awareness at the individual level).

Awareness consists of self-examination of one's culture and the culture of others. This includes acknowledging biases and stereotypes that exist about other cultures that may stifle learning and professional and personal development. Attitude encompasses the ability to be receptive to learning about and accepting the differences in one's culture and others' cultures. A positive attitude toward various cultures coupled with knowledge may facilitate constructive cross-cultural experiences. Knowledge requires gaining information about other cultures to decrease the degree of variance between beliefs and attitudes and actions. Research has shown individuals' increased cultural knowledge may not be congruent with their actual behaviors (Devine, 1989). It is vital to teach individuals how to recognize that personal behaviors towards groups (e.g., inappropriate labels/descriptions, offensive body language, and biased assumptions) can be connected to one's belief systems; only by cultivating a practice of transformative learning, that values diversity, can one's thoughts and behaviors be more synchronous with MC. Skills is a necessary added dimension that may sometimes be subsumed into the other dimensions (Alizadeh & Chavan, 2016; Sue, 2001). Skills require the individual to possess and practice a subset of skills when engaging in cross-cultural encounters.

Figure 2

Four Components of Multicultural Competence
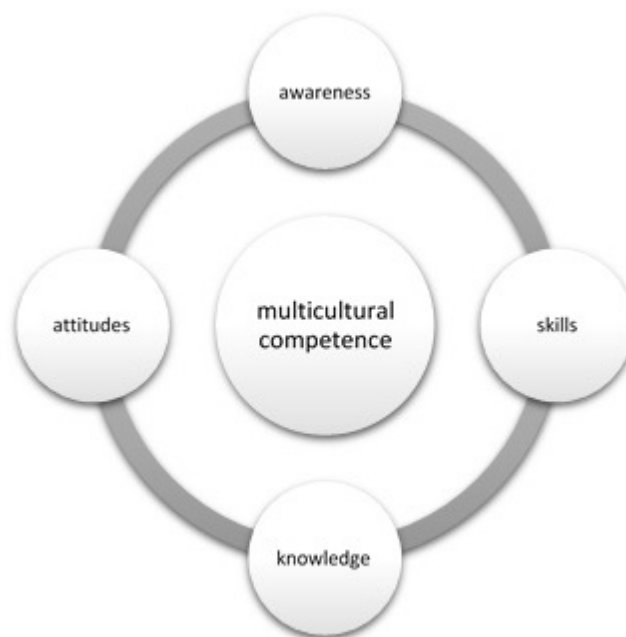
Engaging in MC at all levels of an organization is most likely to thwart the notorious ~isms (e.g., racism, sexism, ageism, colorism) and other discriminatory behaviors that create barriers to learning, thriving in a work environment, and providing culturally appropriate clinical services. Possible benefits of an organization that continually implements MC and cultural humility practices include a decrease in disproportionality in disciplines and increased knowledge of engaging with diverse clientele, colleagues, and students. Additionally, there may be an increase in diverse perspectives, personal development, and knowledge of world views.

It has been suggested that multicultural experience can contribute to increased creative thinking via "… recruitment of ideas from unfamiliar cultures for creative idea expansion and spontaneous retrieval of unconventional knowledge from memory" (Leung et al., 2008, p.7). Creativity is a needed skill in the field of CSD as clinicians may frequently encounter cases that challenge the implementation of traditional assessment and treatment procedures when providing MC services. At higher organizational levels, the administration may need to be creative when integrating, acknowledging, and respecting the cultural and linguistic views of faculty and staff during the planning of events and/or creation of policies and procedures.

Conceivably, modeling MC at the micro- and macro-levels will instill in CSD students and profession-

als the knowledge and skills necessary to implement or initiate culturally responsive practices at their current and future organizations (e.g., skilled nursing facilities, schools) or within organization departments. The following discussion will focus on the university, departmental, and individual levels in CSD as participation for all levels is required for effective, ubiquitous outcomes. The CSD profession as an organization will not be discussed in depth but requires a comprehensive analysis of policies, procedures, and staff to determine the essentials for the continuous improvement of MC. Accordingly, all organizational levels can design their procedures to fit the proposed APT model; that is each level should Assess, Plan, and Take action as it relates to implementing MC and embedding cultural humility.

It should be noted that implementing the APT model is an ongoing, cyclical process, which should integrate accountability at each level. Assessing requires analyzing current practices at each organizational level as it relates to MC and cultural humility. After the assessment process, planning should be implemented and consists of using assessment data to establish measurable goals. These goals should include the what, who, when, and how. This will help to facilitate more efficient goal achievement. Additionally, at the assessment level of each organizational level, a Strength, Weakness, Opportunity, Threat (SWOT) analysis or the Stop, Start, Continue, Change (SSCC) method (Hoon et al., 2015) can be conducted to gather information about the current state and implementation of MC and cultural humility. Taking action is an indispensable aspect of the APT model and requires the implementation of goals established as well as assessment of goal outcomes. The following discussion will outline specific targets that should be considered for the APT model at three organizational levels; university, department/program, and individuals in CSD. It should be noted that each organizational level consists of sublevels (e.g., staff and faculty, clinic), which should also employ the APT model especially as it relates to individual MC and cultural humility. A continuous example of the implementation of the APT model will be given for each level. Additionally, distinct examples of assessing, planning, and taking action for each level will be given.

University level

Promotion of MC on university campuses can result in positive, lasting impressions. Research suggests that increased interracial interactions facilitate leadership ability, cultural knowledge (dependent upon campus diversity; Antonio, 2001), and academic development (Astin, 1993a, 1993b as cited in Antonio, 2001). In turn, students are better prepared to enter a globalized workforce.

Assess

Policies, Procedures, Committees, and Constituents. Policies, procedures, administration, and service delivery that systematically involve clients and the community (Center for Substance Abuse, 2014) influence the climate of the campus and the implementation of MC. Therefore, these factors should be assessed for hegemony. In other words, consider whether the aforementioned factors have been evaluated or modified using a multicultural lens. One procedure that may be examined includes the orientation of campus personnel and students to a culturally inclusive environment. Policies at primarily White institutions (PWIs) that have not been altered may reflect content that primarily serves and provides advantages to the majority population (Hurtado et al., 1998). The effects of these policies may filter to the departmental level and should be examined at that level as well.

Examining committees that oversee and/or create policies and procedures related to MC and cultural humility for the university is vital. Committees should be created to examine the cultural climate of the university. For example, does the library have books on reserve with authors that reflect cultural diversity? Is the diversity present in university constituents reflected in university decor and marketing materials? Additionally, individuals serving on committees should assess their MC and cultural humility.

Budget. The budget and other monetary assets should also be examined to parcel resources for multicultural programs and other initiatives. Implementing multicultural awareness programs in higher education settings will require additional resources including finances, volunteerism from campus constituents (e.g., CSD faculty), and physical space for multicultural programs. The impact of these programs as well as other collaborative opportunities may lead to increased cultural interactions (Cheng & Zhao, 2007). Nevertheless, it is a consensus that solely diversifying the faculty or student population alone does not lead to MC (Hurtado et al., 1998) and strategic programs and other policies should be used to encourage interaction among students from diverse backgrounds (Cheng & Zhao, 2007).

Programs and Activities. Multicultural programs should be assessed for efficiency if they exist. If not, opportunities to establish programs should be evaluated. Such programs may help to quell biases and microaggressions in addition to reducing hostile environments for students, faculty, and staff from multicultural backgrounds (Grapin & Pereiras,

2019). College and departmental level degree programs can also be evaluated to determine how and to what extent MC and cultural humility are implemented. Programs and activities aimed to increase MC can impact structural diversity and retention and recruitment of culturally and linguistically diverse (CLD) faculty and students (see below).

Recruitment and Retention. Recruitment and retention at the college and departmental levels should also be examined. Recruitment of minority students and faculty has been a longstanding issue in higher education (e.g., Larke, 1987; Pruitt & Isaac, 1985; Toretsky, 2018; Writer, 2019) especially in the CSD field (Nuruz et al., 1992 as cited in Saenz, 1998). The number of minority members of ASHA has only risen 1% in the past 24 years (ASHA, 2021). Recruitment and retention efforts should be analyzed to determine the level of structural diversity and strategies to recruit and retain students from diverse backgrounds (Soria et al., 2015). Increased structural diversity may allow students to gain knowledge and experience diversity at all organizational levels via formal and informal interactions (Gurin et al., 2002). Retention efforts should include examining available civic engagement activities that may also contribute to the development of MC and cultural humility. Recruitment of minority faculty should also be examined. There is ample evidence to support racial and ethnic student-teacher matching (e.g., Cherng & Halpin, 2016; Egalite et al., 2015; Grissom et al., 2017). Additionally, retention of minority or CLD students and faculty should be analyzed as retention will continually support growing structural diversity at a university. There is data that suggests the recruitment of CLD faculty serves to promote program recruitment and academic achievement of CLD students (Boser, 2014; Cherng & Halpin, 2016; Grissom et al., 2017). Students who identify with similar ethnicities/race as the faculty members (i.e., race-congruent matching) demonstrate higher rates in academic success (Dee, 2004; Egalite et al., 2015), increase in positive teacher expectations (Fox, 2016) and lower rates of academic misconduct (e.g., detentions and suspensions; Holt & Gershenson, 2015).

Plan

Policies, Procedures, Committees, and Constituents. Following the assessment process, a plan and measurable goals should be created to reflect the findings that address policies, procedures, and constituents. The plan should consider Rhoads and Black's (1995) proposed seven principles that can serve as a foundation to help higher education settings to decrease instances of bias incidents for CLD students. The principles include the following: "(a) creating organizational systems, (b) building

empowering social/cultural settings, (c) developing communities based on commitments to democracy and ethic of care, (d) setting conditions to support decision-making inclusive of diverse faculty, staff, and students, (e) respecting cultural differences, (f) treating students as equals in developing just and caring academic communities that influence society, and (g) embracing conflict in striving for transformative academic communities (pp. 418–419)." Embedding these principles into the plan is likely to increase MC in higher education settings. For example, each principle has potential effects on the scholarship of teaching and learning and student achievement throughout university matriculation.

Considerable thought should be put into planning for committees that would contribute to increased MC at the university level. For example, establishing a goal related to the creation of a diversity, equity, and inclusion (DEI) committee at each organizational level within the university/university would be favorable. More importantly, DEI committees at each organizational level should coincide to increase effectiveness. Members should have adequate training and knowledge of MC.

Committee members should assume levels of individual and community accountability to ensure goals related to MC are met. Community accountability is efficient in team settings in which all members are working toward achieving similar goals (Knowledgeworkx, 2018). Effectively implementing community accountability may result in a nurturing environment in which individuals feel safe to ask for help and/or address sensitive issues.

Budget. Budget planning occurs at all organizational levels and is necessary to help facilitate programs and other initiatives to support MC and cultural humility growth on university campuses. Budget committees at each level should include a plan to parcel funds for activities, procedures, and programs among others that are related to increasing MC and cultural humility. The budget plan should be developed prior to the beginning of the fiscal year to ensure consideration prior to the implementation of initiatives. Denial of funding can be circumnavigated by applying for outside funding such as grants, scholarships, or private donors. During the planning process, linking budget needs with the university's strategic plan may increase the likelihood of funding. Another aspect to ponder is hiring minority-owned businesses to provide materials, services, or trainings as needed. It may be that these businesses are able to provide services and products that are more relatable to students from diverse backgrounds.

Programs and Activities. Programs should be planned thoroughly to ensure successful imple-

mentation. Including representation of all relevant constituents (e.g. program directors, students, administrators) is vital to the planning process. Some considerations should include creating measurable goals that address MC and cultural humility. Specific timelines and accountability measures should be included in the plan. Planning programs and activities may be costly; therefore, individuals planning should consult the budget and work closely with the budget committee to ensure funding is available to maintain or create programs and activities.

Recruitment and Retention. Individuals responsible for recruitment and retention should evaluate assessment outcomes to help develop a plan and goals to increase the diversity of administration, faculty, staff, and students. It is especially important for CSD faculty to be included in this process given the minimal number of minorities in the CSD field. The plan should include input from individuals at all organizational levels including the community. For example, minority alumni and current students could take part in the planning and implementation processes. Additionally, recruitment and retention activities should be planned in coordination with the Office of Multicultural Affairs or related divisions.

Take Action

Policies, Procedures, Committees, and Constituents. Implementing the plan can occur in multiple instances. MC of higher education personnel can be targeted by utilizing human resources management functions such as selection, training, development, appraisal, and motivation. Developing empathic awareness skills may be effective for personnel training at all organizational levels. Recent findings revealed this type of intervention decreased the use of implicit biases by White teachers toward Black students (Whittard & Emerson, 2019). Additionally, the inclusion of a multicultural course as a part of the orientation process for faculty, students, and staff may result in reduced implicit racial biases (Castillo et al., 2007; Keim et al., 2001).

In order to ensure a sincere commitment to the process of MC, accountability measures may be necessary. Accountability processes may facilitate the implementation and teaching of MC within courses and program curricula (Quaye & Harper, 2007). These processes may include the implementation of personnel evaluations that assess MC practices or rubrics that assess the effectiveness of the integration of MC at the university level. When transitioning from MC to cultural humility, one must assume personal accountability when challenging university policies that may impact marginalized groups (Fisher-Borne et al., 2015).

For example, modifying admission policies may result in increased diversity and improve recruitment. Several studies have suggested that the requirement of standard scores only as an admission prerequisite may be biased against CLD students (e.g., Scott & Shaw, 1985). Standardized scores such as the SAT or ACT are better predictors of the achievements of White students rather than CLD students (Silverman et al., 1976) and present a cultural bias when exclusively used as an admission requirement (Woollen, 2008). This bias with standardized assessments extends into various cultural veins that can also include interpretation bias against multicultural students who are bilingual, but may not consider English their native language (Padilla & Borsato, 2008). Further, standardized exams are largely based on a dominant social culture (e.g. reading Mark Twain in American literature) which can be problematic for students that maintain a diverse cultural identity and practice of beliefs (e.g., students of immigrants) and have chosen not to fully acculturate with the mainstream American culture (i.e., acculturation bias; Portes & Zady, 2001; Kim & Zabelina, 2015). Admission procedures at the department/program level should also be adapted to facilitate the increase of CLD individuals in the field (Frierson, 1991; Guinier, 1997). There is also evidence that including a measurement of creativity may reduce bias in university admissions (Kaufman, 2010).

