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Tests over time: evaluating the currency of normative data in a complex multilingual environment

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Running head: Normative data in multilingual environments

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Normative data in multilingual environments

Tests over time: evaluating the currency of normative data in a complex multilingual environment

Abstract

The diagnosis of language impairment is challenging in complex multilingual environments. With language policies promoting increased use of English and reduction in use of dialectal varieties of languages, rapid changes in language further confound assessment.

This study explores the currency of normative data on an expressive language screening tool for English-Mandarin bilingual children in Singapore.

Spoken language samples in English from 101 pre-school children were compared with those from 481 children in the original data collection in 2002. Scores for expressive vocabulary and expressive morphosyntax were compared for the two main language groups.

Results indicate that the normative data for the English dominant children were still current. The data for the younger Mandarin dominant children showed improved test scores, indicating significant improvement in expressive morphosyntax in English.

These results show that English language competency has changed over time for this population, and that this is a particular challenge in complex multilingual environments. Best practice in speech-language pathology would see development of language assessments specific to individual populations and language groups. These results demonstrate the need to monitor changes in language over time, and to update language assessments accordingly to facilitate the assessment and diagnosis of language impairment in these populations.
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Background

The diagnosis of language impairment (LI) is particularly challenging in complex multilingual environments (Kohnert, 2010; Gn, Brebner, McCormack, 2014; Teoh, Brebner & McCormack, 2012). With language policies promoting increased use of English and reduction in use of dialectal varieties of languages in many countries, rapid changes in language further confound accurate assessment and diagnosis. Across Africa, many countries such as Ghana (Kwasi Opoku-Amankwa, 2009) and Namibia (Frydman, 2011) are introducing English-only language in education policies in an attempt to ensure equitable access to education in multilingual societies, as well as perceived benefits of competence in the “global language”. South America has seen similar changes in language use, with increased use of English to a wider population through programs such as the “English Opens Doors Programme” in Chile, designed to permit equitable access to English instruction as well as a general increase in economic competitiveness (Matear, 2008). The changes in language policy in the People’s Republic of China (PRC) are outlined by Mao and Min (2004), stating that foreign language education in the PRC has seen many changes over the past 60 years, related to political and social change. The teaching of English in the PRC has increased with language policy change in 1983, relating directly to the belief that English language proficiency will facilitate modernisation and seeing English proficiency in the PRC continuously improving (Mao & Min, 2004). Likewise, in South-East Asia, English is equated with modernity, and language policies are reflecting an increased use of English in education and business (Rappa & Wee, 2006).

The context for this study: Singapore

Similar language diversity and changes in language policy are apparent in Singapore, a multilingual, multicultural city state in South East Asia with a population of approximately 5 million people. The language environment in Singapore is complex and there have been
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many changes in patterns of language use over the past century (Gupta, 1994). There have been four official languages in Singapore since 1965 when Singapore became an independent country: English, Mandarin, Malay and Tamil. English has been spoken in Singapore for more than a century (Gupta, 1994). There are two forms of English spoken: Singapore Standard English (SStdE) and Singapore Colloquial English (SCE). SCE is the lingua franca, and the form of English most frequently used in everyday conversations. Formal education occurs in SStdE, supplemented with daily instruction in schools in ‘mother-tongue’ (based on ethnicity of the child’s father).

At Independence in 1965 the Singapore government made a pragmatic decision to adopt English as the first language of commerce and education in its bilingual policy to enhance the country’s economic development (i.e. to bring the country international trade and investment and to access Western science and technology) (Chua, 2011). They also introduced a second-language policy that required children to learn two languages in school: English and ‘mother-tongue’ which is in fact based on the ethnicity of the father. This policy originated from the government wishing to ensure that citizens did not lose their ethnic identity. However, as the ‘mother-tongue’ was recognised to not always fit the language/s spoken in the home, this was targeted for Singaporean citizens of Chinese ethnicity with the introduction of the Speak Mandarin Campaign in 1979, promoting the use of Mandarin over Chinese dialects (Rappa & Wee, 2006).

In the early years, English was a foreign language to most Singaporeans and learning English was difficult as the overall environment was not supportive of its acquisition (Chua, 2011). Using a top-down approach of implementing holistic, well-coordinated and well-funded policies with the Ministry of Education (Singapore’s Education budget is more than 20% of the country’s total budget), other government bodies and the media, Singaporeans are extensively exposed to English (Chua, 2011). Curriculum developments were actively refined
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to give English education more emphasis and in 2010, the Strategies for English Language Learning and Reading (STELLAR) program was launched in schools to strengthen language and reading skills through the use of learner-centered teaching pedagogies (Chua, 2011).

