Bridging the 20-Year Literacy Divide

African Language Reading Progress in South Africa

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Abstract

South Africa's language education policies acknowledge the country's exceptional linguistic diversity, with all 11 official languages represented. At Grade 4 (the population of interest) the language of learning and teaching (LoLT) differs by school, according to legislation described in this chapter. South Africa's legislation acknowledges the complexity of factors determining a school or class's ideal LoLT. We give context to these factors through the literature supporting the use of home-language instruction in early grades. Using PIRLS 2006-2016 data, we describe South Africa's changes in LoLT, decomposing language proficiency by province, asset ownership quintile, and whether the LoLT matches the learner's home language. Finally, we explore language proficiency along the same dimensions through multiple linear regressions. We find three primary results. First, there is a high match between home language and LoLT, which refutes the myth that classrooms are becoming increasingly multilingual, apart from in Gauteng. Second, African languages, especially Nguni languages, are significant contributors to the improvement seen in PIRLS between 2006 and 2016. Third, there is still a significant gap in performance between English and Afrikaans compared to all other South African languages. At the 2010-2016 rate of progress, it would take another 20 years before the fraction of Nguni language speakers that meet the Low International Benchmark would be the same as Afrikaans or English speakers in 2016.

Keywords

 $multilingual\ assessments-test\ equivalence-language\ of\ learning\ and\ teaching-African\ languages-home\ language$

1 Background and Overview

South Africa's learner performance has steadily improved, as measured in various international assessments, including the Progress in Reading Literacy Study (PIRLS). While this is laudable, disaggregation by languages shows uneven improvement. According to the South African Constitution, all 11 official languages have intrinsic value and legal equivalence (South Africa, 1996a). Yet, the impacts of 'Bantu education' policies under the apartheid government persist. The apartheid government strongly supported education instruction in each of the homeland's official languages as part of their grand divide-andconquer philosophy (Davenport, 1966; Malherbe, 1977; Seroto, 2013). However, the quality of education provided and other societal factors have resulted in the former homelands having the poorest learning outcomes in the country (Fleisch, 2008; Van der Berg, 2007). Learning outcomes in African languages were poor when compared to English and Afrikaans reading outcomes. While a large proportion of African language learners can now be found across all provinces, these historical factors drive the relationship between African languages and poor learning outcomes, even though studies show that learning in one's home language, at least in early grades, has big learning advantages.

As the findings of this chapter confirm, the languages of learners reflect the inequalities in the education system and the country in general. Beyond enumerating the changes by LoLT between 2006 and 2016, we also analyse the most significant language contributors to the improvements seen in overall performance and discuss how we should interpret these improvements, considering the purpose of PIRLS.

Finally, with globalisation as the norm, multilingualism is a growing societal feature, with more than 7,000 languages spoken internationally in 2020 (Eberhard et al., 2020; UNESCO, 2003). Africa is the most multilingual continent, with hardly any monolingual countries; Asia and Europe are also increasingly multilingual (Extra & Yağmur, 2012; Kame, 2012; Kirkpatrick, 2012). Over time, multilingualism rather than monolingualism will become the international norm. The lessons learnt from the South African multilingual landscape are therefore relevant to broader contexts for language education planning and policies.

2 Language in Education Policies in South Africa

First, we turn to the language in education policies and the options that they provide for multilingual education in South Africa. Language is governed by ten policies developed over the past 26 years. These policies fall into three

categories: (1) establishment of the education sector, (2) curriculum reform, and (3) refining and updating, which is an ongoing category. A detailed discussion and the influences on policy change and direction can be found in Mohohlwane (2020). For the purpose of this chapter, only four policies are relevant. The first two policies are the South African Schools Act (South Africa, 1996) and the Language in Education Policy (Department of Education, 1997), which fall into the first category of establishing the education sector. The second two are the National Curriculum Statements (Department of Basic Education, 2011) and the Basic Education Laws Amendment Bill (Department of Basic Education, 2017), which fall into the second and third categories, respectively. We discuss three of these policies here and the fourth in Section 3 of the chapter.

The South African Schools Act (SASA) mandates the Minister of Education to determine language policy norms and standards to govern all schools. The Act then delegates the choice of which language to offer in each school to school governing bodies (SGBS). Under the SASA, the relationship between provincial education departments and SGBS in determining the LoLT is vague. This has led to disagreement and contestation, culminating in court cases (Hoërskool Ermelo v The Head of Department of Education: Mpumalanga, 2009). The Basic Education Laws Amendment (BELA) aims to update the SASA and other education policies based on the current policy agenda and recommendations from court cases.

