

Performance of EAL learners on a non-South African Articulation Test (*GFTA-2*)

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ABSTRACT:

Research on the various aspects of child language development in South Africa has generally been an area neglected by specialists in the study of language. In South Africa's multilingual urban settings, English is the language of mutual understanding in most classrooms. The assessment of language (including speech sound production) in English additional language (EAL) pre-schoolers is hampered by the fact that insufficient standardized resources are available for use with young multilingual South African children. Research indicates that the *Goldman-Fristoe Test of Articulation – Second Edition (GFTA-2)* is a popular formal assessment instrument used for assessing children's articulation abilities by many speech-language therapists in South Africa. The study described the performance of English second language learners, aged between four and nine years, on the *GFTA-2* in an urban region in the Gauteng province of South Africa. A descriptive, dominant-less-dominant model research design was used. No significant difference in performance between the second language learners and the normative indicators was noted. The results illustrate the need to adapt the *GFTA-2* for the South African context.

Key words: *GFTA-2, speech, urban South African context, English second language (first language Northern Sotho speakers)*

Introduction

Incorrect production of speech sounds by young children may not seem to be a serious matter or one related to academic prowess. In fact, it is often regarded as part of regular development; and indeed some speech sound simplifications are typical of the speech of young children. When these mispronunciations persist, however, or when atypical mispronunciations are evident, more than speech intelligibility may be at stake.

School-aged children with speech sound difficulties often have poor sight reading and general reading fluency skills in comparison with children with typical speech skills (Apel & Lawrence, 2011). Moreover, children with speech sound difficulties may be at risk for spelling difficulties. These difficulties are related to phonemic awareness as well as morphological awareness, indicating a basic lack of linguistic awareness. It follows that literacy and literacy-related tasks become acutely challenging (Apel & Lawrence, 2011). Accurate and appropriate early assessment of speech sound production in the language of learning emerges as an essential part of general language assessment.

Some researchers have adapted and/or developed child language assessment tools in South Africa, not only in English but also in certain African languages (Alant & Beukes, 1986; Bortz, 1997; Pakendorf & Alant, 1997; Pretorius, 1989; Southwood, 2013). To date, however, the validation and standardization of these adapted and/or developed tools has not been concluded (Pascoe & Norman, 2011). While opportunities exist for developing or adapting a wide range of available assessment materials to improve cultural and linguistic applicability exists (Pascoe & Norman, 2011), the need for the adaptation and development of articulation tests is evident, considering the prevalence of speech sound difficulties.

Although previous research has not yet determined the prevalence of speech difficulties in South Africa (Pascoe, et al., 2010), in the United States of America (USA) it is estimated that approximately 7.5% of children between 3 and 11 years of age experience speech difficulties (Ruscello, 2008). The prevalence of speech sound difficulties may be even higher in South Africa than in developed countries such as the USA (Pascoe & Norman, 2011). Various possible additional contributing factors have been identified and reported in the literature. These factors include children living in poverty (Msall, Bobis & Field, 2006), HIV/AIDS and a low socio-economic status (Eloff, Louw & Popich, 2007), as well as other related issues such

as fetal alcohol spectrum disorder, prematurity, low birth weight and cerebral palsy (Kritzinger, 2000), all of which place children are at high risk for hearing loss, feeding complications and communication disorders. There may therefore be a higher prevalence of speech sound difficulties in South Africa than in the USA and Europe.

South Africa's multicultural and multilingual population has been widely discussed from various angles (Pascoe & Norman, 2011). The existence of 11 official languages and a variety of unofficial languages and dialects are proof of the acutely multicultural nature of the South African population. Multilingualism in both urban and peri-urban areas has substantially increased in the past decades. This may be especially true for the country's paediatric and child population which is largely accommodated in care centres and schools for a significant part of the day (Kritikos, 2003; Shipley & McAfee, 2009). Research has indicated, for example, that children attending pre-schools in an urban area in Gauteng represent more than 14 languages including not only the official languages of South Africa but also African languages from other African countries (for example Swahili) and European language such as French and Portuguese (Du Plessis & Naudé, 2003; Naudé, 2005).