Preschool education in Singapore offers a minimum of three years of educational program (Nursery, Kindergarten 1 and 2) commencing the year that children turn four. Although all Singaporean children have an equal opportunity to learn English starting from preschool education, the English competency level of children varies (Chua, 2011) and this has been related to bilingualism and language dominance (Teoh et al., 2012; Gn et al., 2012; Brebner, 2010; Gupta, 1994).

Chua (2011) in her discussion paper exploring Singapore’s language policies, states that Singapore’s migration policy is affecting bilingual policy in two ways. Firstly, increasingly new migrants whose first language is neither English nor Singapore’s official ‘mother-tongue’ languages are entering the school system. To support these students, bridging curriculum to support their learning of the official ‘mother-tongue’ languages has been necessary before they join the school system. Secondly, Chua (2011) argues that when English is learned simultaneously with their ‘mother-tongue’ languages, speakers develop code-switching and code-mixing ability. The consequence is an increased difficulty in segregating SStdE from SCE. In an attempt to address this issue, policy makers have attempted to eradicate SCE by broad campaigns such as the Speak Good English campaign initiated in 2000 (Speak Good English Movement, 2000).

Attempts to improve the English spoken in Singapore have been contentious as while SCE is often considered inferior to SStdE, many Singaporeans value SCE as the lingua franca and as an expression of their cultural identity (Gupta, 1994). English in Singapore has generally been considered to be on a continuum from the low form (SCE) to the high form (SSTdE) (Gupta, 1994). This further complicates the assessment of language skills as there
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are two forms of English spoken, with most children starting by learning SCE then learning SStdE on starting formal education (Gupta, 1994). Additionally, children are bilingual if not multilingual. This has implications for the development of all their languages, as bilingual language development is known to differ from monolingual language development (Bedore & Peña, 2008; Kohnert, 2010). There will likely be cross-linguistic transfer from their dominant language to the other language/s, influencing the developmental patterns and characteristics of the language/s. SStdE most likely starts to develop on commencement of formal schooling (Gupta, 1994), so assessment of children’s spoken English language skills needs to account for the characteristics of both SCE and SStdE, as well as the other languages that the child speaks.

Language Assessment in Multilingual Environments

It has been well established that language development differs for bilingual and multilingual children (Bedore & Peña, 2008; Kohnert, 2010). Consequently, the complexity of the language environment in Singapore has had implications for language assessment and diagnosis of LI (Brebner, 2010). The need to assess language skills in all languages is now widely recognised but this is difficult in countries where the health and education infrastructure is still relatively newly developing as there is a lack of information about the development of language in these populations, and few standardised assessment tools available (Bedore & Peña, 2008; Kohnert, 2010). In Singapore, there are very few standardised assessment tools available to speech-language pathologists. In 2002 the Singapore English Action Picture Test (SEAPT), a modification of the Renfrew Action Picture Test, was developed (Brebner, 2002). This is a screening assessment of expressive language in English, specifically targeting expressive vocabulary and morphosyntax for children aged 3 years 9 months (3;9) to 6;8. The SEAPT differs from the original Renfrew Action Picture Test in that the test was modified to better reflect cultural and linguistic
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differences. This included changes to stimulus pictures and target vocabulary, and the
development of two sets of normative data for bilingual children who speak mainly English
or mainly Mandarin in the home. The development of the SEAPT is outlined in more detail in
Brebner (2010). The SEAPT is currently the only assessment at sentence level available to
speech-language pathologists in Singapore, with other assessments focusing on cognitive
skills such as digit recall or single word level assessments of vocabulary (Lee, Sze & Rickard
Liow, 2013).

In addition to limited availability of information on typical development of language
in Singapore, and the dearth of language assessment tools, rapid changes in language use are
further complicating the situation. Clinicians and early childhood educators regularly use the
SEAPT, with normative data now over 10 years old. In the complex and changing language
environment, it was recognised that there was a need to consider the currency of the
normative data.

**Aim**

The question addressed in this study is: Are the existing normative data for the
Singapore English Action Picture Test, which were established over 10 years ago, still
representative of children’s expressive language skills in English?