The BELA clarifies that the SGB LoLT determination is a delegated function that is subject to the approval of the Provincial Head of Department. Second, the Act clarifies that the LoLT may only be one of the eleven official languages of South Africa, with the recognition of sign language as a twelfth official language for LoLT purposes.² Third, the LoLT policy should be reviewed every three years. Fourth, contextual and preferential factors for LoLT consideration include both parent choice, expressed through the SGB, and the changing demographics surrounding the school. In this way, the policy attempts to share the decision-making power between the province, SGBs, and broader society (unlike in the SASA).

The BELA bill is highly contested for the various laws it attempts to amend. We focus on the LoLT critiques from two civil society organisations and the official opposition party. AfriForum, a non-profit civil rights organisation that advocates for Afrikaners, contends that the reduction of SGB decision-making powers is unconstitutional and unnecessary. They anticipate that the proposed changes will disadvantage Afrikaans by reducing its use as the LoLT and that the SASA as developed in 1996 does not need amendment (AfriForum, 2022).

The official political opposition party, the Democratic Alliance, has shared similar critiques in media statements and public discussions (Democratic

Alliance, 2022; Nododa, 2022). They argue that the change from the SGB as the final decision-maker weakens community control and is a draconian centralisation of state power. They too anticipate a negative impact on monolingual schools.

In contrast, Equal Education, and the Equal Education Law Centre, in a joint submission, voice the opposite argument by lauding the LoLT amendments, with proposals for further specifications such as how many learners are required for monolingual schools to become bilingual, and similar suggestions for practical and measurable implementation. They argue that the SASA enabled discrimination, using LoLT to exclude mostly African learners and that these amendments are necessary (Equal Education Law Centre & Equal Education, 2022; Stein, 2022). The public comments deadline lapsed in August 2022 and responses and finalisation should be forthcoming.

The third policy is the Norms and Standards for Language Policy, more commonly referred to as the Language in Education Policy (LiEP). The preamble emphasises the value of home language instruction and the value of indigenous languages in South Africa, promoting an additive bilingualism approach. Schools are required to provide at least one language as a home language in Grade 1 and Grade 2, with this used as the LoLT. They are then required to provide an additional language as a subject from Grade 3. The policy also allows for the use of the home language as the LoLT up to Grade 6. While the policy does not say that the same home language LoLT cannot be maintained beyond Grade 6, it speaks about revisiting the choice of LoLT for Grade 7 onwards based on learner numbers, resources and other conditions.

What has become accepted as the norm in implementing the LiEP is therefore based on choice and practice rather than prescript. Three main choices in implementation are striking; first, schools do not have to introduce English or Afrikaans from Grade 1 as is the current practice, since this is not a prescript but an implementation choice. The policy only makes a second language compulsory from Grade 3. While the merits of an early or late entry may be debated, it is not a policy requirement. Second, the use of home language as LoLT until Grade 3, followed by a LoLT switch in Grade 4, is not prescribed but a choice. The same home language may be maintained as the LoLT.

Third, the understanding that African home languages cannot be the LoLT beyond Grade 6 is a matter of incorrect interpretation, practicality and choice. Since all 11 official languages have the same legal status in South Africa, a switch to English or Afrikaans is not a prescript but a choice. Yet, almost all Grade 12 learners write their final non-language examinations in either English or Afrikaans.

In our consideration of the LoLT, we find the policy environment vibrant, as seen in the active participation of civil society and different political parties.

The enabling legal protections through the Constitution and the adoption of sign language also show a willingness to protect the rights of learners across all languages. The policies themselves have been broad, allowing for adapted implementation. However, in practice, the policies have not empowered the extended delivery of education in African home languages. Overall, English and Afrikaans dominate as the LoLT across the schooling system, although the pattern in the Foundation Phase is different (Department of Basic Education, 2010). It is not surprising then that the latest policy developments are especially critiqued by groups representing these languages as seen in the court cases and BELA bill amendments discussed. While policy alone is insufficient for change, the latest policy changes may change the LoLT landscape.

3 Classroom and Societal Implementation of the Language in Education Policies

The chapter thus far reflects on the LoLT legislative framework and policy interpretation. We now turn to parental choice and classroom practice. Parental choice and preference are brought into the LoLT decision-making process through SGBs.