This has created challenges for both the teachers and the speech-language therapists who function as support personnel in the education context (Du Plessis & Naudé, 2003:126). In South Africa's multilingual urban settings, English is the language of mutual understanding in most classrooms (Naudé, 2005:3). The assessment of language behaviour (including speech sound production) in English additional language (EAL) pre-schoolers is hampered by the fact that formal tests appropriate for use with young multilingual children are not available for South Africa (Pascoe & Norman, 2011; South African Speech Language and Hearing Association [SASLHA] 2003). Teachers and therapists have long abandoned the idea of "limited English proficiency" (LEP), and especially the negative connotation of deficient language skills accompanying this label. English as additional language (EAL) is accepted as one standard found in South African classrooms. It remains a challenge, however, to determine whether a particular child's English resembles that of the other EAL pre-schoolers, or demonstrates some non-typical characteristics.

One way of meeting this challenge would be to develop contextually relevant resources that are tailor-made for a specific South African context (Pascoe &

Norman, 2011). Some researchers have conducted small-scale investigations into the possibility of developing an instrument for particular South African languages and contexts (e.g. Joubert, 1996; Von Wielligh, 2001). An instrument was developed in Afrikaans (Lotter, 1974) but, from the point of view of cultural compatibility, it is both outdated with regard to word and picture content, and standardisation was limited to one geographical area. An alternative would be to adapt existing materials to improve their cultural and linguistic applicability. The additional benefit of this course, for research purposes, is that the option of transferring assessment materials already standardised for one language and/or culture to another allows for cross-cultural comparisons. From a practical viewpoint, it takes less time and is less expensive to adapt existing assessment materials than to develop new assessment materials (Hambleton & Patsula, 1998). The reasonable route would seem to be: select a trustworthy instrument, adapt the content material, compare original standardised norms to normative indicators, and then confirm the norms or establish new norms accordingly. This process may need to be repeated for various sections of the target population, precisely because of the diversity of that population.

With regard to the adaptation of existing tools, it is wise to consider in the first place the tools that are widely used within the specific local context. In South Africa many of the assessment materials used by speech language therapists were developed and standardised by clinicians and researchers in other countries, for example Australia, the UK, and the USA (Pascoe et al., 2010). For this reason, a number of assessment materials used in South Africa are not contextually relevant (Pascoe & Norman, 2011). The differences in life experiences (especially for children) are not the only variables to be considered. Since South African English differs from British and American Standard English (see e.g. South African Concise Oxford Dictionary, 2002), language tests have to be adapted for the various forms of South African English (Pascoe & Norman, 2011). Adapting tests that focus on speech sound production only may be less challenging in this regard than tests of grammar and general language use.

Pascoe et al. (2010) compared the popularity of different articulation assessment materials used by speech-language therapists in the Western Cape Province of South Africa. The results of their comparison indicated that The Goldman Fristoe Test of Articulation – second edition (*GFTA-2*) (Goldman, Fristoe

& Williams, 2000) was the most popular formal articulation assessment instrument used in this particular area (Pascoe et al., 2010). Although no research data are available for other regions of South Africa the *GFTA-2* is generally regarded as a widely known and often used instrument.

During the original development of this instrument, the authors made adjustments to the *GFTA-2* in order to balance the stimulus pictures with regard to gender and cultural representation in the USA (Goldman, Fristoe & Williams, 2000). Theoretically, then, it could be possible to make the relevant adjustments in a similar way for application in the South African context. An additional challenge, however, would be to determine to what extent the *GFTA-2* would meet the linguistic needs for assessing the English speech sound production of young EAL speakers.