**Method & Procedures**

*Participants.*

For this study, expressive language samples in English from 101 Chinese Singaporean
preschool children aged 4;3-5;8 were compared with those elicited from 481 Chinese
Singaporean preschool children aged between 3;9 and 6;8 in the original normative data.

Local government-run kindergartens from around the island were approached for both
phases of this study in order to obtain the participant sample, and all relevant permissions
were obtained prior to data collection commencing.
Eligibility criteria aimed to match the children in the later data collection closely with the participants selected in the initial normative data collection. For both studies, parents and school staff were asked to identify only those children who were considered competent in their main language. For the initial study, this information was collected through a short questionnaire and from school records, and cross-checked with teachers’ perceptions of the children’s language dominance and competence. For the second study, these data were collected using the Language Dominance Questionnaire (Tan, 2008) which addressed similar criteria. Participants were divided into two language background groups according to dominant language spoken in the home.

The original normative data were collected for children aged 3;9 to 6;8 and were divided into two language dominance groups, English dominant (EL1) and Mandarin dominant (ML1). The data were subdivided into six 6-monthly age ranges, with a minimum of 35 students in each language group for each age group to ensure statistical power: Group 1 were aged between 3;9 to 4;2, group 2 were between 4;3-4;8, group 3 were between 4;9-5;2, group 4 were between 5;3-5;8, group 5 were between 5;9-6;2 and group 6 were between 6;3-6;8. The groups were equally distributed for language dominance, with 236 children identified as speaking mainly English in the home (EL1) and 245 children speaking mainly Mandarin in the home (ML1). For the purposes of this study, the normative data from groups 2, 3 and 4 (i.e. children aged between 4;3-5;8) were used with data from 123 EL1 children and 129 ML1 children.

For the comparison group, data were collected for 101 children aged 4;3-5;8 and were divided into two language dominance groups, EL1 and ML1. The data were subdivided into three 6-monthly age ranges to match the groupings of the original normative data. Participant data can be seen in table 1.
In both phases of the study, children from different locations around the island were tested and their backgrounds compared to the available Singapore Census data (initial data collection participants to Leow, 2000, second data collection participants to Singapore Department of Statistics, 2010) for father’s educational level. Information on mother’s educational level was not available. The distribution of the participants was largely similar across samples, although the 2014 sample had higher representation of fathers with degree qualifications, which most likely represents the increase in educational level of the Singapore population as outlined in the Singapore Census data (Singapore Department of Statistics, 2010) which shows a clear pattern of increased educational attainment over the past two decades. The 2014 sample was less representative of fathers with O level (undertaken after four years of secondary schooling) qualifications, also perhaps reflecting the increased likelihood of Singaporeans completing secondary studies and going on to complete tertiary studies.

Materials.

The expressive language samples in English were obtained by administering the Singapore English Action Picture Test [SEAPT] (Brebner, 2002) (see Appendix 1 for example picture).

Research Assistants

Data were collected by the first author and a team of five Singaporean research assistants. All research assistants were current speech pathology students in an Australian
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post-graduate speech pathology program. Prior to data collection, the research assistants were trained in the administration and scoring of the SEAPT by the first author. The first author was on site for all data collection, checked test administration and that the research protocol was administered appropriately.

Procedure.

The testing protocols for both rounds of data collection were kept as similar as possible. Children were asked to describe a series of 13 pictures from the SEAPT (including three trial items) presented in test order, and to answer specific questions designed to elicit information on grammatical targets and expressive vocabulary (for example see Appendix 1). Prompting that was permitted was based on the established guidelines for test administration, as outlined in the test manual. The children were tested individually in a quiet area by the principal researcher or trained research assistant, and their responses were audio-recorded for subsequent transcription and reliability analysis. The language samples for each child were scored for Information/expressive vocabulary and Grammar/expressive morphosyntax using the SEAPT manual guidelines. Data were entered into IBM SPSS Statistics 21 (IBM Corp, 2012) for statistical analysis. Mann-Whitney U was used to compare the means of each of the paired groups due to the unequal sample size and unequal variances, and p values were corrected post hoc for multiple comparisons. The results are presented by language dominance group, and subdivided into the two subscales of Information (expressive vocabulary) and Grammar (expressive morphosyntax).