Budget. The budget should be executed according to the budget plan. Justifications for budget items requested should be created and provided to the appropriate budget committee. This may increase the chance of the funding being provided for the initiatives proposed. Once budget expenditures have been completed, data should be collected from initiatives implemented to provide support for future budget requests. Data may also provide useful information about the impact of initiatives implemented on MC and cultural humility.

Programs and Activities. Higher education settings should provide opportunities and programs for white and non-white students to interact (Cheng & Zhao, 2007). These opportunities may consist of cultural organizations, student government, and volunteer/community service groups. Increased interactions between students may result in richer learning experiences and increased cognitive and affective development. However, university programs should be cautious in forcing interactions as that may prove to inhibit successful cross-cultural interactions among students. In a recent study, the implementation of a virtual multicultural intervention program resulted in increased multiculturalism of university students (Black & Li, 2020). Furthermore, the intervention proved to be timesaving and inexpensive. Peer men-

torships for faculty and students can prove promising and have a positive impact on retention (e.g., Good et al., 2000; Williams et al., 2020; Zambrana et al., 2015).

Recruitment and Retention. The programs and activities discussed above can impact recruitment and retention of CLD faculty and students. Student initiatives that may have a positive impact include summer enrichment programs, curriculum change and enhanced program offerings (Snyder et al., 2015), and financial support (e.g., scholarships and grants; Proctor & Romano, 2016). Other initiatives include developing and implementing cultural and social recruitment, orientation, and welcoming activities, providing additional support for financial aid and funding, increasing minority faculty, and offering culturally related events and activities throughout the school year.

For faculty, procedures should be put in place to provide support such as peer mentorship, social activities, and Administrators should address concerns from minority faculty as it relates to promotion, tenure, and other teaching duties (Whittaker et al., 2012)

Equipped with the above knowledge, CSD faculty participating in university-level committees and contributing to the creation of related procedures and policies can be more effective in integrating MC and cultural humility from a top-down level to the CSD department.

Departmental Level

This section reflects CSD department or program structures. The APT model can be modified to fit either structure; the departmental structure will be used in the current discussion. Clinical experiences are vital to CSD departments. The governance structure of the clinic may be embedded with or be separate from the department's structure. For example, some CSD have a university-based clinic; whereas other departments may solely use off-campus clinical sites to provide clinical curriculum. Consequently, the APT model for the clinic can be implemented independently or in tandem with the department's APT model. It is important to note processes occurring at the departmental and individual levels may appear somewhat indistinguishable. This is because the constituents (e.g., department chair) at the individual level are responsible for and implements the processes discussed in the APT model. For example,

The disproportionality of racial groups within the CSD profession is not reflective of the clinical population (ethnic groups) being served (See Gregory, 2020). This may also present challenges in achieving MC, which requires an individual to spend time with a person from another culture or to become submerged in another's culture (Crigger et al., 2006). The levels of organization within culture as it applies to the health system (Kirmayer, 2012) can be applied to the CSD department. These levels include systems (i.e., ASHA and state-licensing boards), training and composition (i.e., academics), and models of care (i.e., clinic). Although not a focus of the current review, ASHA has a direct influence on the MC that occurs at the departmental level. This influence is realized in certification and accreditation standards. Developing culturally competent programs at the department level should also occur in both a top-down and bottom-up fashion. Departmental administration should set aside funding, create a diversity and inclusion committee, and facilitate a positive, encouraging climate for MC to exist.

Assess

Procedures and Policies. Assessment at the departmental level should include evaluation of constituents, organizational structure, and procedures. Procedures should be put in place to ensure that administration, faculty, staff, and students are aware of their levels of cultural competence, which can take the form of completing MC surveys or checklists and self-reflections can be implemented. Surveys such as the Implicit Association Test (IAT) can also be administered to increase awareness of constituents' biases against other cultural groups (Adams et al., 2014; Greenwald et al., 1998). Additionally, ASHA has made a series of surveys (e.g., Service Delivery, Personal Reflection) available that can be used to assess MC. The Policies and Procedures survey can be amended as needed by departments to assess cultural awareness (ASHA, 2010). Is important to note how other organizational levels (e.g., university, ASHA) policies and practices may facilitate or impede multicultural development (Sue, 2001); this analysis could reveal changes that need to be made and highlight the need for intervention at the departmental and individual levels.

An analysis of the departmental budget, similar to the university organizational level, may need to be completed to determine whether funds are available to support current and new initiatives.

Curriculum. An evaluation of course content and curricula may need to occur as it relates to the conceptual and theoretical framework. There are many conceptual and theoretical frameworks that guide practices within the psychology and CSD fields (Sue, 2001). Therefore, the following question should be considered: How do theories embedded from a predominately European perspective impact teaching and subsequently clinical practices? This is espe-

cially important in CSD, a predominately white field that lacks diversity in students and professionals.

Assessing how MC and cultural humility are addressed across and within (i.e., infused or separate courses) courses in the curriculum is warranted. Infusion or separate courses alone may not be efficient (Randolph and Bradshaw, 2018). When assessing courses, observing the occurrences of microaggressions and implicit biases should ensue. Microaggressions can prevent student success and affect matriculation in a program (Murray, 2020). It is also useful to assess the faculty's knowledge of teaching and implementing principles of MC and cultural humility to support faculty's learning needs and provide support (2016).

Student Organizations. The need for multicultural related student organizations within the department should be assessed. For the creation of student organizations, students could be surveyed to determine the level of MC and cultural humility engagement needed to excel and feel a sense of belonging. The current policies, procedures, and by-laws of current organizations should be assessed for inclusion of MC and DEI principles.

Plan

Procedures and Policies. Following a comprehensive assessment of current practices at the departmental/program level, strategic planning should ensue to address areas of weaknesses that initiate or modify plans for nonexistent or current policies and procedures. One example could include the data from a strengths, weaknesses, opportunities, and threats (SWOT) analysis to fortify strategic planning. All plans created should coincide with university-level plans including MC, if they exist, and with the policies of our governing organization, ASHA.

Curriculum. A plan should be created to determine how to expand multiculturalism and DEI in the current curriculum. Curriculum planning should ensure that MC and cultural humility are addressed for the broad nine topics (e.g., speech sound disorders, fluency) required to be incorporated in the CSD curriculum. For example, dialect should be addressed in speech sound disorders and transgender vocal training should be addressed in voice. A plan to invite guest speakers from various multicultural groups can be established to achieve the best outcome.

Student Organizations. The student organization for CSD, the National Student Speech-Language Hearing Association (NSSLHA), can provide increased opportunities for cross-cultural interactions between faculty and students and may facilitate student success. Local NSSLHA chapters can be organized to serve as allies and as a support system for CLD students. A subcommittee within NSSLHA chapters can be created to support the training and implementation of MC for students. Alternatively, new organizations can be created to support CLD students, which may help to create a more inclusive atmosphere. Community outreach activities could also provide opportunities for NSSLHA members to interact with individuals from diverse backgrounds; members should receive training in MC prior to engagement.

Take Action

Procedures and Policies. If weaknesses are found as a result of the SWOT analysis or SSCC method, they should be addressed in the strategic plan (e.g., measurable goals). This includes embedding a DEI statement in the department's and clinic's mission statements. When possible, weaknesses can be alleviated using the identified strengths and opportunities from the SWOT analysis. For example, if the strength is a course in which there are minimal instances of biases and microaggressions as well as ideal implementation of multicultural education, it could be used as a platform to begin peer mentorships within the course. Additionally, the course could serve as an ideal example for other faculty to observe. Although it is essential to address weaknesses, attention should be given to identified strengths as well including maintaining and continuing to build upon them. Adding the above actions as standard procedural teaching or including them in departmental policies would help to ensure these actions are implemented in perpetuity.

Though not a direct relation to teaching and learning, a budget should be created with a plan on how to spend funds effectively to support the implementation of MC in the CSD department. For example, training faculty staff and hiring faculty with expertise in MC may be costly. Additionally, funds will be required for the recruitment and retention of students and faculty from diverse backgrounds. These processes may require advertisements, travel, and other budget-depleting processes.

Curriculum. It can be argued that CSD, like psychology, is a culture-bound field of study (See Sue 2001); similar theories serve as a foundation for both fields. Integrating theories from other cultures may prove more culturally relevant when implementing clinical services. Although the professional level is not specifically discussed in the current article, it deserves a thorough review of historical and philosophical artifacts and procedures to assess cultural boundaries since professional level practices filter down to the departmental level.

It is vital that MC is taught as a part of the curric-

ulum, but it is just as important to address instances of explicit and implicit biases that may occur with student-to-student and teacher-to-student interactions in the classroom setting (Boysen et al., 2009). Procedures effective for addressing biases include utilizing culturally responsive teaching practices, measuring the effectiveness of responses, and sharing learning experiences with other professors (See Bradshaw & Randolph, 2021). Increasing awareness of biases (teachers and students) and providing scaffolding to address these interactions may deter CSD students from engaging in biases with clients, especially during the MC process. Integrating anti-oppressive practices (AOP) into the curriculum is another strategy that can be utilized (See Young et al., 2021 for more descriptive details). AOP can also be taught and embedded into clinical practices such as the family interview procedures that is vital to the evaluation process.

CSD study abroad programs provide strategic opportunities that can support culturally responsive teaching, as well as to supplement scholarship of teaching and learning (SoTL) activities. Participating in service-learning study abroad programs has been proven to increase CSD students' s cultural awareness (de Diego-Lázaro et al., 2020; Kitsantas & Meyers, 2001; Stanford & Gay, 2017), competence, and self-efficacy (de Diego-Lázaro et al., 2020). Sass (2013) created a survey that can be used to measure gains in students' multicultural competence before and after completing a study abroad program. Although study abroad programs are beneficial, cross-cultural interactions can occur in one's community via service-learning activities (Goldberg, 2007). These interactions can be as beneficial as study abroad programs in increasing multicultural competence. A recent article outlined the benefits of a community program, Project Tapestry, which allows students to interact with clients from diverse backgrounds (Quach & Tsai, 2017). Some benefits may include increased MC and the ability to provide culturally and linguistically appropriate clinical services.

Student organizations. The department should support the development of new student organizations. This support may be presented in the form of funding to provide training in MC and cultural humility to the leadership teams and advisors of student organizations. Advisors should ensure student organization leaders and members address the principles of DEI in the organization's by-laws, procedures, and policies. This inclusion can range from planning activities for holidays that represent all student cultures to planning community outreach for ethnic and/or underrepresented populations.

Clinic

The clinical aspect of the CSD department/program is essential as it presents an opportunity for graduate students to provide services for community members which may be similar to the clinical population they will serve as future clinicians. Clinical services, as they relate to MC, can be subsumed into the procedures implemented by the department; however, care should be taken to consider the intricacies of providing clinical services and should include the community to provide feedback. For example, engaging in a local lesbian, gay, bisexual, transgender, questioning, intersex, and asexual (LGBTQIA) community may help graduate students understand the perspectives of clients requesting transgender voice and communication services (Goldberg, 2019).

Assess. Assessment of MC and cultural humility at the clinic level should include how the former is integrated into the various aspects of the clinic (e.g., environment, clients, supervisors). Additionally, cultural responsiveness of the treatment environment should be assessed to determine diverse structures ranging from graduate clinician MC and cultural humility to strategies used to serve diverse populations. MC in the triadic relationship between the supervisor, supervisee, and client should be assessed. Are MC and cultural humility practices being implemented consistently and with fidelity? All constituents in this relationship should be queried about their level of comfort and engagement with MC and cultural humility. The clientele demographic should be assessed to determine whether marginalized groups are being provided with clinical services and whether marketing strategies address and reach these groups.

Plan. Creating a plan would allow marginalized groups that normally would not visit the clinic to receive needed services. However, multiple aspects of providing the service would be need to be considered during the planning stages such as finances, liabilities, and avenues that can be used to provide services. MC and cultural humility goals for the clinic can be embedded in the department's strategic plan.

A plan should be created to allow graduate clinicians to experience practicing with a diverse population as required by ASHA for certification and CAA for accreditation. Additionally, planning should be considered for supervisors and graduate clinicians after completing surveys related to MC.

Take Action. Opportunities should be provided to engage in multicultural counseling in all clinical services and these services should be reflective of the culture within the community being served (Bradshaw & Randolph, 2016). Moreover, a culturally responsive treatment environment should be established. Categories of tasks to consider when creating culturally responsive environments include the

following: (1) organizational values, (2) governance tasks (e.g., choosing a culturally diverse and competent advisory board, (3) planning tasks (e.g., strategic collaborations), (4) evaluation and monitoring (e.g. examine practices used to provide MC services, (5) language services tasks, (6) workforce and staff development, and (7) organizational infrastructure (e.g., create outreach strategies to reach underserved populations). See Center for Substance Abuse for a full review (Linkins et al. 2002).

Clinic personnel should be a reflection of the diversity present in the surrounding communities. Care should be taken to learn about the cultures in the community as faculty, staff, and students strive to increase their cultural humility. For example, ethnic matching can be implemented to train students and supervisors in specific cultural knowledge and may result in increased communication and trust between the provider and client (Kirmayer, 2012).

Marketing strategies should be created to target individuals in the community from marginalized groups. Moreover, developing approaches to provide services to these individuals is essential. This could include teletherapy or mobile service delivery.

To facilitate a diversity-friendly environment, changes in the structural representativeness, increased access to clinical services, and culturally relevant services are warranted. This may translate to including individuals from diverse backgrounds in photographs used in décor, marketing materials, or on the clinic's website. This may occur in the context of mobile services or telehealth (Fairweather et al., 2017). Finally, providing culturally relevant services are necessary to ensure the highest quality of care and create an inviting environment for clients. Choosing culturally relevant materials when providing service is one example (Hammond, 2019). Ensuring that pictures depicted in materials used coincide with the client's cultural background may increase the quality of services provided and create a diversity-friendly atmosphere for the client.