A child from an African language environment will acquire a vowel repertoire of five to seven vowels, whereas a child raised in a South African EFL environment will acquire a vowel repertoire of 19 vowels (Seeff-Gabriel, 2003). In English 20 vowels and 24 consonants are used. In contrast, Northern Sotho (for example) consists of seven vowels and 40 consonants (Anderson & Kotze, 2005). Also, the vowel consonant ratio in English is 1:1.2, while Northern Sotho has a vowel consonant ratio of 1:5.7 (40 consonants and 7 vowels) (Anderson & Kotze, 2005). Since there is a clear discrepancy between the phonetic repertoires of African languages and South African English, it can be expected that an EAL (Northern Sotho first language) learner may lack a phonetic representation of certain sounds that indicate distinct meanings in English (Davelly, De Wet & Mopida, 2012). This may be related to a phonological feature of a dialect or accent and is referred to as *phonological differences* (D'Onofrio, 2010). It is important for speech-language therapists to differentiate between linguistically diverse clients who experience communication difficulties because of communication disorders, and those who experience difficulties because of linguistic diversity or dialectical variation without any communication difficulty (Shiplely & McAfee, 2009). The resultant differentiation will determine the need for speech-language therapy (Anderson & Shames, 2011).

Goldstein and Fabiano (2007) recommend that speech samples from both languages of the bilingual learner should be collected, as the phonological acquisition will not be parallel across the two languages. Developmental trajectories and organization of the language may be different for each of the

languages and consequently the order of acquisition and phonological patterns may differ. In general, though, the phonological development in bilingual learners is comparable, but not identical, to development in monolinguals (Goldstein and Fabiano, 2007).

The debate concerning language in the South African educational context will in all likelihood be a continuing one (see for example Kaschula, 2013). Speech-language therapists, in the meantime, have to provide answers to teachers and parents who are anxious to find out if specific learners, whether EFL, EAL or First Language speakers of African languages, may present with reading and spelling difficulty as a result of their speech sound systems. In view of the almost extreme multilingualism of the country as a whole, the only practical way forward is to turn one's hand to one circumscribed geographical or contextual area at a time. A speech-language therapist working in a specific setting needs to come to grips with the need of that particular area as thoroughly as possible. For this reason the current research project was aimed at a particular geographical setting and a particular group of learners.

The *GFTA-2* has not yet been culturally and linguistically adapted for use in either urban or rural South African contexts, although it has been informally adapted for clinical use by speech-language therapists in the past (Pascoe & Norman, 2011). Its appropriateness for both urban and rural contexts is therefore yet to be determined. The setting for the current research project was Pretoria in Gauteng and the target groups consisted of learners from two different home language groups but a largely homogeneous school language setting. Northern Sotho is the most widely spoken language in the City of Tshwane Metropolitan area (which incorporates Pretoria), as it is spoken by 19.4% of this population. Afrikaans has the second largest representation of 18.4% and Setswana is third at 14.7% (Census, 2011). As Northern Sotho is well represented in Pretoria, the researchers selected Northern Sotho speaking participants. The aim of the research is to describe the performance of EAL (first language Northern Sotho) learners on the *GFTA-2*. In order to achieve this aim it was essential to establish normative indicators, as a point of reference.

Method

Research design

A descriptive, correlation model provided the design for the study. This enabled researchers to determine the statistical correlation between the normative indicators and EAL (first language Northern Sotho) (Group 2) speakers. English first language speakers were included in the research as a means to establish normative indicators representative of an urban South African context. The term *normative indicators* refers to the average performance of EFL learners for each item on the GFTA-2.

Ethical considerations

Ethical clearance was obtained from the Research Committee of the Department of Communication Pathology, University of Pretoria. The researchers received written permission from the various schools that were contacted, allowing the research to be conducted on their premises. Written consent was granted by the parents or legal guardians for their children to participate in the study. The young participants, on their part, granted written (graphic) assent by selecting the appropriate illustration on a form of assent. Participants were given alphanumeric codes to ensure anonymity. Furthermore, the researchers aimed to conduct the research according to the ethical principles of avoidance of harm and of confidentiality (Strydom, 2011).

Participants

The sampling process is discussed according to the criteria for selection, the sample size and sampling method.

Criteria for selection of participants

All participants included in the study were required to meet the following criteria:

- English had to be the participants' language of learning.
- It was important to confirm that all the participants' general language and phonological awareness abilities were age appropriate. Therefore potential participants' language and auditory processing skills were assessed.

- Both male and female participants were selected from two different groups, namely English first language (EFL) (Group 1) and EAL (first language Northern Sotho speakers) (Group 2) learners.
- The participants in Group 1 and Group 2 had to be aged between 6;0 and 7;11 [years;months]. Since EAL learners were targeted older children were selected to ensure that their exposure to English as an academic language was 12months or more.