The language children know best on entering school, which is their home language, should be understood as a leverageable educational resource when deciding on a school's LoLT (Abdulatief et al., 2018; Guzula et al., 2016). But what informs parent choice? Is it purely valuing of language as an educational resource or is there more to the decision?

Two points are worth making. First, as shown in various studies including PIRLS (see Chapter 3 by Gustafsson and Taylor, this volume), schools in wealth quintiles 4 and 5 largely outperform quintile 1 to 3 schools. While there are compounding differences in school composition and socioeconomic status (SES), often these schools are also different in their LoLT. Most quintile 4 to 5 schools have an English or Afrikaans LoLT from Grade 1 (Howie et al., 2017) and even those who switch from an African language to English in Grade 1 came from higher quintiles (Taylor & Von Fintel, 2016). This is further reflected in the asset ownership of learners by language as shown later in this chapter. Unfortunately, detailed analysis specifying LoLT by quintile is difficult to find. The language correlation signals to parents and the broader society that educational success is correlated with these languages. Second, economic returns such as job opportunities, pay and promotion are vested in English and Afrikaans, with none vested in African languages (Casale & Posel, 2011; Wright, 2002).

So, while parents may value African home languages, they must make difficult choices about education quality and employment outcomes. We see this in their stated preferences. In a national attitudes survey the Human Sciences Research Council asked adults what the LoLT should be in schools. In 2003, 55% were in favour of English, increasing to 65% in 2018 (Gordon & Harvey, 2019). Policymakers should wrestle with reconciling this with the evidence that learning in your home language has a positive impact on learning outcomes in the early grades (Department of Basic Education, 2017; Taylor & Von Fintel, 2016). However, a policy nuance for consideration on the appropriate language selection should be language homogeneity within each respective province, as well as the feasibility and trade-offs of LoLT and home language matches, particularly in urban settings compared to rural settings. We attempt to contribute to these considerations later in this chapter, using PIRLS data.

In the remainder of this section, we examine how the LiEP has been implemented in relation to parent choice. Using administrative education data and population data (Van der Berg et al., 2020), Table 7.1 shows a high match between school LoLT and the population speaking that language as a home language, except for English. It is the only language where the LoLT outnumbers the population figures; only 6% of the population reported English as their home language but 23% of schools have English as LoLT. Interestingly

TABLE 7.1 Foundation Phase languages by LoLT and home language

| | % of grade 1 to grade 3 learners with this LoLT | % of population aged 7 to 9 with this home language |
|------------|--|---|
| Afrikaans | 9.0 | 9.2 |
| English | 23.1 | 6.3 |
| isiNdebele | 0.6 | 1.4 |
| isiXhosa | 16.6 | 19.4 |
| isiZulu | 20.6 | 28.0 |
| Sepedi | 9.3 | 9.8 |
| Sesotho | 5.7 | 7.8 |
| Setswana | 8.4 | 8.9 |
| Siswati | 1.7 | 2.8 |
| Tshivenda | 2.1 | 2.4 |
| Xitsonga | 3.1 | 4.1 |
| Total | 100.0 | 100.0 |
| | | |

SOURCE: VAN DER BERG ET AL. (2020)

Afrikaans home language speakers and LoLT-takers match almost perfectly. Most learners that start learning in Afrikaans maintain it as a LoLT throughout their schooling. There is not a decrease or significant switch in Grade 4 (Department of Basic Education, 2010; Van der Berg et al., 2020).

Although isiZulu is the largest home language at 28%, it is the LoLT for a disproportionately smaller percentage (21%) of learners. The smaller languages, such as isiNdebele and Siswati, seem to have the lowest ratio of speakers to LoLT-takers. These learners likely opt for schools with a different LoLT as few schools teach in these languages.

In summary, although the LiEP allows for the same LoLT until Grade 6, most schools change their LoLT in Grade 4. Approximately 1% switch to Afrikaans, making the sum of those learning in Afrikaans 10% and the remaining learners switch to English, making the LoLT for the remainder of schools 90% for English (Department of Basic Education, 2013). Very little implementation takes place in African languages.