Inter-rater reliability

Inter-rater reliability measures were taken for both transcription and scoring of the language samples. Ten percent of audio-recordings of samples obtained by each of the research assistants were checked by the first author. Agreement was at 100%, with no errors that impacted on scoring of samples found.
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For the scored transcripts, the second author co-scored 20% of the transcripts. Interrater reliability was very high with Cronbach’s alpha of 0.98 for Information/expressive vocabulary and 0.97 for Grammar/expressive morphosyntax scores.

Results

For the analyses of this study of whether the normative data for the SEAPT are current more than a decade later, to answer the research question we compared the normative data collected in 2002 with the data collected in 2014 for English dominant and Mandarin dominant bilingual children. For the normative data to be still appropriate, no differences were expected in the data collected at different points in time. Medians and ranges are provided in table 3 and ranks in table 4.

*Insert table 3 about here.*

*Insert table 4 about here.*

**English language dominant**

For all of the EL1 children tested, there were no significant differences across groups for either of the two scales of Information/expressive vocabulary [Age group 4;3-4;8 $U=265.5$, n.s.; Age group 4;9-5;2 $U=277$, n.s.; Age group 5;3-5;8 $U=112.50$, n.s.] or Grammar/expressive morphosyntax [Age group 4;3-4;8 $U=205$, n.s.; Age group 4;9-5;2 $U=271$, n.s.; Age group 5;3-5;8 $U=118.50$, n.s.].

**Mandarin language dominant**

For all of the ML1 children tested, there were no significant differences across groups for the information/expressive vocabulary scores [Age group 4;3-4;8 $U=154.50$, n.s.; Age group 4;9-5;2 $U=277$, n.s.; Age group 5;3-5;8 $U=335.0$, n.s.]. For the grammar/expressive
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morphosyntax scores, there were no significant differences across groups for the children aged 4;9 or older [Age group 4;9-5;2 $U=271$, n.s.; Age group 5;3-5;8 $U=382.50$, n.s.] but there was a significant difference for the children aged 4;3-4;8 with the 2014 participants scoring significantly more highly than the original participants [Age group 4;3-4;8 $U=104.50$, $p<.03$ (with post hoc correction for multiple comparisons)].

Discussion

This study explored the currency of the normative data for the SEAPT. The results show that there has been some shift in the normative data for the children who speak mainly Mandarin in the home, but that the data for the children who speak mainly English in the home have remained stable. These results are discussed first by main language group, and then the broader implications for language assessment in Singapore are considered.

**English dominant group**

For the children speaking mainly English in the home, the normative data were found to be comparable to the data collected in the original study. This result confirms that the existing normative data for the SEAPT are representative of EL1 children’s expressive abilities on the tool more than a decade after the original data were collected.

**Mandarin dominant group**

The results for the children who speak mainly Mandarin in the home show increased proficiency in English for the younger children. This suggests that these children are either starting kindergarten having had some exposure to English in the home and therefore with better skills in English, or that they have had a stronger grounding in their first language which has better prepared them for learning English in the educational setting.

Whilst it is not possible from this study to determine which of these possible reasons is correct, the results do reflect the changes in language use that have occurred over time in Singapore. With language policy promoting the use of Mandarin rather than Chinese dialects,
there has been a change in the language spoken in the home with young children. More Singaporeans speak Mandarin now than dialects, with a decrease in the number of different languages being spoken in the home (Singapore Department of Statistics, 2010). When the original normative data were collected, the language use information showed that many children spoke either English or Mandarin with their parents and a Chinese dialect with their grandparents. For this study, many children were found to speak either English or Mandarin with their parents and Mandarin with their grandparents. This is likely to be a direct response to the policies encouraging the use of Mandarin over other Chinese languages and dialects.