Sample size and sampling method

Non-probability, purposive sampling was used for the selection of participants. Each Group consisted of 11 participants. A total of 22 participants were included in the research. Research has shown that it is possible to construct a profile of typical English language behaviours for certain aspects of language using language data collected from a small group of EAL speakers (Naudé, 2005). This may also be true for the phonological aspects of language.

Description of participants

It has been widely recognised that gender differences exist in the developmental growth of articulation ability (Goldman & Fristoe, 2000). The researchers therefore included an equal distribution of male and female participants in the study.

Since the researchers required normative indicators for an urban South African context in South Africa, EFL learners were included as Group One. Group Two consisted of the EAL (first language Northern Sotho) learners. In order to reflect on the applicability of the GFTA, the researchers had to determine the performance of these learners against the normative indicators for an urban South African context. The percentages of male and female participants were 45% and 55% respectively. Although the first language of the participants in Group two is Northern Sotho, it was reported that 55% of the participants predominantly receive language input in English at home and at school. In the assessment of bilingual children it is essential to obtain the language history of the child (Goldstein & Fabiano, 2007), as knowledge concerning the amount of input in each of the languages is crucial for accurate interpretation of the findings.

Data collection methods

The data collection methods are discussed according to the data collection material and data collection procedures.

Data collection material

Quantitative data were obtained from completed case history forms, the field notes, *Kindergarten Language Screening Test second edition (KLST-2)* (Gauthier & Madison, 1998), mean length of utterance (MLU), type token ratio (TTR), Test of Auditory Processing Skills-Third Edition (*TAPS-3*) (Martin & Brownell, 2005) and the *GFTA-2*. Pictures published by Shipley and McAfee (2009) were used to gather an English spontaneous speech sample (picture descriptions) with which the MLU and TTR were determined. The MLU, TTR, KLST-2 and TAPS-3 were utilized to ensure that only participants with age appropriate language skills were included in the study.

The *GFTA-2* is an articulation test that samples all of the consonant phonemes of English (except /ʒ/) using a single-word, picture-naming task. The consonants are sampled in initial, medial, and final positions in words (with certain exceptions as regulated by the phonotactic rules of English) and in several word-initial clusters (Flipsen, 2011).

Data collection procedures

- The pilot study was conducted and the necessary changes were made before the main investigation commenced. The participants complied with the selection criteria. After completion of the pilot study the field note processing was refined to limit the administration time (a section on semantics was excluded from the field notes). Apart from the changes to the field notes, the procedure and measuring instruments were deemed effective.
- The researchers obtained informed consent from potential participants' parents prior to data collection.
- The researchers visited the five designated independent schools, collected the selected participants from the classrooms and explained the procedure to them.
- The researchers handed out the assent forms, on which a happy face and sad face were illustrated, to the participants. If the participant wanted to withdraw a simple selection of the sad face sufficed.

- The use of the audio recording was explained in detail to the participants.
- The audio-recorder was switched on.
- The researchers administered the tests to each participant (*TAPS*, *KLST-2* and *GFTA-2*). All three sections of the *GFTA-2*, i.e. sounds in words, sounds in sentences and stimulability, were administered.
- The *GFTA-2* responses of Group 1 were interpreted by means of the normative indicators obtained from the *GFTA* responses of Group 2. The performance of the participants was described according to the normative indicators. Since it is recommended that an age of mastery should be set individually for each client to establish their own developmental criteria (Goldman, Fristoe & Williams, 2000), the researchers will be describing the data against the normative indicators and no diagnostic statements will be made.
- The MLU and TTR of the participants were determined through analysis of the representative, spontaneous speech sample obtained during conversation.
- The researchers typed out the summaries of the performances of the participants.
- The researchers compiled a letter to those parents who did grant permission, but whose children were not selected as participants. The letter explained that these children could still be assessed, if the parents so wished.
- The summaries and 32 letters to the parents whose children were not used as participants were handed to the teachers for distribution to the specific parents.