Individual Level

As constituents continually develop cultural competence, so do the organizations in which they exist. Individuals may willingly acknowledge biases present at other organizational levels; however, they may not acknowledge personal biases, which may prevent personal growth and increased MC (Sue, 2001). Becoming culturally competent requires an individual to acknowledge biases, be honest, and be receptive to the hopes, fears, and concerns of all groups within a society (Gregory, 2020). Students, faculty, and staff may benefit from the effective implementation of MC in CSD. For example, students are more like-

ly to complete their program, form lasting relationships, and be better prepared to provide services in a pluralistic society. Faculty from diverse backgrounds are more likely to be retained.

Assess

There is an abundance of literature that supports faculty teaching and creating inclusive environments for students and teacher biases (Fuse & Bergen, 2018; Ginsberg & Mayfield-Clarke, 2021; Lee & Carrasquillo, 2006). However, few studies address students' cultural sensitivity and cultural biases toward professors (e.g., Basow et al., 2013; Lee & Janda, 2006). These biases should be analyzed as they could impact faculty-student relationships, faculty effectiveness, and student achievement in a course. Faculty-student relationships are essential as they create the climate in which teaching and learning take place. An environment lacking in cultural inclusivity may inhibit teaching and learning processes. A recent study found that Black students may be less likely to agree with their professors that they have low effort (Kozlowski, 2015). On the other hand, teachers are likely to have a biased, positive attitude toward White and Asian students in comparison to Black and Hispanic students. Self-evaluation should be a part of the assessment process. Humans are not impartial beings.

At the departmental and individual levels, assess opportunities for individuals to interact with people from a variety of cultural backgrounds; this will involve administrative processes set up by the department and participation from individuals by assessing and reporting their interactions. The assessment should include evaluation of peer mentorship opportunities and effectiveness for faculty and students. For example, do faculty and students interact with others from different cultural backgrounds? If so, what is the nature of the interaction or relationship that these individuals have? Individuals should query their contribution to the successful implementation of MC and cultural humility as it serves as foundation of all organizational levels.

Finally, assess avenues that CSD constituents can use to share experiences, report grievances, and provide comments about positive cultural encounters. CSD constituents should analyze their MC and cultural humility. This is a vital process in ensuring MC and cultural humility pervades all organizational levels. These procedures can help to increase personal accountability in progressing toward MC. International or CLD students may not feel accepted as they may feel ignored and experience cultural intolerances such as verbal insults and confrontations (Lee & Rice, 2007). Addressing these issues may be present-

ed as an advantage during the recruitment and retention of underrepresented individuals in CSD.

Plan

Strategic planning on how to embed cultural awareness and knowledge for individuals within the CSD department is essential. As such every individual in the department should have the opportunity to contribute to the plan. Plans to address issues that may occur within the department such as implicit and explicit biases, microaggressions, and lack of infusion of cultural content in courses will create a culturally responsive environment for individuals.

Take Action

Peer mentorship, which facilitates the growth of faculty and students, may result in positive outcomes (Kosoko-Lasaki et al., 2006). However, formal training should be provided to the mentor to increase success (Zambrana et al., 2015). Peer mentorship for CLD faculty may contribute to the increased recruitment and retention of CLD faculty (Lewellen-Williams et al., 2006). It should be noted that ASHA offers mentorship to CSD students through the S.T.E.P. program, which claims to facilitate the recruitment and retention of underrepresented students. The National Black Association for Speech-Language Hearing (NBASLH) also offers a mentorship program to Black students and faculty. There are also other multicultural constituency groups (MCCGs) associated with ASHA that support various cultural groups that may offer mentorship as well and include the Hispanic, Asian Indian, Asian Pacific, Haitian, L'GASP–GLBTQ, Hispanic, and Native American caucuses. Although these MCCGs offer a wealth of resources and support, mentorship at the departmental level may prove beneficial as well.

Establish informal and formal procedures for students, staff, and faculty to report cultural misappropriations or biases if they do not currently exist. Students may be more apt to use informal rather than formal procedures to report grievances. Bias response teams can be formed to receive grievances; however, more research is needed to improve the effectiveness of such teams (LePeau et al., 2018; Miller et al., 2018). Bias response teams are responsible for providing support for individuals filing reports and engaging involved individuals in educational conversations. Additionally, teaching individuals how to effectively respond to implicit biases and microaggressions may empower them (Sue, 2020). Bias response teams can be included at any of the organizational levels.

Specific training of students, faculty, and staff as it reflects personal MC and multicultural competence

as it relates to CSD is essential. If training occurs as a part of a multicultural course, the professor will need expertise in the area of MC. Transformative learning, which is the "… action of closely inspecting one's beliefs, values, and assumptions in order to gain understanding and developing new knowledge" can be integrated into training methods to increase the effectiveness of learning (cited in Bezard & Shaw, 2007, p.37). In a recent study, the use of transformative learning was found to increase cultural competence in instructors and resulted in a positive effect on students (Bezard & Shaw, 2017). Faculty can include goals related to MC and cultural humility in scholarship, teaching, and/or service sections of their annual faculty reports.

Conclusion

In conclusion, each of the organizational levels works to value diversity, conduct self-assessment, manage the dynamics of difference, acquire and institutionalize cultural knowledge, and adapt to diversity and the cultural contexts of the communities they serve as facilitated by the implementation of the APT model. Each of the above values and principles should be incorporated into policy making, administration, practice, service delivery, teaching, and student engagement (National Council for Cultural Competence, 2009) as historical perspectives may reveal culturally bound processes and policies. MC practices at all organizational levels are essential for teaching, learning, and implementing MC during clinical practices in CSD. Utilizing the APT model may allow CSD faculty to effect change at all organizational levels within the university. Although not discussed in this article, implementing MC at the college level is essential as well. Many of the same processes and procedures (e.g., forming a diversity, equity, and inclusion committee) discussed above can be integrated into the APT model and applied.

Cultural diversity is not a novel construct, but research in cultural diversity as it relates to our field is relatively still in its infancy, particularly as it relates to the university and organizational aspects of CSD in higher education. It is imperative that all CSD faculty (i.e., clinicians, educators, researchers, and administrators) and students are held accountable to practicing MC and promoting cultural humility in the many facets of the CSD field. This will help to ensure the top-down and bottom-up implementation of MC is effective in all units within the university including the CSD department. CSD faculty are strongly encouraged to examine the APT model and examples given in the current paper, modify the examples to fit their university as needed, and facilitate implementation at all organizational levels in higher education.

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LACK OF AWARENESS OF SPEECH-LANGUAGE PATHOLOGY IN UNDERGRADUATE STUDENTS: WHAT CAN WE DO?

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— ABSTRACT —

Purpose: The field of speech language pathology is one of the least diverse professions in the United States. There have been attempts to address the diversity and inclusion gaps, but numbers are still drastically low. One assumption is that historically underrepresented students are unaware of the field as they begin their educational journeys. The present study examines whether undergraduate students at a Hispanic Serving Institution (HSI) are aware and knowledgeable about the field of communication sciences and disorders (CSD).

Method: Undergraduate students were surveyed to explore their awareness, knowledge and interest in speech language pathology (SLP). Sixty-seven students completed the survey online, including 55 freshman students of diverse backgrounds.

Results: Preliminary findings suggest that only 31% of students surveyed were aware of the field of CSD. Of the freshmen students, only 16% students reported hearing speech-language pathology.

Conclusion: This preliminary study supports the hypothesis that many historically underderrepresented students lack awareness of the SLP career option as they enter college. The study provides insight into areas to target for increasing diversity of the field. The implications for outreach, mentorship, recruitment and retention are discussed.

Keywords: awareness, recruitment, retention, outreach, diversity, students

The profession of speech-language pathology has been highly rated as one of the "Best Health Care Jobs" by the U.S. News & World Report (2020) over the last several years. Even with this high ranking, the knowledge of the field and services provided by speech language pathologists (SLPs) are often unknown to the general public. There is limited literature on the knowledge and awareness of the field of SLP by the general public in the United States. Recent polls found that public knowledge and awareness of SLP and audiology services is limited. Specifically, people are unsure where to go to seek care for speech and language difficulties (ASHA, 2022), with 25% of people reporting no confidence in where to go for support. Interestingly, for those respondents who experienced services from audiologists or speech-language pathologists, over 75% reported a high level of satisfaction with the care they received (ASHA, 2022). More often, allied professionals are assumed to have more insight on SLP and audiology services, but the literature is still weak. Recent work, examining public awareness and knowledge found similar trends internationally in New Zealand (Paily, 2020) and Malaysia (Tang & Chu, 2021) where awareness is minimal among the general public.

While the profession has been ranked positively, further complicating the lack of general awareness is that the profession has also been ranked as one of the top five least diverse in the United States (Thompson, 2013). The intersection of issues contributes to the multilayered challenge of increasing representation within the field. As of December 2020, 188,143 SLPs were certified in the United States. Of those certified SLPs, 91.6% were reported to be white, and 8.5% represent an underrepresented racial minority group (ASHA, 2021). When looking at the breakdown of SLP backgrounds more closely, ASHA reports 6.1% of SLPs identify as Hispanic/Latino, 3.6% as Black/African American, 3.1% as Asian, 1.4% as multiracial, .3% as American Indian and 0.2% as Native Hawaiian or other Pacific Islander (ASHA, 2021). Similar demographic trends are often seen in university Communication Sciences and Disorders (CSD) programs as well (CAPCSD & ASHA, 2021). If we are collectively working to train clinicians to serve diverse clients in their communities, these statistics leave us questioning why the numbers of SLPs and students from diverse backgrounds are still so low? Are there specific systemic barriers impacting students? Is it lack of awareness and education about the career path? Is it both?

Systemic Educational Barriers

A college degree is often touted as the great equalizer, wherein those who obtain a bachelor's degree have significant social and economic mobility. Re-search illustrates this to be a somewhat faulty narrative, however, as institutions of higher learning often perpetuate racist practices, since higher education is inherently unequal in its makeup (Ching, 2013). As institutions of higher education were originally built to educate white men with financial means (Wilder, 2013), the systemic structures students navigate today are largely unchanged and center on these populations. Those who do not align with majority demographics continue to face barriers and challenges navigating the higher education landscape resulting in historically underserved and underrepresented students often facing additional barriers in higher education settings (Ellis & Kendall, 2021; Wong et al., 2021). For example, low-SES status often impacts a disproportionately higher number of underrepresented students, requiring many to work to support themselves and their families. Further, working students are more likely to make financial decisions that might negatively impact their academic experiences, with the decisions creating more barriers to success and delays in graduation (Soria, Weiner & Lu, 2014).

Research has demonstrated the challenges and barriers facing Black students and other students of color on campuses throughout the United States. Even as institutions have become significantly more diverse in recent decades (Carnevale & Strohl, 2013), students of color are navigating systems not originally intended for them. This results in students navigating "chilly or hostile campus climates" (Gusa, 2010, p. 466), a sense of isolation and alienation (Hurtado, Cuellar & Guillermo-Wann, 2011) and faculty expectations based on an unequal system (Chavez & Longerbeam, 2016).

Classroom environments and interactions with faculty greatly influences a student's academic success. Campus racial climate, including within the classroom, impacts feelings of belonging, with students of color being more academically successful when they experience less racial tension within the academic environment (Hurtado et al., 1999). Race ultimately shapes institutional culture, directly contributing to the experiences of students of color in navigating these spaces (Allen, 1992; Harper & Quaye, 2015; Milem, Chang & Antonio, 2005; Museus & Quaye, 2009; Patton, 2016). Willis and colleagues (2019) found Black female students enrolled at a Hispanic Serving Institution (HSI) felt a sense of being "only and othered" within the classroom, boxed in and silenced, and a need and desire to find campus support. Students expressed challenges in the lack of representation among peers and faculty and its impact on not feeling validated as a student of the institution.

Positive classroom environments directly contribute to the academic success of a student. Hurtado et

al. (2011) describes how students "feeling empowered by faculty to learn is directly related to the academic validation they report in the classroom" (p. 67), which critically impacts other academic outcomes. Should a student not feel appropriately validated nor have a positive classroom experience, their GPA may be impacted. Reviewing faculty's use of constructive criticism and its impact on the academic success of students of color, Cole (2008) found academic performance (overall GPA) of students of color is more likely to increase when they are "challenged, have safe student-faculty interactions, and experience a sense of belonging to the academic community in which they participate" (p. 599). Students sought faculty who simultaneously challenged, yet supported them through their learning. Faculty must foster classroom environments that are inclusive, welcoming, and supportive in order to ensure success of all students.

Systemic Barriers Impacting Students of Color in CSD Programs

As the field of communication sciences and disorders (CSD) continues to expand, there are additional important factors to consider when analyzing the lack of diversity in the field. Some of the challenges that students face could be attributed to the fact that attending college and graduate school is often competitive, costly and time consuming. For example, nationwide there are a total of 290 institutions offering a master's degree in the field of speech-language pathology (ASHA, 2020). In the academic year of 2020-2021, 58,093 graduate applications were received for SLP Master's programs but only 38.7% were offered admission, with mean GPAs of admitted students ranging from 3.11-3.98 (ASHA, 2021). According to the 2021 CSD Education Survey, of those students offered admission, 21,241 students enrolled in a graduate program, with 25.9% of the first-year students identifying as an ethnic/racial minority and 4% identifying as male (CAPCSD & ASHA, 2021). According to the CSD Education Trends report, the percentage of historically underrepresented students enrolled in speech-language pathology master's programs have mostly trended upward in the last 10 years from 13.6% in 2010-2011 to 25.2% in the 2020-2021 academic year (CAPCSD & ASHA, 2021).

While the numbers seem to be increasing, it is important to remain mindful of the challenges with the limited number of acceptances overall, combined with the lower proportions of students from historically underrepresented backgrounds in programs. There is still a significant need to recruit, support, and retain historically underserved and underrepresented students. Without this action, our profession will continue to remain in need of change to reflect the communities we service.

The lack of information about backgrounds of who is applying to the graduate programs complicates this issue. With limited access to data on admission applications, it can only be assumed that underrepresented students are applying to programs, but the information on the rates of applications is unclear. Additionally, a barrier to many is that the application, transcript and testing fees are costly and may impact students' ability to apply to multiple programs, and for many, over multiple years.