**The influence of language policy on language use**

The changes in language policy have had important implications for language learning in Singapore, and the results of this study provide preliminary evidence of the reflected changes to children’s oral language skills. These changes need to be considered within our developing understanding of language development for bilingual/multilingual children. It is known that language development differs for bilingual children in comparison with monolingual children (Bedore & Peña, 2008; Kohnert, 2010). However, it is also known that language development is different for simultaneous and sequential bilinguals, and this too needs to be considered when assessing a child’s language skills (Kohnert, 2010). Acquisition for both languages has been shown to be influenced by the amount of exposure children have to the different languages they speak, and the content to which they are exposed (Bedore & Peña, 2008; Kohnert, 2010). Furthermore, it has been shown that characteristics of a non-dominant language are often learned more slowly or may fail to develop fully (Yip & Matthews, 2006). It is therefore important to assess a child in all of their languages and to consider all assessment data when making a diagnosis of language impairment (Bedore & Peña, 2008; Kohnert, 2010).
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Singapore Census data are showing that language use is changing with time in Singapore (Singapore Department of Statistics, 2010). It is possible, therefore, that the patterns of bilingualism are changing for children in Singapore. This is likely to include that children are being exposed to English earlier, and therefore becoming sequential bilingual from an earlier age than on entry to formal schooling. It could be possible too that more children are now bilingual rather than multilingual, with decreased exposure to other Chinese languages.

With the language policies about use of SStdE in Singapore and a tendency to view SCE as an inferior form of English, it is possible that children are being exposed to SStdE rather than SCE in the home rather than when they commence formal schooling. The use of SStdE has typically been indicative of higher educational levels and socio-economic status (Gupta, 1994). The recent census data show that use of English is increasing across Singapore, and that educational levels are increasing (Singapore Department of Statistics, 2010).

The regulation of early childhood education in Singapore is another possible factor influencing the use of English. The Early Childhood and Development Agency was introduced in Singapore in April 2013, and their role is as the regulatory and developmental body for early childhood education in Singapore (Early Childhood and Development Agency, 2013). There is no common curriculum across kindergartens at the time of writing this paper, although the Ministry of Education Singapore is developing the Nurturing Early Learners Curriculum which will comprise of a framework, guide for educators and teaching and learning resources (Ministry of Education Singapore, 2013). Whilst curriculum is delivered in SStdE it is acknowledged that many children commence schooling and/or kindergarten with limited competency in the standard form of English, and sometimes limited competency in SCE.
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In 1994, Gupta, from analysis of the language samples of four Singaporean children, suggested that children only started to learn SStdE on commencement of formal schooling, and that if exposed to English prior to that it was more likely to be SCE. Given that children in Singapore are considered to be native speakers of English and the highly competitive nature of schooling in Singapore, there is great pressure on children to achieve to a high standard in English competency in order to gain entry to the more prestigious secondary schools. Thus it is likely that the use of English has changed across the population and this should be further explored.

Implications for test development & revision

The results of this study show that the SEAPT normative data remain current for EL1 children, but need to be updated to better represent the English-language abilities of ML1 children. This means that updated normative data for ML1 children aged 3;9-6;8 need to be collected, and a revised edition of the SEAPT produced.

One interesting anecdotal finding of this study was that the research assistants, all Singaporean but undertaking their studies in Australia, had limited experience of language assessment in a Singapore context. They noted that the overall, participants in this study tended to be quieter and require more prompting to respond than they were used to, based on their clinical experience in Australia. This finding is consistent with those of the first author on initial test development (Brebner, 2002; 2010). This highlighted the importance of providing clear guidance on test administration, in particular on permitted prompting. The test manual outlines permitted prompting, which includes up to four prompts per test item designed to encourage further response. These prompts include, for example, strategies such as pointing to the relevant part of the picture, and repeating what the child has said with a rising intonation to encourage elaboration. It may be helpful for clinicians and other
Clinical Implications

The results of this study show that, in broad terms, the SEAPT is still an appropriate format to be used as a screening assessment of expressive language abilities in English in Singapore. The normative data for the SEAPT are still current for the children who speak mainly English in the home. However, whilst the test format remains appropriate, the normative data need to be updated for the children who speak mainly Mandarin in the home. The fact that there are these differences across language groups indicate that this is due to changes in language use, rather than the assessment tool itself. Additionally, anecdotal feedback from the research assistants suggests that the test manual needs to be revised to more clearly explain the process of test administration (particularly prompting) and scoring.

The results reflect the importance for clinicians of considering children’s language skills within the broader context of societal language use and language policies. The rapid changes in the language environment in Singapore have resulted in changes to typical language skills and language development for children. Thus, clinicians need to understand the broader context and critically analyse the assessment tools that they are using to determine whether they reflect current language use.