Validity

The *GFTA-2* was implemented to measure and to compare the performance of the participants in Group 1 and the participants in Group 2. The field notes were comprehensive and the information obtained corresponded with the aim of the study. It can be assumed, therefore, that the field notes described what they were intended to describe. The selected material and apparatus were standardized instruments and literature reviews were conducted in order to determine that the instruments truly measured the characteristics under investigation (Goldman, Fristoe & Williams, 2000; Gauthier & Madison, 1998).

Reliability

The *KLST-2* and the auditory discrimination section of the *TAPS* were administered to the 22 participants according to the prescribed guidelines, so that the

measurements were repeated under constant conditions, which increased the inter-rater reliability (Delpont, 2002). Two members of the research team conducted the assessments. Each member was assigned 11 participants (five/six from EFL speakers and five/six EAL -first language Northern Sotho speakers). Consistent scoring procedures were maintained throughout the study (Salkind, 2006), by following the administration procedures as outlined in the manual of the GFTA-2.

The researchers conducted a pilot study and were able to identify limitations in the data collection and changes were made to improve inter-rater reliability. Data were triangulated, since the *GFTA-2* and the field notes provided a comprehensive illustration of the participants' performance with regard to speech sound production.

Data analysis

Data obtained from the *GFTA-2* and the field notes were triangulated. Data preparation included checking and editing of the data and supplementing the field notes with corresponding voice recordings. The researchers assigned numerical values to the different variables and stored the data electronically on Microsoft Excel, which was used to capture the field notes to export them later into *STATA* format. The converted data were analysed quantitatively according to the *STATA 12.1 system: data analysis and statistical software*.

The researchers made use of descriptive statistics that included a simple frequency distribution where the frequency counts and relative percentages were displayed graphically as well as in table form (Fouché & Bartley, 2011). Cross-tabulations as well as Kruskal-Wallis nonparametric tests were used to determine whether there was any association between the groups' outcomes and a difference in performance on the *GFTA-2* between Group 1 and Group 2.

Results

Normative data were obtained to realise the aim of the study, i.e. to describe the performance of EAL (first language Northern Sotho) learners on the *GFTA-2* in an urban South African context and to reflect on the linguistic applicability of the test.

Normative indicators

The participants in Group 1 (EFL learners) were assessed to establish normative indicators for an urban, South African context. Apart from the target sounds

presented in Table I, the results indicated 100% correct articulation of all the English consonants. In comparison to the *GFTA-2* norms, scores ranged between 86% and 100% correct articulation of the target sounds (consonants) in the English language (Goldman, Fristoe & Williams, 2000), revealing that the normative indicators are similar for the original sample and the current sample.

Table I: Comparison between the *GFTA-2* norms (Goldman, Fristoe & Williams, 2000) and the normative indicators for the production of a specific target sound

Target sound	Position	GFTA norms**: 6,0-6,11 and 7,0-7,11*	Normative indicators 6,0-7,11*
e	Initial	79%-90%	82%
e	Medial	62%-81%	82%
e	Final	90%-97%	82%

*The percentage correct responses

**Obtained from Goldman, Fristoe and Williams (2000)

Table I illustrates an adequate measure of correspondence between the norms of the *GFTA-2* and the normative indicators established in the current study for the normative indicators to be deemed reliable. Since it is recommended that an age of mastery should be set individually for each client to establish their own developmental criteria (Goldman, Fristoe & Williams, 2000), the researchers will be describing the data against the normative indicators and no diagnostic statements will be made.

Sounds-in-Words and Sounds-in-Sentences section of the GFTA-2 – results for Group 2 (EAL learners)

Since the results of the *Sounds-in-Words* and *Sounds-in-Sentences* section of the *GFTA-2* were similar the results are presented jointly.

The EAL learners produced all English consonants correctly compared to the normative indicators. The percentage correct production of the /ə/ sound in the initial and final positions in a word was 91% and 82% respectively, and these scores correlate with the normative indicators of 82% for each of these positions in a word.