Another issue that has been raised is the lack of support from others, including peers and faculty, during both undergraduate and graduate years. In one survey of African American SLPs, many reflected that they had felt isolated amongst peers in their courses and experienced microaggressions during their education, contributing to a lack of belonging and challenges being successful in the classroom (Ginsberg, 2018). In contrast, some participants of the study shared that they received full support from faculty members from various ethnic backgrounds throughout their program (Ginsberg, 2018).

Students and professionals of color often face microaggressions and other racism as they navigate the field. A recent study found that over 64% of students who participated in the study experienced microaggressions in their academic programs (Abdelaziz et al., 2021). During the ASHA listening sessions of 2020, many SLPs of color shared their personal experiences in navigating the systems that are in place, as well as the lack of representation in the academic programs and in the workplace. Some SLPs even shared their experiences of being discouraged by certain faculty during their academic programs. The lack of representation, discouragement and microaggressions impact those seeking advancement in the field. These experiences are contributing to some of the bottlenecks students are already facing in academic settings.

Research suggests that there needs to be more public education about the CSD field in general, to increase awareness to students (Byrne, 2010), and the community at large. Byrne's study found that students in Australia were choosing other major and career options due to limited knowledge of CSD, feeling the field was "too specific" or hearing "negative comments about SLP" (Byrne, 2010, p 347). Other work has identified limited knowledge of SLP by the general community (ASHA, 2022) but there is little to no research on knowledge of SLP as a career option in undergraduate students in the United States. This is a critical area of need to address some of the assumptions in our field related to student awareness.

In addition to needing to increase awareness in general, we know there is a lack of representation in the field, which can contribute to students feeling unwelcome and unwanted. Limited outreach, recruitment, retention, graduation rates, and mentorship can contribute additional hurdles for historically underrepresented students. One hypothesis is that students, especially underrepresented students of color, are learning about and becoming interested in the field of CSD later in their academic careers. For example, Dwivedi (2018) reports that students reported speech-language pathology was not their first career choice and they only stumbled across the field of SLP when they changed majors. Educational research surveys suggest that within the first 3 years of college, approximately 30 percent of undergraduates changed their major at least once (NCES, 2017).

Current Study

Lack of awareness of the CSD field until later in one's academic journey might contribute to and potentially impact student GPAs, competitiveness in applying to graduate school and ultimately entering the field as clinicians. Therefore, we wanted to examine some of these assumptions by first surveying undergraduate students at a large public university. Specifically, we surveyed students at a Minority and Hispanic Serving Institution (HSI) to explore their awareness and knowledge of the field of CSD. The student body is predominately students who identify as an underrepresented minority.

The following research questions were examined:

- Are diverse students aware and knowledgeable about the field of Communication Sciences and Disorders (CSD) as they enter the university setting?
- Do diverse students indicate an interest to learn more about the field of Communication Sciences and Disorders (CSD)?

METHOD

Procedure

A brief 18-question survey was developed and asked general demographic, major information as well as knowledge and interest of the field of Communication Sciences and Disorders (CSD). The IRB approved survey was distributed online (via Qualtrics) in 2018-2019 to several introductory courses at the university including the required Introduction to Higher Education course offered by the College of Health and Human Services (HHS). At the time of data collection, the College of HHS had over 1,500 freshman students, with the majority majoring in nursing, criminal justice, kinesiology and child/family studies, with the fewest students majoring in CSD. Instructors of various courses were emailed and asked to share the survey link with their students and encourage them to participate1. Some instructors offered extra credit for participating in the survey. See Appendix 1 for a list of survey questions.= 64); Category 4: age groups - 18-24 years (n = 33), 25-34 years (n = 38), 35+ years (n = 32). Finally, 11 participants belonged to the field of speech-language pathology and audiology. The survey was approved by the IRB of Texas State University.

Participants

A total of 67 students (53 female, 13 male, 1 preferred not to report) completed the survey online. Sixty-five students reported being between 18-25 years old, one was between 26-35 years old and one was over 36 years of age. Fifty-five students were at the freshmen level, three at sophomore, seven at junior and two at senior level. The majority of students were nursing and criminal justice majors. Ten students were majoring in communication disorders (See Table 1 for overall major distribution). Over 90% of the students indicated having Hispanic/Latinx origins. Students self-identified the following backgrounds: 64% other, 21% white, 4.5% Asian, 4.5% Native Hawaiian/Pacific Islander, 4.5% American Indian/Alaskan Native, 1.5% Black/African-American.

Table 1

Distribution of Undergraduate Majors

Major	N	%
Child Development	7	10.4%
Communication Sciences and Disorders	10	14.9%
Criminal Justice	14	20.9%
Food Science/Nutrition	1	1.5%
Kinesiology	1	1.5%
Nursing	14	20.9%
Other	5	7.5%
Psychology	1	1.5%
Public Health	2	3.0%
Social Work	4	6.0%
Undecided/Undeclared	8	11.9%
Total	67	100%

RESULTS

Approach to Analysis

The preliminary analysis focused on the results of two specific questions from the survey to examine student awareness and interest in the field. We primarily used descriptive statistics to examine answers to the questions of interest. We also examined the responses and trends of students who identified as CSD majors.

The first question analyzed was "Have you heard of the field of Speech Language Pathology?". Over 57% of the students responded with "No", 12% responded with "not sure" and 31% answered "Yes" (see Figure 1). Sixty-one percent of those respondents answering yes, self-identified as having Hispanic/Latinx backgrounds. Of the 55 students who were freshmen, only 16% (n= 9) students reported hearing of the field of SLP. When those nine freshman responded to the question regarding where they learned about the field one student wrote they "had a friend interested in the field and also heard about it from a former professor", three students described their knowledge of the field with, "I've learned that Speech language pathologists work to help children and adults with disorders such as social communication, stuttering, language disorders, and swallowing disorders" and the remaining five did not respond to the question.for

a non-biased answer.

The second question examined the student's interest in the field. Of the responses, 35% (n = 23) were undecided, 30% (n= 20) were interested in learning more about the field, 30% (n = 20) were not interested, and 5% (n= 3) stated they were already knowledgeable about the field (see Table 2). Of the 20 students interested in learning more, 13 students responded they were interested in learning about both speech language pathology and audiology and 7 students were interested in learning more about speech language pathology. Of the 55 students who identified as Freshmen, 12 students reported interest in learning more about the field and another 22 were undecided, 18 were not interested, one did not respond and two students reported already knowing about the field.

We next examined responses of only those students who were declared in the Communication Disorders major. Of the ten students declared as Communication Disorders majors at the time of the survey, all ten identified as female, eight students identified as Hispanic/Latinx and "other", one identified as Hispanic and white, and one non-Hispanic and white. When responding to the question about where they heard about the field of speech language pathology, one student reported learning about it from a class, another indicated, "I first learned about the field

Figure 1

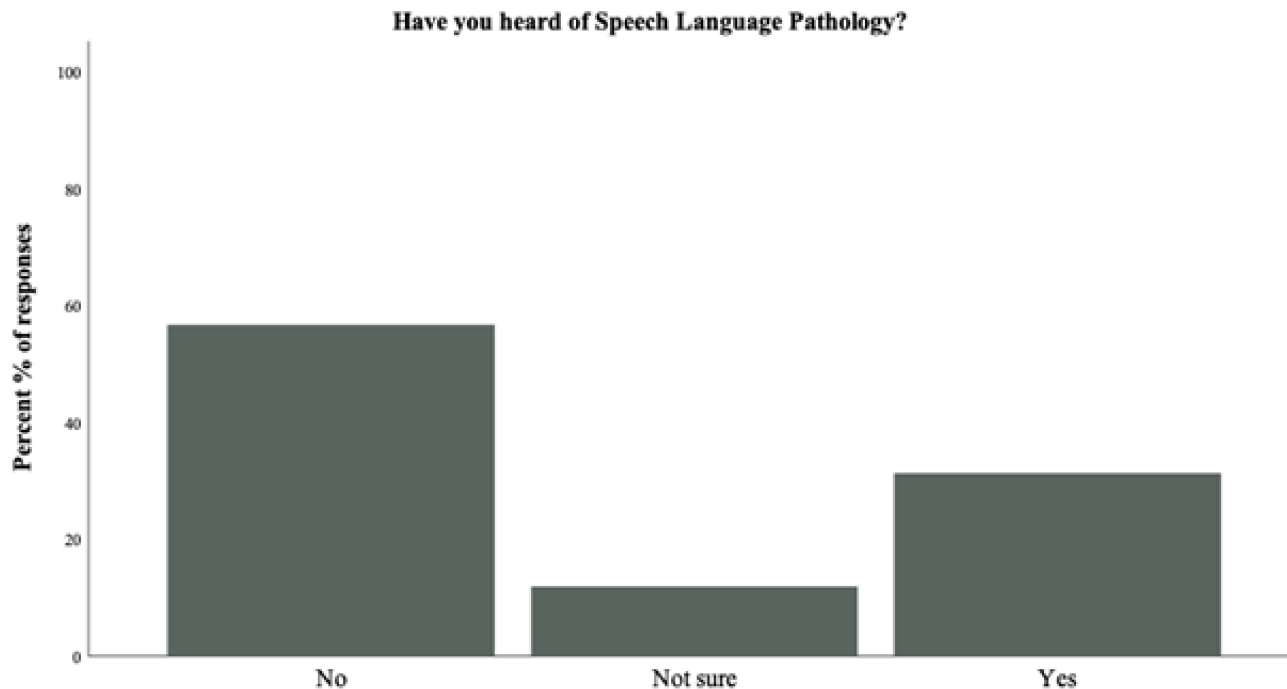*Response to survey question about awareness of SLP*

Have you heard of Speech Language Pathology?

Table 2

Student interest in learning more about CSD

Interest in learning more about CSD	N	%
Yes	20	30%
Had previous knowledge	3	5%
No	20	30%
Undecided	23	35%

when I was exploring my options on careers that allow you to work with children, other than teaching". Three students reported learning about the field from a family member or friend who had worked with children. Only one student reported having previous experience being enrolled in speech therapy. The remaining four did not respond to the question.

DISCUSSION

Over the last few years there has been a rise in speech language pathologists calling for social justice and anti-racism efforts to be a focus of the profession in order to increase representation. While ASHA and many of the constituency groups addressed some of the concerns of the field with the updated initiatives (ASHA 2020a, 2020b, 2020c), the continued need to focus on increasing the diversity of ASHA members from historically underrepresented racial and ethnic backgrounds, as well as bilingual service providers, and men, is still clearly evident. With this renewed focus on increasing representation and diversity, the profession also needs to look at the systems in place to develop better pathways for students entering the field.

While our study is limited in number of participants and the pilot survey is limited in scope, the results do shed some light on the lack of awareness of the field for students entering a large comprehensive university in the United States. The results confirm that many students are unfamiliar with the field early in their academic career and are consistent in awareness trends documented in the general public (ASHA, 2022). This important new information can help SLPs, CSD departments and other professional organizations (i.e., National Black Association for Speech-Language and Hearing (NBASLH), National Student Speech Language Hearing Association (NSSLHA) chapters, state organizations, and ASHA, etc.) with specific areas to consider when addressing the needs to increase diversity, increase awareness and general education about SLP.

The lack of awareness of SLP is important to recognize as it potentially impacts students' ability to make informed decisions about which academic courses to take and other long term goals (e.g., pursuing a graduate degree) that need to be identified on their path to the profession. For students who later decide to pursue CSD, the delay in declaring the major may potentially impact academic planning, overall GPA and ultimately the student's ability to be competitive for graduate programs. The implications of this work for outreach, recruitment, mentorship and retention efforts are significant. Coupling the lack of awareness of many students along with the systemic educational barriers already in place for many, it is clear that we need to consider ways to better recruit and support students of color to address the issues in the field and increase representation in the workforce.

What can be done to increase awareness and interest in underrepresented students?

The challenge is multilayered and needs a comprehensive approach. Every level of the profession should be prioritizing efforts to bring awareness of speech language pathology to the general public and students to address the intersections of the inclusion gaps. At the individual clinician level, the professional level, as well as the level of educational systems of universities and departments, each needs to be willing and able to make significant commitments to address the issues to increase diversity within the field, which in part means to increase awareness to students and the public. Too often, these issues have been disregarded or set aside, keeping the numbers of historically underrepresented SLPs staggering low.

Organizations and Programs

Accountability and leadership from professional organizations and institutions to address diversity issues as well as to actively recruit and support students and new clinicians is critical. Without change within the larger organizations, the same practices will continue. For over 50 years ASHA's Office of Multicultural Affairs has been addressing cultural and linguistic diversity issues related to professionals and people with communication disorders and differences. There are also seven longstanding multicultural constituency groups recognized by ASHA. These are related independent professional organizations that prioritize various efforts like recruitment of professionals, serving diverse communities and promoting cultural humility and competence of clinicians.

The Asian Pacific Islander Caucus, Hispanic Caucus, the Native American Caucus, and NBASLH, among others have various initiatives and priorities related to recruitment of new professionals (Burnette

et al., 2021). For example, NBASLH has a variety of programs for students including a mentorship program, yearly scholarships, praxis review course, and a career center that offers free resume reviews for students and professionals in the field with numerous job postings (NBASLH, n.d.). Other programs like ASHA's Minority Student Leadership Program (MSLP) provide positive and uplifting environments for students facing similar experiences in their academic programs. Students who participate in MSLP gain mentorship from ASHA leaders and examine the many multicultural implications within the field. Additionally, the ASHA Student to Empowered Professional Mentoring Program (S.T.E.P.) intends to create a sense of community that supports and empowers CSD students from underrepresented racial/ethnic populations and pairs approximately 500 students with mentors for one-on-one mentorship. Another mentorship program is ASHA's Mentoring Academic-Research Careers (MARC) program which supports those on the academic research pathway. Although these are great opportunities of support for students seeking peer and one-to-one mentoring, one weakness of these programs is that they serve students (often self-motivated) who are already aware of and fairly active in the field. We need to think about other ways to encourage students to enroll in these or different programs and facilitate mentorships when students who are just beginning their academic journeys.