This applies more broadly to an international context. With many countries such as the PRC (Mao & Min, 2004) and many other Asian (Rappa & Wee, 2006), African (Kwasi Opoku-Amankwa, 2009; Frydman, 2011) and South American countries (Matear, 2008) adopting language policies that promote the use of English, there will be increasing numbers of bilingual and multilingual speakers worldwide. For speech-language pathologists, it will become increasingly important to not only understand the developmental trajectories and characteristics of language impairment for language for monolingual, bilingual and
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multilingual children, but the broader context of language change will need to be considered as language changes over time become more rapid in many developing nations.

These changes to language use will increase the importance of the need to regularly revise and update assessment tools. It is relatively common to do so in countries with a well-developed infrastructure to support clinical assessment, but regular revision needs to be applied in all contexts and clinicians need to be mindful of the possible implications of rapid changes in language use.

**Conclusion**

This study has demonstrated that in Singapore, language use has changed over time in what would appear to be in response, in part, to language policies. This is a particular challenge for speech-language pathologists in the assessment of language skills in complex multilingual environments. Best practice in speech-language pathology would see the development of language assessments specific to individual populations and language groups. These results demonstrate the need to monitor the changes in language over time, and to update language assessments accordingly in order to facilitate the assessment and diagnosis of language impairment in these populations.

Furthermore, changes to existing, and introduction of bilingual language policies in many developing nations, will result in more bilingual and multilingual communities and changes to patterns of English use or increases in the use of non-standard forms of English. All of these factors will require speech-language pathologists to become more expert in working with bilingual/multilingual clients. Knowledge and skill in practice with a diverse range of multilingual clients will be required, as will the development and maintenance of assessment tools to facilitate practice.

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Appendix 1

Sample picture from the Singapore English Action Picture Test (Brebner, 2002).

**Picture 5**

Target: The boy has got 2 stars.
Table 1: Number of participants by data collection date, age group and language dominance

<table>
<thead>
<tr>
<th>Language dominance/study</th>
<th>EL1 2002</th>
<th>EL1 2014</th>
<th>ML1 2002</th>
<th>ML1 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group 2 4;03-4;08</td>
<td>37</td>
<td>15</td>
<td>42</td>
<td>11</td>
</tr>
<tr>
<td>Age group 3 4;09-5;02</td>
<td>46</td>
<td>22</td>
<td>46</td>
<td>15</td>
</tr>
<tr>
<td>Age group 4 5;03-5;08</td>
<td>40</td>
<td>9</td>
<td>41</td>
<td>20</td>
</tr>
</tbody>
</table>
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Table 2: Father’s educational level at the time of data collection

<table>
<thead>
<tr>
<th>Date of data collection</th>
<th>2002</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>No education</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Primary qualifications</td>
<td>19%</td>
<td>24%</td>
</tr>
<tr>
<td>O levels</td>
<td>36%</td>
<td>20%</td>
</tr>
<tr>
<td>A levels</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Diploma</td>
<td>18%</td>
<td>22%</td>
</tr>
<tr>
<td>Degree</td>
<td>17%</td>
<td>30%</td>
</tr>
<tr>
<td>Missing data</td>
<td>-</td>
<td>1%</td>
</tr>
</tbody>
</table>
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Table 3: N, medians and ranges for both language dominance groups and all age groups for both variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age group</th>
<th>N</th>
<th>Median</th>
<th>Range</th>
<th>N</th>
<th>Median</th>
<th>Range</th>
<th>N</th>
<th>Median</th>
<th>Range</th>
<th>N</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information/expressive vocabulary</td>
<td>4;3-4;8</td>
<td>37</td>
<td>58</td>
<td>39</td>
<td>15</td>
<td>58</td>
<td>42</td>
<td>42</td>
<td>28</td>
<td>61</td>
<td>11</td>
<td>42</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>4;9-5;2</td>
<td>46</td>
<td>65</td>
<td>38</td>
<td>22</td>
<td>59</td>
<td>28</td>
<td>46</td>
<td>55</td>
<td>70</td>
<td>15</td>
<td>53</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>5;3-5;8</td>
<td>40</td>
<td>70</td>
<td>25</td>
<td>9</td>
<td>66</td>
<td>21</td>
<td>41</td>
<td>59</td>
<td>61</td>
<td>20</td>
<td>51</td>
<td>60</td>
</tr>
<tr>
<td>Grammar/expressive morphosyntax</td>
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Normative data in multilingual environments

Table 4: Ranks for all variables by age group and language

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<th>Study date</th>
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Normative data in multilingual environments