Although the *GFTA-2* focuses on the articulation of consonants in English, it is necessary to explore the whole phonetic repertoire of bilingual learners (Goldstein & Fabiano, 2007). The English vowel repertoires of the EAL learners were evaluated in addition to the consonant repertoires. Significant differences in the

pronunciation of vowels between the normative indicators and the EAL learners were noted. For example, the neutral vowel [ə] in the target word *pyjamas* was pronounced [i] (as *pijamas*) by 36% of the participants. Furthermore, the vowel [ɜ] in the target word *girl* was pronounced as [æ] (*gal*) and [i] (*gil*) (45% and 9% respectively). Seeff-Gabriel (2003) stated that learners whose first language is an African language, in this case Northern Sotho, have limited vowel repertoires when compared to English first language learners. According to Clements and Rialland (2005), the vowel /ɜ/ and the neutral vowel /ə/ are not familiar to Northern Sotho speakers. Evidently, the current results agree with previous research findings stating that EAL learners (first language Northern Sotho speakers) have first-language-specific vowel repertoires (Clements & Rialland, 2005). The results suggest, therefore, that the articulation of vowels and diphthongs should be evaluated as well, in order to obtain an accurate and holistic view of the client's articulation abilities. This is of specific relevance on account of the possible influence of production on perception and the complexity of English spelling rules for vowel sounds. Consequently, the GFTA-2 should be adapted by including all the vowel sounds in the sounds-in-words and sounds-in-sentences subtests.

Appropriateness of the target words

Figure I indicates that there were target words in the Sounds-in-Words section of the *GFTA-2* that were not elicited as expected by the stimulus materials.

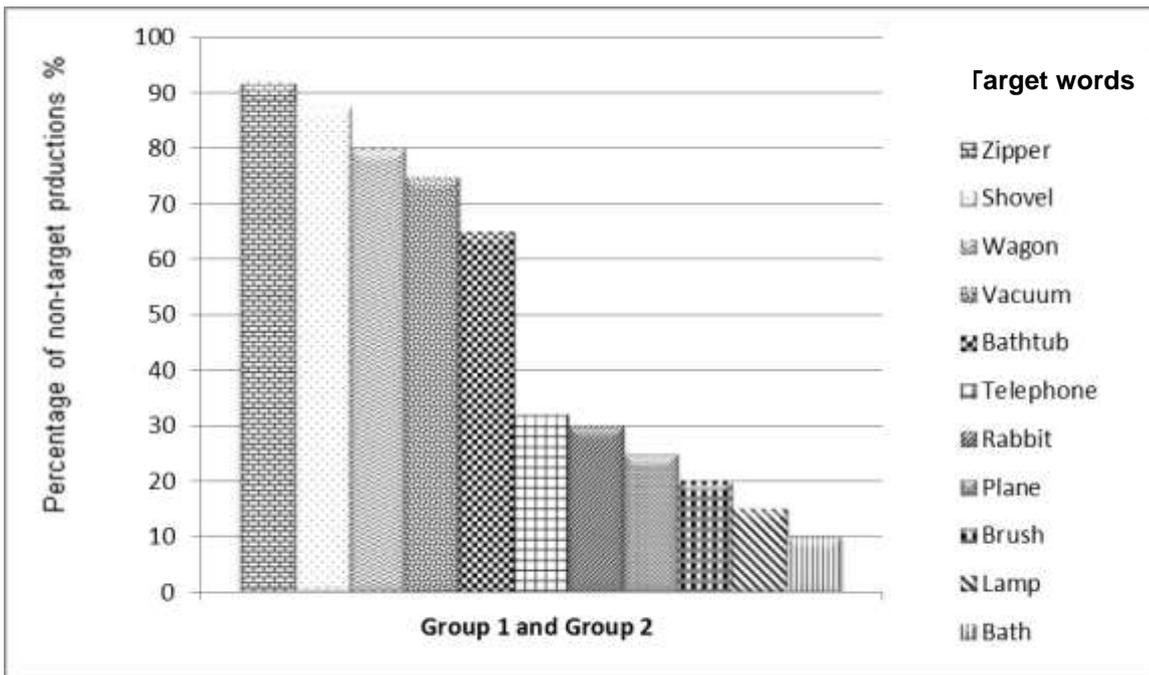


Figure I: Target words that did not elicit the desired response in the Sounds-in-Words section of the GFTA-2

The results in Figure I illustrate that some of the pictures did not elicit the desired responses from the participants. A wagon, for instance, is not an object used regularly in an urban community in South Africa. Therefore the applicability of these target words for an urban South African context should be questioned. Furthermore, cultural influences on the responses elicited in the Sounds-in-Words section of the *GFTA-2* should be addressed in future research.