University Programs

University programs can implement ways to address the intersection of the lack of awareness and lack of diversity in the field. Graduate program recruitment practices need to be reviewed. The recent "recruit, equip, access and progress" or REAP model is one framework to consider (Mohapatra & Mohan, 2021). The model is influenced by related health professions and outlines areas to focus on such as recruitment and access (Mohapatra & Mohan, 2021). Some CSD departments and faculty have been pushing for the use of more holistic graduate application review processes (Storkel, 2018; Wong et al., 2021) as another step toward addressing barriers for students. Other programs have removed the GRE as a requirement altogether, while others have even waived application fees for students of certain backgrounds (Striving for Justice, Equity, and Anti-Racism, UMN SLHS, 2020).

Additionally, admissions practices need to be re-evaluated. Part of this review should be some effort to examine patterns and reflect on which students are applying to programs. While student self-identification as a member of an underrepresented group is not part of admissions criteria, this information can provide programs with details to inform targeted outreach, as well as equity and inclusion gaps. Some programs can access this data, depending on the application system, but the information is not available across all programs.

Programs may need to take extra steps to review the applicant's information to see if there are disparities in proportions of applicants from historically underserved and underrepresented backgrounds. For example, one program from a Minority serving institution reviewed demographic information trends of applications at the end of application cycles and found in the 2018-2019 application cycle, over 58% of applicants identified as being a ethnic/racial minority on their application, and this increased in the most recent 2021-2022 cycle, with over 70% of applicants identifying as such. This increase could be due to the general increase in overall applications from approximately 300 to over 400 applications in just a few years. The rate increase was seen primarily in student applicants who identified as Hispanic, Black and American Indian. Applicants of diverse backgrounds may also be prioritizing applying to certain programs that are known to be supportive of cultural and linguistic diversity, provide a community of support and potentially other preferred characteristics (i.e. location, funding, etc.) that are unknown. Given this, information of the demographic backgrounds of applicants may vary from program to program. Doing this work can directly inform equity gaps that should be addressed.

In addition to graduate admission practices, departments need to reconsider outreach, engagement and retention needs within their departments by reaching out to freshmen and transfer students. University programs can implement outreach to local middle, high schools, and community colleges to bring awareness of the major option to younger students as well as to recruit students of color into the profession. Engaging with students early on by encouraging them to job shadow, offering scholarships and guidance are some ways to support students who are selecting their career choice. Many departments have NSSLHA or Student Academy of Audiology (SAA) chapters that can be involved in these endeavors by connecting with local schools, participating in career days and volunteering with students. Programs can be developed to invite local middle and/or high school students to campus (i.e., tour departments, sit in on lectures, attend a NSSLHA meeting), to visit clinics and observe therapy sessions, join a lab meeting, participate in a research activity and meet with current students, SLPs and faculty to learn more and for opportunities for Q&A sessions.

Retention needs to be prioritized as well. Applying

for various funding opportunities for training programs that prioritize student support can provide opportunities and community for students early on in their programs. Affinity groups (Alicea, & Johnson, 2021) and other peer mentoring programs can help with student engagement and retention activities, which has been reported to increase GPA and provide support for students of color (Simon-Cereijido, Flint & Cohick, 2016). Some university departments have also started their own alumni mentorship programs; however, it is unknown whether much of the focus is on general mentorship or specific representation-related mentorship. Another avenue to consider is how students are being advised. Whether the department has a specific advisor for the major or if the university has a general advisement center, those student support professionals need to be aware of the major/career options in CSD to best inform students of options and support academic planning. Partnerships between department programs and local community colleges and high schools should be supported to make sure students are informed and educated about the career option. As well, departments that are intentionally looking to increase diversity and representation of their student bodies should consider current trends of communication for prospective students. This may include social media posts on popular platforms, sharing information on student organization websites and other peer communication methods.

Outreach efforts should be increased and can include speaking to young school age students, high school students, participating in career day, or sharing with community members about the field in general, services offered and career options more specifically. In addition to university programs conducting outreach, clinicians could be doing outreach in the communities that they serve as well. Most of the work mentioned here will take time, commitment and funding to sustain. However, if CSD departments, universities and the profession are truly interested in addressing the needs to increase diversity, there should be an investment at each level where these educational outreach and recruitment activities are prioritized, fully funded and supported.

Conclusion

Due to various barriers as well as lack of awareness and education about the career path, the number of SLPs and students from diverse backgrounds is still staggeringly low. It is clear students need information about major choices and career options earlier along their educational path, as too often students discover their interest in and the option for CSD late in their academic journeys. We need to create and implement successful channels of out-

reach and support for students to thrive once they are interested in a career in SLP or audiology. As noted earlier, mentorship programs are one way to support students, and many have been successful at doing so (Mahendra & Kashinath, 2021). However, the need is incredibly great and each year programs are only able to accept small numbers of students. Additionally, we know many students face financial needs and limitations, further impacting academic decisions (i.e. the number of programs to apply to). Funding career pathway programs at the undergraduate level for students within the field of CSD should also be considered. Funding may include application fee waivers, support for travel to local and national professional conferences and additional funds to support tuition at both the undergraduate and graduate levels.

Exploration of the relation of personal experiences, knowledge and interest of the field might be interesting to examine in students and the public at large. Future work should continue to explore these issues, but more importantly this work should be used to justify funding support for outreach, recruitment, mentorship and retention efforts to increase awareness and interest in CSD. It is important that the efforts and changes are collective and that the labor does not fall solely on SLPs and faculty of color. Many of us continue to mentor, advise and push for change, but we need others in CSD, we need allies, we need commitment and support from colleagues, programs, institutions and organizations. The collective field of CSD must go against the status quo of what has been done for decades and make the necessary changes to see the possibilities of how the field can be. As the events over the last few years have revived the momentum to make change in the field, we need to go beyond performative acts to real actionable efforts and changes. It is imperative educators within Speech Language Pathology intentionally think and critique the work in who we are educating, how we are educating, and the larger impact both have on the profession (see Ellis & Kendall, 2021). Without review, we are only perpetuating inequities.

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HOME LANGUAGE EXPERIENCES AND THEIR IMPACT ON THE PRODUCTION OF COMPLEX SYNTAX BY LATINX PRESCHOOLERS

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— ABSTRACT —

The purpose of this study was to explore the different types of home language experience and its impact on the development of complex syntax in Latinx preschoolers. Seventy-three parents and their preschoolers were the participants in this study. The parents were interviewed to determine whether they used monolingual (Spanish or English) or bilingual (Spanish and English) input with their preschoolers. The children produced narratives in their preferred language and were coded according to their usage of complex syntax.

The participants were classified into three groups: monolingual input/monolingual output (Spanish or English), bilingual input/bilingual output, and bilingual input/monolingual output. A weighted score for the narrative complex syntax was computed by first calculating the percentage of complex utterances compared to total utterances, then using the percentage of grammatically correct utterances as the weighting factor. The results indicated that for this group of Latinx children, home language experience, whether they were exposed to monolingual or bilingual input and/or output, had no observable influence on the development of complex syntax.

Keywords: bilingual narratives, Latinx preschoolers, home language, Spanish-speaking, language input

Introduction

Standardized norm-referenced language tests do not capture the entire repertoire of a preschoolers' language skills. While the linguistic skills of preschool age children have been studied with the use of spontaneous language samples and play-based language samples, these may not capture a preschooler's ability to use more complex syntax. Researchers suggest that narratives can provide more specific information about the complex syntax of preschoolers and school-age children in comparison to conversational samples (e.g., Wagner, Nettelbladt, Sahlén, & Nilholm, 2000). The use of narrative analyses with preschoolers provides us with much more data to evaluate the use of complex syntax. With the emergence of three-word utterances (Arndt & Schuele, 2013, Diessel & Tomasello, 2001; Huttenlocher et al., 2002; Vasilyeva et al., 2008), a child is already starting to use more complex linguistic structures.

Previous research has revealed that preschoolers are capable of comprehending narratives (e.g., folktales, fables, etc.) and engaging in oral storytelling prior to entering the first grade. As children transition from preschool to school-age, they begin to develop implicit knowledge of narrative structures that highlight their ability to construct inferred meaning beyond what is stated in the text (Pinto et al., 2009). This means that when preschoolers are exposed to narrative-based literature and other forms of higher-level language, they learn some components of complex syntax (i.e., relative clauses, coordinating and subordinating conjunctions clauses, etc.).

Complex Syntax

Early complex syntax appears around age three (de Ruiter, Theakston, Brandt, & Lieven, 2018). As children learn and practice their use of early complex syntax, grammatical errors are to be expected. Arndt & Schuele (2013) proposed a way to analyze the complex syntax of preschool and early school age children in English, which captures early occurrences of complex syntax, even in three-word utterances. There is not a Spanish version of the Arndt & Schuele (2013) system for analyzing early complex syntax of preschool age children.

Complex Syntax in Monolingual Speakers

Chen and Shirai (2015) found that in some monolingual speaking Mandarin Chinese children, the acquisition of relative clauses materializes when language-specific creations of relative clauses are formed. Children formulate complex relative clauses from simpler constructions and are sensitive to distributional patterns in their input from early ages. So, what about the type of language input that parents use and its impact on the development of complex syntax?

It is well known that in order for children to acquire a language or languages they must be exposed to those languages. It is the input of those languages that allows for the acquisition of language (Huttenlocher et al., 2002). But, how do we account for the individual differences found in children's acquisition of complex syntax? In one of their studies, Huttenlocher et al. (2002) found significant individual differences in the data of 4-year-olds usage of complex syntax. When studying the predictors of the children's use of different causal sentences, they found that it was correlated to the proportion of those sentences used in parental input. In a study by Vasilyeva, et al. (2008), it was suggested that the parents of children in a higher socioeconomic status played a significant role in their child's production of complex sentences including the diversity of their child's utterances. This may be due to the educational level of the parents and their use of more complex language with their children.

However, Silvey et al. (2021) found that in order for a child's complex syntax to continue evolving parents needed to increase the complexity of their input over time. According to their results, these timing effects predicted syntactic development. They suggested that these findings might not be replicated with children learning other languages due to morphosyntactic differences in various languages. Findings from another study (Justice et al., 2012) suggested that while children may copy the complexity of teacher talk, children also evoke linguistic structures from their teachers. This suggests that children's output also influences teacher and parental input. Reportedly, sentence complexity is bidirectional in nature.

Complex Syntax in Bilingual Speakers

Implicit learning of complex language structures has been found to be a greater indicator of the acquisition of linguistic complexity for bilingual children. Previous research has shown that the relative complexity of language and the amount of exposure they receive in their earlier years of development often determines the rate at which they acquire more complex morphosyntactic skills (Gathercole 2002a, 2002b, 2002c). The findings of one study by Gutierrez-Clellen & Krieter (2003) suggested that the quantity of Spanish input by parents to their children correlated with their child's grammatical output. However, the same could not be said for the amount of English spoken to their children. For the heritage language of bilingual Syrian Arabic-English speakers, the input of the heritage language was more important for the development of complex syntax. Additional-

ly, maintaining the input in the heritage language is important for continued language development in the heritage language (Soto-Corominas et al., 2022). Therefore, asking parents to change the language they use to communicate with their children is a mistake.

Five- to seven-year-old bilingual children with developmental language disorders have more difficulty with complex syntax than typically developing five- to seven-year-old bilingual children (Paradis et al., 2022). As the use of complex syntax appears to be useful for diagnostic purposes, it is important to understand how complex syntax develops in bilingual children from an early age. The purpose of this study was to explore the different types of language input (monolingual versus bilingual) and their influences on the development of complex syntax in Latinx preschoolers. The research question is the following: Does the type of home language experience influence the complex syntax spoken by Latinx preschoolers?

Method

Participants

The participants consisted of 73 preschool children attending a central Texas school. These children were part of a larger study (Resendiz et al., 2016). Inclusionary criteria included: passing a hearing screening administered by the school nurse and typical language development. Children were identified as having typical language development based on parent report and teacher report. The children were classified into one of three groups, depending on their combination of language input based on parent report of language input and output while at home and teacher report of language input and output while at school. The three groups were: (a) monolingual input/monolingual output (English or Spanish), (b) bilingual input/bilingual output, and (c) bilingual input/monolingual output (English OR Spanish). Refer to Table 1 for participant demographic information.

Procedures

Language input and output were determined by information provided by the parents when interviewed via phone using the Family Interview Questionnaire of the Bilingual English-Spanish Assessment (BESA; Peña et al., 2018). The Family Interview Questionnaire was selected because Pratt, Adams, Peña, and Bedore (2022) suggested that teacher and parent reports can provide extensive information about a child's language use and abilities. However, they suggested that the questionnaires administered to parents and teachers should include the following:

" (a) questions that ask about a single construct (e.g., vocabulary OR sentence length OR intelligibility), (b) questions that provide clear examples of the language behaviors, and (c) questions that allow for nuanced responses, not a simple yes or no (pg. 88)."

Parents provided detailed hourly information about the language input provided to the participants in the home during a typical day. Parents were also asked to provide information as to their child's vocabulary, speech production, sentence production, grammatical production and comprehension in both English and Spanish. For example, parents were asked to use the following scale when asked questions regarding participant vocabulary proficiency in English and Spanish: 1) does not speak in the indicated language, 2) speaks a few words, 3) a limited rage of words, 3) Some words, 4) speaks many words, and 5) extensive vocabulary. Refer to Table 2 for the means and scoring schemes of these categories for each of the three groups.

The participants in the three groups were then asked to produce narratives (in their language of choice) using the "One Frog Too Many" wordless picture book (Mayer, 1975). Forty-four of the children in the bilingual group chose to produce Spanish narratives while 29 produced English narratives. The narratives were transcribed into C-units as well as complex syntactic structures using an adapted version of Arndt and Schuele (2013). The narrative transcriptions were then analyzed using the Systematic Analyses of Language Transcripts guidelines (SALT; Miller & Iglesias, 2012). Refer to Table 3 for Mean Length of Utterance Word (MLUw), Mean Length of Utterance Morphemes (MLUm), Number of Different Words (NDW), Number of Total Words (NTW), and Type Token Ration (TTR) for the three groups.

Additional SALT analyses obtained consisted of the average percentage of complex utterances, total number of utterances, average subordination index, and average percent of grammatically correct utterances produced by each of the three groups (see Table 4).