The results indicated that most of the participants used the same words for substituting the target words. In Table II the responses that were elicited for five of the target words are presented.

Table II: Responses elicited by target words

Target words	Responses elicited
Shovel	Spade
Wagon	Trailer; wheelbarrow; trolley
Zipper	Zip
Bathtub	Bath, water
Bath (verb)	Wash

Table II reveals that the participants used synonyms that were more familiar in the South African context. It is important, therefore, to consider a general contextual adaptation of the *GFTA-2* in South Africa, rather than a culture specific

adaptation. It is worth noting, though, that several of the replacement words have initial sound phonetic characteristics that correspond with the characteristics of the target words (e.g. wagon – wheelbarrow, zipper – zip, bathtub – bath). One of the strategies for adapting the GFTA-2 could be to re-examine the target words for possible redistribution of specific sounds targeted.

A number of target words in the Sounds-in-Sentences Section of the *GFTA-2* were not elicited with the corresponding picture plates. Participants used the same substitutions that they used for the individual target words. There were target words in the Sounds-in-Words and Sounds-in-Sentences section of the *GFTA-2* that were not elicited, for example *wagon* and *shovel*. This highlights the fact that these target words may be inappropriate for the South African context. These results indicate that the adaptation of the *GFTA-2* should be addressed in future research, especially to determine which picture plates are inappropriate for children in the South African context.

Discussion

The research reported here, basic and elementary though it may be, indicates the way forward in various respects for developing articulation test materials to be used with South African children.

The articulation abilities of EFL and EAL (first language Northern Sotho speaking) school-aged learners from independent schools in the geographical area that was studied (a section of urban Pretoria) were found to be largely similar, with evident differences only in the production of certain vowels. Although no statistical differences were noted when comparing the pronunciation of consonants in the target words, the differences in the pronunciation of vowels warrant further investigation. Future research should examine the potential variables (e.g., context of acquisition, particular segments studied, type and token frequency of segments in the lexicon, etc.) that have been demonstrated to affect learners' sensitivity to L2 segments at the lexical level (Baker & Trofimovich, 2008; Saadah, 2011). Secondly, researchers would need to control the lexical variables such as word frequency, subjective word familiarity, or lexical neighbourhood density (Baker & Trofimovich, 2008) that could be at work in the stimulus material.

A number of the participants substituted some of the target words - verbs, common nouns, proper nouns and adjectives - with more locally familiar words in

both sections of the *GFTA-2*. The results also indicated that participants in Group 1 and in Group 2 concurred in terms of the words they used to substitute the target words in the Sounds-in-Words and Sounds-in-Sentences sections. It appears possible that there is more shared culture than differences in culture between children of different language backgrounds in urban Pretoria. Should future research support the results of this study, appropriate adaptations would need to be made to the *GFTA-2*, bearing in mind that the cultural appropriateness of any stimulus may differ to a certain extent with context changes from urban to rural. Alternatively, a new, contextually relevant articulation assessment instrument could be developed along the guidelines of the *GFTA-2*. The areas assessed with the *GFTA-2* (sounds in words, sound in sentences and stimulability), for instance, can be supplemented by adding vowels and diphthongs to each of the sections. This will enable the speech-language therapist to gain a better understanding of sounds to be targeted in auditory discrimination and phonological awareness activities. Furthermore target words and stories should be selected that are appropriate for the South African context.

Conclusion

The fact that this research project was undertaken by speech-language therapists points to a significant, although somewhat indirect, conclusion. Parallel to the need for developing new resources and adapting existing resources to be culturally and linguistically appropriate, is the need for speech-language therapists themselves to be competent in providing services to clients from different cultural and linguistic backgrounds. In order to achieve such competence clinicians will have to strengthen their liaison with professionals in the fields of applied linguistics and sociolinguistic studies.

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