Coding of Complex Syntax Narrative Samples. Grammatical and ungrammatical utterances that consisted of more than one main verb were coded for complex syntax. Utterances that contained a complex syntax token were identified with the [cs] code. Each utterance exhibiting complex syntax was coded as to the type of complex syntax. Arndt and Schuele's (2013) complex syntax classification coding scheme was adapted and used. However, the complex syntax scheme was modified to code for Spanish utterances based on the SALT Spanish Coding System (Miller & Iglesias, 2012) due to the differentiation between the languages. For instance, reduced infinitive complex

Table 1

Participant Demographics of the Three Groups

Groups vs Characteristics	Monolingual Input Monolingual Output Group 1 n = 14	Bilingual Input Bilingual Output Group 2 n = 44	Bilingual Input Monolingual Output Group 3 n = 15
Gender	M = 8 F = 6	M = 22 F = 22	M = 6 F = 9
Age Ranges	55 to 65 months	54 to 73 months	54 to 65 months
Mean Age	59.79 months	60.23 months	60.27 months
Maternal Education 1 = < 7th 2 = 9th 3 = 10th or H.S. 4 = H. S. Grad 5 = Partial College 6 = College Grad 7 = Graduate School	1 = 0 2 = 2 3 = 2 4 = 6 5 = 4 6 = 0 7 = 0	1 = 12 2 = 8 3 = 2 4 = 15 5 = 4 6 = 3 7 = 0	1 = 3 2 = 1 3 = 3 4 = 5 5 = 2 6 = 1 7 = 0
Paternal Education 1 = < 7th 2 = 9th 3 = 10th or H.S. 4 = H. S. Grad 5 = Partial College 6 = College Grad 7 = Graduate School	Not Known = 0 1 = 0 2 = 2 3 = 1 4 = 7 5 = 2 6 = 2 7 = 0	Not Known = 3 1 = 8 2 = 11 3 = 3 4 = 13 5 = 4 6 = 2 7 = 0	Not Known = 1 1 = 4 2 = 3 3 = 1 4 = 2 5 = 3 6 = 0 7 = 1

types such as gonna, wanna, and gotta were omitted from the Spanish complex syntax coding scheme due to the reduced use of infinitives in Spanish. Dialectal differences regarding bidirectional influence of one language on another were coded as a grammatical utterance in an effort to reduce linguistic bias.

The Spanish utterances were not limited to just one complex syntax coding adapted from the English coding suggested by Arndt and Schuele (2013), but could be assigned several categories. Utterances that contained more than one type of complex syntax usually consisted of a coordinate or subordinate clause. For instance, "detiene a la rana y la van a sacar" contains a coordinate clause "y" and marked infinitive clause "a sacar". The infinitive clause types were coded when a non-finite verb followed the obligatory non-finite complement "a" which is equivalent to the usage of "to".

Coding Challenges. Challenges in coding occurred when utterances contained a Spanish verb without a translation equivalent in English. The Spanish verb "estar" translates to "to be" and is not considered to be an English verb. For example, the utterance

"ellos estan bien asustados" includes "estar" which is a present tense indicative mood verb that is not present in English. Therefore, it was coded as other. Full propositional clause types were coded for when "que" was utilized as a headed complementizer. For instance, "Piensa que hay un rana ahí" is an example of an utterance coded as a full propositional clause. It was challenging to determine whether this utterance should be coded as a full propositional clause since the "que" in this utterance could not be deleted from the sentence. However, when the utterance is translated into English, the "que" would be equivalent to "that" which is a complementizer.

Reliability. All of the narratives were transcribed by two graduate students knowledgeable about the Systematic Analysis of Language Transcripts (SALT: Miller & Iglesias, 2012). Twenty percent of the narratives were then randomly selected to determine inter-rater reliability. One researcher transcribed and coded all of the narrative utterances. Inter-rater reliability between the researcher and the two graduate students was 86%.

Table 2

Means in English and Spanish of Vocabulary Proficiency, Speech Proficiency, Sentence Production Proficiency-Grammatical Proficiency and Comprehension Proficiency of the Three Groups

Groups vs. Categories	Coding Scheme (For both Spanish & English)	Monolingual Input Monolingual Output Group 1 n = 14	Bilingual Input Bilingual Output Group 2 n = 44	Bilingual Input Monolingual Output Group 3 n = 15
Vocabulary Proficiency (the use of home and academic vocabulary)	0 = does not speak in the indicated language 1 = speaks a few words 2 = a limited range of words 3 = some words 4 = many words 5 = extensive vocabulary	English/Spanish 3.71/1.82	English/Spanish 3.32/3.70	English/Spanish 3.80/3.07
Speech Proficiency (level of intelligibility in both languages)	0 = does not speak in the indicated language 1 = Never 2 = rarely 3 = sometimes 4 = very often 5 = always	3.85/2.64	4.04/4.30	4.63/3.86
Sentence Production Proficiency (usual utterance length in both languages)	0 = does not speak in the indicated language 1 = 1 to 2 words 2 = 2 to 3 words 3 = 3 to 4 words 4 = 4 to 5 words 5 = 5 or more words	3.85/1.73	3.71/3.40	3.30/2.67
Grammatical Proficiency (grammaticality of the utterance)	0 = does not speak in the indicated language 1 = never 2 = rarely 3 = sometimes 4 = very often 5 = always	3.77/2.27	3.59/3.60	3.50/2.79
Comprehension Proficiency (comprehension of each language by the child)	0 = does not understand in the indicated language 1 = never 2 = rarely 3 = sometimes 4 = very often 5 = always	4.15/2.27	3.96/3.98	3.75/3.60

Table 3

Average MLUw, MLUm, NDW, NTW, and TTR Produced by Each of the 3 Groups

Groups	MLUw	MLUm	NDW	NTW	TTR
Monolingual Input Monolingual Output Group 1 n = 14	5.13	5.72	58	132	0.46
Bilingual Input Bilingual Output Group 2 n = 44	5.76	5.96	48	112	0.45
Bilingual Input Monolingual Output Group 3 n = 15	4.75	5.05	40	88	0.48

Table 4

Average Percentage of Complex Utterances, Total Number of Utterances, Average Subordination Index and Average Percent of Grammatically Correct Utterances Produced by Each of the 3 Groups.

Groups	Average Percentage of Complex Utterances	Number of Total Utterances	Average Subordination Index	Percentage of Grammatically Correct Utterances
Monolingual Input Monolingual Output Group 1 n = 14	0.1445	23.29	.006	0.6777
Bilingual Input Bilingual Output Group 2 n = 44	0.1442	21.14	.007	0.7137
Bilingual Input Monolingual Output Group 3 n = 15	0.1201	19.20	.006	0.6329

Results

Children were classified into one of three groups, depending on their combination of language input and output. The three groups were: (a) monolingual input/monolingual output (without distinction between English or Spanish), (b) bilingual input/bilingual output, and (c) bilingual input/monolingual output. Next, a weighted score for the narrative complex syntax was computed by first calculating the percentage of complex utterances compared to total utterances, then using the percentage of grammatically correct utterances as the weighting factor. Weighted scores were utilized because the use of linear regression is difficult to justify when analyzing

Table 5

Frequency Distributions and Descriptive Statistics of the Weighted Score for Complex Syntax

Group	N	Mean	Std. Dev.
Monolingual Input/ Monolingual Output	14	0.10	0.12
Bilingual Input/ Bilingual Output	44	0.11	0.11
Bilingual Input/ Monolingual Output	15	0.10	0.10

non-parametric data (such as counts). Therefore, using weighted scores satisfies the requirements for linear regression (Nikoloulopoulos, Joe, & Chagantry, N. R., 2011; Wang & Elston, 2007). Table 5 below shows the resulting distribution, as well as means and standard deviations for each group.

The relative size of the means and standard deviations (these data produced equal means and standard deviations in two of three groups, and a standard deviation that exceeded the mean in one group) indicates a very high degree of variability among the children in their development and use of complex syntax. We examined the dataset for outliers, and recomputed all analyses after deleting the outliers. However, the results did not change in any significant respect. As a result, we chose to retain the data for all 73 children in order to provide a richer description of our participants.

A linear regression of weighted complex syntax using group membership as the predictor produced non-significant results $F(1, 71) = 0.016$, $p = 0.89$, and $R2 = 0.00$. These results indicate for this group of children, language environment, whether they were exposed to monolingual or bilingual input and/or output, had no observable influence on the development of complex syntax.

Discussion

The purpose of this study was to explore the different types of parental language input (monolingual versus bilingual) and their influences on the development of complex syntax in narrative task output by Latinx preschoolers. While there were no significant findings, it is important to note that it is not whether preschoolers are exposed to monolingual (English or Spanish) versus bilingual input, it is just language input that is important for the use of complex syntax by preschoolers.

The findings of one study by Gutierrez-Clellen & Krieter, (2003) suggested that the quantity of Spanish input by parents to their children correlated with their child's grammatical output. However, the same could not be said for the amount of English spoken to their children. However, they did find that the amount of Spanish input correlated with grammatical performance. It is important to note that we did not examine the amount of Spanish, English, or Bilingual input because we were interested in whether the type of input correlated with output.

Implications

As suggested by Silvey et al. (2021) in order for a child's complex syntax to continue evolving, parents need to increase the complexity of their input over time. These timing effects may play a role; however, the purpose of this study was not to determine if timing effects made a difference. Justice et al. (2012) found that the input and the output are bidirectional and influence one another. This information in addition to our findings is extremely important in case bilingual or monolingual Spanish-speaking parents are ever told to speak just English in the home. Since input and output are bidirectional, then it is important that parents continue speaking to their children in the language or languages that they are proficient in so that they can provide more complex input to their child which in turn will influence more complex output by their children.

It was noted that the participants in this study demonstrated a wide range of variability in their usage of complex syntax. This wide variability is similar to the findings by Huttenlocher et al. (2002) where they found significant individual differences in the use of complex syntax by 4-year-old English-speakers. So, it is not surprising that our results in terms of variability of monolingual- (English or Spanish) and bilingual-speaking children's use of complex narratives concurs with their findings.

It is important to note that the results and implications should not be generalized to all preschool children until further studies confirm the results of this study.

Limitations of the Study

There were some limitations to this study. First, parental self-reports regarding exposure to certain language input for every single hour for every day, may be difficult to ascertain via self-report especially if the information is collected via a phone interview. Secondly, there may have been significant variability in the amount of bilingual proficiency because our

criteria for bilingualism included children who spoke "one or more hours" of both languages at home. For example, a child who has been exposed to another language for only one hour, compared to a child who has over 50 hours of exposure to a second language, may likely be more proficient in the second language learned.

Also, differences in socioeconomic status and the home literacy environment, which was not accounted for, may have also played a factor in the variation among the use of complex syntax exhibited by the preschoolers when producing narratives. We must also recognize that there are differences within the English and Spanish languages. Not all Spanish words or utterances can be translated to English, which can be problematic, particularly when coding the transcription of the narratives produced by the preschool children. Lastly, the authors did not ask the parents if they had ever been told by a health care provider to speak just English in the home. In the future, this is something that should be asked of parents.

Future Research

Participants in the current study were all typically developing; however, complex syntax is an area of difficulty for bilingual children with language disorders (Paradis et al., 2022). Parents of children who are bilingual and have language disorders are at greater risk of being told to speak English only to their children. While complex syntax is an area of difficulty, research is needed to demonstrate that the difficulties are not due to the language input provided in the home language(s). The language that parents of bilingual children with language disorders also needs to be further investigated because Silvey and colleagues (2021) found that for a child's complex syntax to continue evolving, parents needed to increase the complexity of their input over time. This can be challenging if parents do not speak their language of choice within the home.

Conclusion

In summary, while the authors did not find a direct correlation between monolingual versus bilingual input and the development of the participants' usage of complex syntax, it is expected that overall input influences the use of complex syntax. It does not matter whether it is monolingual English OR Spanish or bilingual input. Our results may have been different due to the way in which the data were collected. Further studies are warranted to determine if socioeconomic status plays a significant role in the prediction of the development of complex syntax in Latinx preschoolers.

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DYNAMIC ASSESSMENT OF CONTEXTUAL ANALYSIS IN FOURTH-GRADE STUDENTS: A PILOT STUDY

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— ABSTRACT —

Purpose: The purpose of this study was to pilot a dynamic assessment of contextual analysis on low-income, fourth-grade students. A prior assessment, the Dynamic Assessment of Morphological Analysis (Larsen & Nippold, 2007), was modified to develop the Dynamic Assessment of Vocabulary in Context (DAVIC) for the current study. The primary objective of the DAVIC is to use graduated prompts aimed at context clues to assess the word-learning ability of fourth-grade students.

Method: Twenty-eight, typically developing English-speaking, fourth-grade children were grouped according to their performance (Pass or Non-Pass) on a standardized assessment. All participants were assessed using the DAVIC in which a series of five graduated prompts were presented until they were able to appropriately define a word from context.

Results: Using graduated prompts aimed at context clues can reveal a range of abilities regarding the amount of support a child needs to derive word meaning.

Conclusion: Clinical implications about the use of graduated prompts to measure word learning are discussed.

Keywords: dynamic Assessment, graduated prompting, vocabulary, context clues

Reading is an area of difficulty for many fourth-grade students. Data from the 2019 National Assessment of Educational Progress (NAEP) reveals that only 35% of fourth-grade students perform at or above a proficient reading level. Reading difficulties are more acute in minority and low-income populations. For example, in 2019, the average NAEP reading score for African-American fourth-grade students was 204, which was 27 points lower than that of White fourth-grade students. Further, the average score of fourth-grade students who attended low-income schools was 207, as opposed to an average score of 235 for students who did not attend low-income schools. As a result, researchers have focused on the "fourth-grade slump," which refers to the decline in reading skills that predominantly occurs among low-income, fourth-grade children. Vocabulary is a particular area of interest for reading researchers because it is one of the five essential components of reading, along with phonics, phonemic awareness, fluency, and reading comprehension (National Reading Panel, 2000).

Conceptually, vocabulary knowledge can present complexities because words are not simply "known" or "unknown." Rather, word knowledge exists in increments. There are three levels of word knowledge: Unknown, Acquainted, and Established (Beck et al., 1979). Word knowledge is "unknown" when the meaning and the term are completely unfamiliar. Word knowledge is "acquainted" when there is a basic understanding of the term's meaning. Established knowledge is demonstrated when the word meaning is easily and immediately recognized, and the term can be used appropriately. Speech-Language Pathologists (SLPs) often use assessments such as the Expressive Vocabulary Test (Williams, 2019) and the Expressive One-Word Picture Vocabulary Test (Martin & Brownell, 2011) to determine a child's vocabulary abilities. However, these tests do not address the three levels of word knowledge. Instead, standardized assessments measure whether the word is established (fully known) or not.

Low-income fourth-grade students and academic vocabulary

Assessing vocabulary can be complex due to the incremental nature of word-learning, as well as the impact of income and exposure. Children from low-income homes tend to experience a decline in vocabulary skills (as measured by standardized tests) when they enter the fourth grade (Chall et al.,1990). This may be the result of a lack of experience with academic vocabulary and expository text in primary grades   (Duke et al., 2003). For example, Yopp and Yopp (2000) found that only fourteen percent of materials read aloud in class by primary grade teachers were expository. Further research shows that first-grade students in low-income schools are exposed to informational texts for an average of 1.9 minutes per day (Duke, 2000). The impact of minimal early exposure to informational texts becomes evident in the fourth grade, which is when 1.) children begin to "read to learn" and 2.) low-income children experience a significant drop in reading performance (Chall et al., 1990).

Dynamic Assessment and Graduated Prompting

Unlike standardized tests, performance on Dynamic Assessment measures has shown to be uninfluenced by income. Rather than assessing a child's prior exposure to a word, Dynamic Assessment allows the examiner to evaluate a child's learning process and their responsiveness to different levels of intervention. Graduated prompting is a Dynamic Assessment method in which a series of predetermined probing questions or prompts are presented to determine a student's immediate learning potential, their level of independence in answering a question, and their ability to transfer concepts to a similar but different task. Through graduated prompting, learning ability is measured by transfer, which is the distance between the child's ability to perform the original task and their application of concepts to new tasks.

The Graduated Prompting Dynamic Assessment method has been shown to be useful when assessing word-learning. However, it has primarily been used during non-reading or single-word reading tasks (Larsen & Nippold, 2007; Camilleri & Botting, 2013; Wolter & Pike, 2015, Peterson et al., 2018; Wolter et al., 2020). One task that has been examined is morphological analysis (Ram et al., 2013). Morphological analysis is an independent word-learning strategy that involves the use of individual word parts (i.e., prefixes and suffixes) to derive word meaning. Larsen and Nippold (2007) used the Dynamic Assessment Task of Morphological Analysis (DATMA) to assess morphological analysis in typically developing sixth-grade children. The participants were provided with predetermined verbal prompts presented in a hierarchy (from minimal to maximal) until the participants were able to define 15 target words. Results showed that using the DATMA could reveal a wide range of abilities.

Although studies show that word-learning strategies can be successfully implemented outside of a reading task, strategies focused on vocabulary may be particularly instrumental when reading an expository passage. This is because readers tend to focus on vocabulary in order to read an expository text.

Kletzien (1991) examined the reading strategies of high school students who were reading expository text passages. Results showed that "focusing on vocabulary" was the strategy most used by all participants. Despite this, there is little research on using word-learning strategies during an actual reading task.

Contextual Analysis Strategies

One word-learning strategy that can be examined during a reading task is contextual analysis. Contextual analysis is an independent word-learning strategy that involves the use of context clues to derive word meaning. Current research about providing vocabulary instruction specifically in the area of context clues is mixed and scarce. Results from a meta-analysis (Kuhn & Stahl, 1998) indicated that making children aware of unknown words in their reading was equally effective as teaching a specific context clue strategy. In another metanalysis (Elleman et al., 2019), seventeen studies about vocabulary interventions for middle school students were reviewed, but none addressed contextual analysis. A review of contextual analysis studies was completed and based on efficacy, two evidence-based contextual analysis strategies were selected to be examined in this pilot study.

According to the Word Learning Strategy (WLS) curriculum, direct strategies to teach context include the following 1.) Pause when you find an unknown word 2.) Read the surrounding words and sentences to look for context clues 3.) Use the clues to infer the meaning of the unknown word, and 4.) Try out your inference to see if it makes sense (Graves, et al, 2017). The two evidence-based contextual analysis strategies used in this pilot study: Forward and Backward Cues (Gardner, 2007) and SCANR (Jenkins et al., 1989) are in line with the WLS curriculum. Specifically, the Forward and Backward Cues strategy is in line with WLS strategy number 2 and the SCANR strategy is in line with WLS strategy number 4.

Forward and Backward Cues (Gardner, 2007)

Teaching children to locate forward and backward cues is a specific context clue strategy that has been shown to be effective (Gardner, 2007). Forward cues are those which occur after the target word in context, and Backward cues are those which occur before the target word in context.

SCANR (Jenkins et al., 1989)

Another specific context clue strategy that has shown to be effective involves teaching a child to substitute the unknown word for a known word if it makes sense in the context. This strategy is called SCANR (Jenkins et al., 1989), which is an acronym that stands for: Substitute a word or expression for the unknown word; Check to find context clues that support your idea; Ask if the substitution fits all of the context clues, Need a new idea?; and Revise the idea to fit the context.

Purpose of Current Study

Currently, there is limited research on the use of graduated prompting and word-learning with contextual analysis strategies. Prior research indicates that graduated prompting can be useful in observing word-learning ability, but studies on this method of Dynamic Assessment have been largely focused on morphological analysis as a word-learning strategy (Larsen & Nippold, 2007, Ram et al., 2013, Wolter & Pike, 2015, Wolter et al., 2020). Research is needed to examine the implementation of Graduated Prompting during a reading task.

The purpose of this study is to expand the current body of literature on Dynamic Assessment by piloting a graduated prompting protocol focused on contextual analysis. This study also aimed to determine how well fourth-grade children could use graduated prompts focused on contextual analysis to derive word meaning. By focusing on word-learning ability, this study has the potential to demonstrate a process for educators to examine a child's response to intervention in the area of vocabulary.

The following research questions were asked:

Can a Graduated Prompting Dynamic Assessment aimed at context cues reveal a range of performance levels in fourth-grade students?

Is there a relationship between word knowledge (as measured by standardized assessment) and word learning ability (as measured by graduated prompting)?

Method

Setting

All procedures involved in this study were approved by the Institutional Review Board (IRB) of the University of Cincinnati before the initiation of data collection. Data for this study was collected and published as part of a dissertation. This study was conducted at a public school in a southern Ohio county in the middle of the academic year. According to public records, this school serves a primarily low-income population, with over 95% of the students receiving free or reduced lunches. This school serves grades Kindergarten-8. Additionally, public data reveals that the school population is primarily African American (93.3% Black and 6.7% non-Black). Each participant was tested individually in a quiet envi-

ronment in the school.

Participants

Consent to participate was sent to the families of all students in the fourth grade (75 students). Parent consent and child assent to participate in this study were received from thirty fourth-grade students. Twenty-eight typically developing, English-speaking, fourth-grade students participated in and completed all phases of the study. All participants were African-American. Individual data regarding participant socio-economic status (SES) was not collected. However, public SES data (reported above) suggests that the participants in this study were primarily from low-income households.

The fourth-grade participants in this study ranged in age from 9;3 (9 years 3 months) to 11;1 (11 years, 1 month). The mean age of participants was 9;9. There were 19 female participants and 9 male participants. School records indicated that all participants presented with normal hearing acuity.

Procedure

Standardized Vocabulary Testing

The Expressive One-Word Picture Vocabulary Test, fourth edition (EOWPVT-4) was administered to thirty fourth-grade children who consented to participate in the study. Due to attrition and exclusionary criteria, the data of twenty-eight participants were analyzed. Participants were divided into two groups based on their performance on the EOWPVT-4. One group consisted of participants who scored within one standard deviation (SD=15) of the mean (M=100) on the EOWPVT-4. This group was referred to as the Pass group. The second group consisted of participants who scored more than one standard deviation below the mean on this assessment. This group was referred to as the Non-Pass group. Based on EOWPVT-4 scores, 14 participants were placed into the Pass group (scored 85-115, M=95.5), and 14 participants were placed into the Non-Pass group (scored below 85, M=75.4). The even number of participants per group occurred naturally.

Dynamic Assessment

Twenty-eight Pass and Non-Pass participants were assessed using a graduated prompting Dynamic Assessment. The DATMA (Larsen & Nippold, 2007) was adapted to be appropriate for assessing context clue usage with fourth-grade children. The Dynamic Assessment for the current study is entitled: Dynamic Assessment of Vocabulary in Context (DAVIC). The purpose of the DAVIC was to determine the level of prompting required for a participant to successfully express the meaning of a word using context clues.

Preparation of text. The DAVIC was used to determine the level of support that a child needs to derive the meaning of unknown words in a given context. The target words in the DAVIC were presented in two expository reading passages created for this study. All vocabulary words used in the DAVIC passages were selected from a fourth-grade science textbook. Each passage contained five target words that are listed in Appendix A. The subject matter of the reading passage was selected based on Ohio learning standards, and the readability of each passage was determined using the Flesch-Kincaid Grade Level Readability Formula (Flesch, 1948; Kincaid et al., 1975), which was calculated to be a 4.3 using computer software.

Text Preparation Coding and Reliability. Four raters read the texts to determine the level of supportiveness of each context clue (Beck et al., 1983). For consistency, each context clue in the reading passages was written to be rated as either "general" or "directive" based on the Beck et al. (1983) descriptions. A general context provides basic information that may lead a reader in determining a basic category for a target word. A directive context leads a reader to the appropriate meaning of the target word. Four raters found each context clue to be either general or directive with an agreement of 100%.

Testing Procedures. The administration of the DAVIC occurred in three stages: Pretest, Reading Passage and Prompting phase, and Transfer task.

Pretest. The first stage of the DAVIC was a pretest. The purpose of the pretest was to determine participants' prior knowledge of each target word's meaning. During the pretest, participants were asked to provide the meaning of each of the ten words (out of context) that would be encountered in the text. For each pretest item, participants were asked, "What does ___ mean?" All responses were audio-recorded for coding purposes.

Pretest Coding and Reliability. The pretest responses were coded for word knowledge based on levels defined by Beck et al. (1979), which are: Unknown, Acquainted, and Established. A coding key (Appendix A) was used to score all responses. Participants could score up to 3 points for each pretest item for a possible total of 30 points on the pretest. Responses coded as Unknown, Acquainted and Established, were scored as 1, 2, or 3, respectively. All responses were scored by two coders. The agreement between coders for the pretest was calculated at 97%.

Reading Passage and Prompting Phase. After pretesting, each participant was presented with the expository text passages one at a time. Participants

were instructed to read the passage aloud. When a participant demonstrated that they were unable to decode a word, the word was stated for them one time.

Graduated Prompts. The DATMA (Larsen & Nippold, 2007) was adapted to develop the procedure, prompting, and scoring system used for the DAVIC. The prompts selected were based on research (Gardner, 2007; Jenkins et al., 1989; Kuhn & Stahl, 1998), the Ohio learning standards, and the general prompt hierarchy. After a participant read a passage, they were presented with a scripted series of five graduated prompts to determine the amount of prompting necessary for each participant to successfully express the meaning of each target word. Participants who successfully defined the target word at a given Prompt level were awarded the specified number of points, and the next item was administered. Research-based strategies were modified for this study. The methods listed below were presented in a scripted format. The prompting structure and scoring procedure were as follows:

1. Prompt One: Incidental Word Learning (5 Points). Because incidental word learning is a reader's ability to derive the meaning of an unknown word during the reading process, no scaffolding was provided by the clinician. After reading the passage, the paragraph containing the target word was removed from the child's sight. Participants were asked to define the word. The purpose of this prompt was to assess incidental word learning after one exposure in context (Wagovich & Newhoff, 2004).

2. Prompt Two: Context clue reminder. (4 Points) After not responding to prompt 1, participants were shown the word in context by pointing and were verbally instructed to use context clues to derive word meaning. The purpose of this prompt was to allow the fourth-grade participants to utilize their independent (or classroom-based) knowledge of the use of context clues based on academic content standards.

3. Prompt Three: Direct instruction in Forward and Backward Cues (3 Points). After not responding to Prompt 2, instruction in the forward and backward cue strategy (Gardner, 2007) was provided. All participants were required to successfully locate the forward and backward cue in an unrelated passage before being presented with the DAVIC passage. The forward and backward cue treatment was developed based on Gardner's (2007) procedures and is outlined in Appendix B. The purpose of this prompt was to provide evidence-based instruction in deriving word meaning.

4. Prompt Four: Modeling (2 Points). After not responding to Prompt 3, a modeling technique was used in which the clinician pointed to the context clue and said, "This is the context clue. The clinician then read the context clue aloud and said, "Now tell me what the word means." This prompt was used to provide a higher-level prompt as defined in general prompt hierarchies.

5. Prompt Five: Instruction in Substitution strategy (1 Point) After not responding to Prompt 4, a modified version of SCANR (Jenkins et al., 1989) was implemented. To ensure that participants understood how to use the strategy, instruction was provided. The SCANR treatment was developed based on Jenkins et al.'s (1989) procedures and is outlined in Appendix B. All participants were able to successfully substitute a word at the trial level prior to completing the DAVIC task. The purpose of this prompt was to provide evidence-based instruction in deriving word meaning.

At each prompting level, the participants were asked to define the term based on what they found in the context. All participants had to demonstrate an Established Level (as defined in the Coding Key in Appendix A) of knowledge before completing a transfer task for that word. Participants who did not answer with an Established response for a prompt were provided with graduated prompts until this occurred. If an established response was not elicited after being presented with all five prompts, the participant was given a score of 0 (No Level of Successful Prompting [NLSP]) and did not complete a transfer task for that item. The reading passage and prompting phase were audio recorded.

Transfer/Application Task. When a participant correctly defined a word, they moved on to Stage Three, which was the transfer (or application) task. The transfer task was an application task in which each participant was asked to apply the word knowledge gained through graduated prompting by using the target word in a new sentence. If the participant was unable to define the target word using the graduated prompting system, then an application task was not completed for that target word, and it was automatically coded as "Unknown" for scoring purposes. The application task was audio recorded to ensure that the integrity of the responses was maintained during analysis.

Coding and Reliability for the transfer task. Coding for the DAVIC transfer task (sentence production) was similar to that of the DAVIC pretest (definition production). Responses were coded as Unknown, Acquainted, and Established, and were scored as 1, 2, and 3 respectively for each of the ten items. If the participant did not complete the transfer task because their successful prompting level could not be determined for the word, then this occurrence was

automatically coded as Unknown. Because sentence productions may not contain information commonly found in definitions (e.g., "We may get a lot of precipitation this week."), both syntactic and semantic knowledge were considered when determining the level of word knowledge for the transfer task. All responses were scored by two coders. Agreement for the transfer task was calculated at 90%.

Scoring. The DAVIC procedure consisted of three phases yielding three separate scores. The pretest had a total possible score of 30. The graduated prompting phase had a total possible score of 50. This phase consisted of ten target words worth a possible five points each. The post-test had a total possible score of 30.

Results

The aim of this study was to pilot a graduated prompting protocol focused on contextual analysis. There was a potential confounding variable (supportiveness of text) in this study. Therefore, an analysis was performed to examine whether this variable contributed to the outcomes. A chi-square test of independence was performed to examine the relationship between the supportiveness of text (general or directive) and the frequency of responses at each prompting level. The relationship between these variables was not significant, $\chi 2=7.347$, df $=5$, p $<.196$. The above analysis suggests that changes observed in this study are not due to a confounding variable.

DAVIC and Word Learning Ability

Multiple analyses were completed to examine word learning ability. First, it was necessary to determine if there was a relationship between the DAVIC pretest and the EOWPVT-4 because both were assessments of word knowledge instead of word learning ability. A Pearson Correlation indicated that scores on EOWPVT-4 and DAVIC pretest scores were significantly correlated, r=.599, p=0.01. This positive correlation means that students who scored higher on the EOWPVT-4 also scored higher on the DAVIC pretest. Conversely, it was found that after completing the graduated prompting procedure, no signifi-

cant correlation (r=.184 p=.184) was found between EOWPVT-4 (word knowledge) and the DAVIC post-test scores (word learning ability).

Next, the relationship between word knowledge and word learning ability was examined by analyzing the participants' performance on the standardized assessment (Pass and Non-Pass) and the Dynamic Assessment. Levene's test was used to test whether the groups (Pass N=14 and Non-Pass N=14) had equal variances on the DAVIC. The result (F=2.308, p=.141) suggested that the two groups had equal variances, so the assumption was met. An independent measures t-test showed that there was no significant difference between the Pass group (M=67.00, SD=14.502) and the Non-Pass group (M=64.57, SD=9.525) on the DAVIC graduated prompting task, t(26)=.524, p=.605, d=.19.

Finally, participants' word learning from pretest to post-test was examined by converting the pretest and transfer task scores to a percentage (30 total points possible, 30 points=100%). A paired-samples t-test was used to determine if there was a significant difference between the variables. Cohen's D was computed to determine effect size. A paired samples t-test showed that the participants scored significantly higher on the transfer task (M=62.32, SD=10.61) than on the pretest (M=37.96, SD=5.87); t=-10.73, p=<.001, d=2.84.

Level of Successful Prompting

To examine the range of abilities demonstrated at each prompt level, a frequency of occurrence was calculated at each prompt level. The results of this study revealed that participants were able to derive word meaning more frequently at Prompt 2 than at any other prompt level. As shown in Table 1, Pass and Non-Pass participants performed almost equally at Prompt Level 2, in which they were given the passage, shown the target word, and instructed to "Re-read this to find context clues." Conversely, the prompt that was successfully responded to the fewest amount of times was Prompt 5 (SCANR/Substitution). Out of a total of 280 responses from the participants, only one response was correct at Prompt 5.

Table 1

Frequency of successful responses at each prompt level

	Prompt 1	Prompt 2	Prompt 3	Prompt 4	Prompt 5	*NLSP
Pass Participants (n=14)	16	69	18	29	1	7
Non-Pass Participants (n=14)	8	70	28	24	0	10

Note. *A word was coded as NLSP when a successful prompt was never elicited.

Prompt five was reached a total of 18 times by participants. Out of 18 opportunities, only one resulted in a successful prompt. The other 17 occurrences did not result in a correct definition production and were consequently given a code of NLSP (No level of Successful Prompting) for that item.

A Pearson Correlation was used to determine if there was a significant relationship between the EOWPVT-4 standard score and the frequency of responses at each Level of Successful Prompting. The analysis revealed the following correlations: EOWPVT-4 scores and Prompt 1 frequency were significantly and positively correlated, r=.429, (p=0.05). The correlation between EOWPVT-4 score and Prompt 2 (context only) frequency was not significant, r= .123 (p=.535). The EOWPVT-4 score and Prompt 3 (direct instruction) frequency were significantly correlated, r=-.376, (p=0.05). The correlation between EOWPVT-4 score and Prompt 4 (modeling) frequency was not significant, r= -.038 (p=.850). The correlation between EOWPVT-4 scores and Prompt 5 (substitution) frequency was not significant, r=.008 (p=.968). The correlation between EOWPVT-4 score and NLSP (no level of successful prompting) frequency was not significant r= -.335 (p=.082).

DAVIC and Level of Word Knowledge

Using the "Unknown, Acquainted, Established" coding system, several word-learning patterns were observed among the participants within the DAVIC pretest and DAVIC transfer tasks. Table 2 shows the average level of word knowledge for the pretest and the transfer task for the population (n=28). During the DAVIC pretest (Definition) portion of the assessment, most participant answers (89%) displayed an Unknown level of knowledge for the target words (i.e., Cycle- "A person that you just be, act like."). Few answers (8%) displayed an Acquainted level of word knowledge for the target words (i.e., Glacier- "Big ice."), and even fewer (3%) demonstrated an Established level of word knowledge for the target words (i.e., Cycle- "Something that repeats."). Following exposure in context and with scaffolding provided through Graduated Prompting, most participant productions (55%) demonstrated an Acquainted level of knowledge (i.e., "I see evaporation when my mom makes tea."). Additionally, more productions were

found to exhibit an Established level of word knowledge (i.e., "The story has the word evaporation which means to turn liquid into gas.") after Graduated Prompting (16%) than before Graduated Prompting (3%). Finally, the number of productions that showed an Unknown level of word knowledge (i.e., "If it erosion I wouldn't know what to do.") greatly decreased from 89% to 29%. The DAVIC graduated prompting phase had a large effect (d=2.84) on the observed improvement.

Discussion

The purpose of this study was to expand the current body of literature on dynamic assessment by piloting a graduated prompting protocol focused on contextual analysis. This study also aimed to determine how well fourth-grade children could use graduated prompts focused on contextual analysis to derive word meaning. Results from the current investigation suggest that the typically developing participants in this study knew how to use context clues to find word meaning before being exposed to the graduated prompting procedure. This is evidenced by the fact that most of the participants were able to demonstrate an Established level of word knowledge after Prompt 2 (given the reading passage and told to use context clues). It is possible that contextual analysis is a skill that is covered in the classroom setting due to the inclusion of context clues on Common Core and state academic learning standards. Therefore, the current study provides more information about the amount of support the participants needed to demonstrate word learning as opposed to the specific contextual analysis strategies used. Results from this study support the Kuhn and Stahl (1998) metanalysis in that the "specific strategy instruction in deriving words from context does not have any advantage over merely providing children with practice in deriving word meanings."

Although this study does not provide evidence for teaching any specific contextual analysis strategy, the current study demonstrates that 1.) A graduated prompting task can reveal practical information about the level of word knowledge obtained from context 2.) Graduated prompts can reveal practical knowledge regarding the amount of support needed to derive word meaning from context, and 3.) Dynam-

Table 2

Average Level of Word Knowledge by Pretest and Transfer Task Percentage n=28

	Unknown	**Acquainted**	**Established**
Pretest	89%	8%	3%
Transfer task	29%	55%	16%

ic Assessment can play a part in closing the achievement gap found with Standardized Assessments.

Graduated prompting and level of word knowledge

Word knowledge is based on exposure, and the complexity of vocabulary knowledge can be revealed within levels: Unknown, Acquainted, and Established (Beck et al., 1979). Standardized assessments such as the EOWPVT-4 measure vocabulary knowledge but do not provide information regarding the specific level of word knowledge. Instead, standardized vocabulary assessments indicate whether a word is known or not. However, words are not simply "known" or "unknown" because knowledge about a term's meaning occurs in stages. For example, having a child name or point to a picture of an item does not reveal information about the child's ability to use the word. Further, having a child define a word does not provide information about that child's knowledge of the word in context. Finally, neither of those evaluation methods informs intervention by providing information about the amount of support a child needs to derive meaning. Graduated prompting provides practical word-learning information that is not captured by traditional standardized tests. This study showed that graduated prompting could be used to examine both vocabulary knowledge and word-learning potential. Before the graduated prompting procedure, most participants displayed an Unknown level of knowledge of the target words. Following the DAVIC procedure, most participants could appropriately use the target words in a sentence, demonstrating an increased number of Acquainted and Established responses.

Graduated prompting and level of support

In the current study, the DAVIC provided information about the amount of scaffolding necessary for a child to learn the meaning of a word. The results revealed that the participants were able to derive word meaning more frequently at Prompt 2 than at any other prompt level. At this level, participants were given the passage to look at and were told to use context clues to define the word. Participants were not told how to find a context clue and were not instructed on what a context clue was. Despite the lack of instruction provided, Pass and Non-Pass group participants performed almost equally in the Prompt 2 category. The data collected shows that most participants, despite their performance on a standardized test, were able to derive word meaning after being exposed to the target word in context (Prompt 2). This provides clinical implications regarding the amount of support a child may need to derive word meaning

from context. Specifically, information from the earlier mentioned Table 1 reveals that most children in this study could derive word meaning from context, and those that could not, were generally able to respond when given higher levels of support.

Word Knowledge vs. Word Learning Ability

The research site for this study was a low-income school per public records. Studies show that low-income children perform poorly on standardized vocabulary tests (Burton & Watkins, 2007; Washington and Craig, 1992). Because children with language disorders were excluded from this study, it was presumed that the current study sample only consisted of children with typical language abilities. Despite this, out of the twenty-eight participants, half (n=14) had a standard score lower than 85 on the EOWPVT-4. Current findings are consistent with prior research, which found that the majority of low-income African American children assessed with a standardized vocabulary test scored below the mean (Washington and Craig, 1992).

Graduated prompting with contextual analysis may be a useful tool to address the achievement gap found when administering standardized assessments to marginalized populations. A significant finding in this study was that there is no relationship between word knowledge as measured by the EOWPVT-4 and word-learning potential as measured by the DAVIC. Participants who scored poorly on the standardized test also scored lower on the Dynamic Assessment pretest. Both of these were assessments of word knowledge as opposed to word learning ability. However, when word-learning potential (or ability) was evaluated with the DAVIC, the children from Pass and Non-Pass groups performed similarly.

Clinical Implications

A basic tenet of Dynamic Assessment is that the information obtained can be used to plan intervention. Therefore, the current study presents clinical implications. First, a feature of the DAVIC is that in addition to determining whether a child has learned a word or not, information gained from the DAVIC process can be used to identify how well a child knows a word (Unknown, Acquainted, Established). Clinicians and educators may find this system more informative than the traditional binary (right or wrong) system of assessing word knowledge.

Next, Graduated Prompts aimed at context clues may assist educators with determining the amount of instruction that a child requires to derive word meaning successfully. This instruction can be implemented practically to determine if the child responds

to intervention.

Finally, a practical model for evaluating word knowledge from sentence production was developed. This was necessary because the requirements for producing a sentence are quite different than the requirements for producing a definition. For example, according to Appendix A, in order to demonstrate an established level of knowledge of "precipitation", the participant had to mention rain, sleet, or snow. However, many students used the word appropriately in a sentence but did not refer to an actual form of precipitation. For example: "In the winter precipitation happens"; and "There was a lot of precipitation during December and January." These productions are acceptable uses of the term. Therefore, syntactic appropriateness should be considered when determining the level of word knowledge during a sentence production task. This is supported by the lexical quality hypothesis, which states that the semantic constituent of a word includes word meaning in addition to grammatical information (Perfetti & Hart, 2002). In this study, a production was deemed Unknown when it displayed no knowledge of the target word; a production was deemed Acquainted when it demonstrated either semantic or syntactic knowledge, and a production was deemed Established when it demonstrated both semantic and syntactic knowledge. This information may be useful in the educational setting because it illustrates that children can show knowledge about a word without providing a specific definition. Further, if a child can use a word appropriately, then they are demonstrating that they have at least an Acquainted level of word knowledge.

Limitations and Future Research

One aim of this study was to determine how well fourth-grade children could use graduated prompts focused on contextual analysis to derive word meaning. While the current study did show that graduated prompts aimed at context clues could provide information about word learning with the sample used, more research is necessary before findings can be generalized to other populations. This study examined primarily low-income, African-American students. More research is needed with a larger sample of children from various backgrounds.

Future research should examine the substitution strategy in a graduated prompting model. The method of substitution used in this study may not have been an effective strategy when examining academic vocabulary. Most participants (17 out of 18) who attempted Prompt 5 were not able to derive word meaning. Although prior research regarding the SCANR method (Jenkins et al., 1989) has shown substitution to be effective as a word-learning strategy, the current study used a modified substitution

procedure which may have decreased its effectiveness. Another reason for the ineffectiveness of the substitution strategy during this study could be the use of content-specific (academic) words. Academic vocabulary words such as "erosion, condensation, and weathering" are not easily substituted by other words. Therefore, successful implementation of the substitution strategy may have been influenced by the type of words chosen. Also, because of the challenging nature of substitution (find a synonym), this strategy may have been more appropriately placed earlier in the graduated prompting hierarchy.

The current study provides information about the level of immediate word learning. However, future research should longitudinally examine the effectiveness of word learning gained through the Graduated Prompting process.

In conclusion, using graduated prompts aimed at context clues can reveal a range of abilities with regards to the amount of support a child needs to derive word meaning. Additionally, by using the DAVIC to assess word learning ability, the incremental nature of word learning (Unknown, Acquainted, Established) can be evaluated. Using a graduated prompting Dynamic Assessment such as the DAVIC can also close the achievement gap found on standardized vocabulary tests by measuring what a child can learn as opposed to assessing what a child already knows.

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