So far we have discussed the patterns of LoLT implementation in the Foundation Phase and Intermediate Phase in terms of policy prescripts, policy interpretation and parental choice. These are the South African Schools Act, the Language in Education Policy, the Basic Education Laws Amendment Bill and the National Curriculum Statements. A final issue to consider is the constraints in realising the policies. Although the policy allows for home language LoLT at least until Grade 6, the national curriculum is only available in African home languages until Grade 3 for non-language subjects, namely Life Orientation, Life Sciences and Mathematics. From Grade 4 onwards, all non-language subject curriculum documents are only available in English or Afrikaans. Similarly, resources such as textbooks, dictionaries and assessments follow the same pattern. Teacher training also follows the same pattern with Intermediate Phase teachers' training for teaching in Afrikaans and English as LoLT exclusively (Van der Berg et al., 2020). This makes the practical realisation of the home language as LoLT policy, at least until Grade 6, difficult to implement in the absence of strong political will and dedicated funding.

4 Language and Literacy Studies: Lessons from South African and International Contexts

As cities become more linguistically diverse (Statistics South Africa, 2012), addressing and enabling multilingual learning is becoming increasingly important. This section explores outcomes in schools based on the LoLT. Using longitudinal administrative and assessment data from the population of primary

schools and a fixed effects estimator, Taylor and Von Fintel (2016) find that mother-tongue instruction in the early grades significantly improves English acquisition as measured in Grades 4, 5 and 6. They find that three years of English instruction in the Foundation Phase relative to three years in home language is associated with a negative effect on English performance in Grades 4–6 of approximately 17% of a standard deviation in test scores. This is one of only a few international studies to bring empirical evidence to the current LoLT policy debate.

Mohohlwane et al. (in press) find the same language impacts using two Early Grade Reading Studies (EGRS). The two randomised control trials were implemented between 2015 and 2017 for EGRS I, focusing on Setswana and between 2017 and 2019 for EGRS II, focusing on English First Additional Language (EFAL). Both studies were implemented in the Foundation Phase, with the difference being the intervention language. The abovementioned study is among the few longitudinal studies in South Africa examining this. When comparing the impact of the interventions, learner test scores showed that a focus on home language had a large positive impact on both home language and EFAL, but focusing on EFAL had a marginal positive impact on EFAL and a significant negative impact on home language. These impacts were measured during the Foundation Phase and after the LoLT transition in Grade 4. An alternative perspective may be that EFAL interventions should be prioritised since it becomes the LoLT for most learners, even if there are some initial costs to home language. Using longitudinal data, Mohohlwane et al. (in press) found the opposite of this, both during the Foundation Phase and after the EFAL LoLT transition. Moreover, literature on language transfer and second language learning does not support this view since the preconditions of learning a second language are largely not met in South Africa, namely, extended exposure to English in academic, social and home settings for learners; access to appropriately levelled reading materials; extended instructional time led by teachers with expertise in the language, as well as the pedagogy of second language instruction. In other words, in the South African context, there are two benefits to emphasising improved performance in the home language. First, to acquire fundamental early literacy skills that enable sufficient reading comprehension competencies. The second benefit is to master the early literacy skills that can be transferred to learning an additional language, such as English, which is the LoLT beyond Grade 3.

Spaull (2016) demonstrates the poor quality of learner performance in Grade 3, prior to any language switch. Using Grade 3 tests where the same learners were tested on the same test, a month apart, first in their home language then

in English, he finds that there is both a clear language effect and a quality issue. The average score when the test was written in an African home language was 33%. The same learners performed worse in the English test, scoring 22% on average. While test difficulty may unfairly bias learner performance, this is not the reason for the poor outcomes in this case. The analysis by Spaull (2016) is based on the National School Effectiveness Study where deliberate efforts were taken to ensure test appropriateness (Taylor & Taylor, 2013); we highlight four of them. First, the PIRLs framework for assessments was adopted and adapted ensuring that a range of skills and comprehension processes were included. Second, the test included Grade 1 items such as matching words and pictures. Third, multiple choice questions were also included. Fourth, 43% of the items required learners to retrieve explicitly-stated text, which is the very basic PIRLs comprehension framework category.

In summary, literacy outcomes are poor in both home language and EFAL, showing weakness in both quality of instruction and language-specific challenges. In contexts where there is choice in learning in one's home language or EFAL, there is compelling evidence for learning in one's home language. Furthermore, the LoLT has serious implications for overall learning outcomes for learners, not only in the specific language but also in the ability and quality of learning in other subjects.

We now turn to international evidence. Van Laere et al. (2014), examining Science outcomes for learners, found that those learning Science in their home language (Dutch) performed better than those whose home language was not Dutch but did Science in Dutch. The home language speakers had higher proficiency in both Dutch reading and Science scores. The learners had better vocabulary and decoding skills in the home language and were able to transfer these foundational skills to learn content in another subject—Science, although those with a higher SES performed better. Over and above factors such as SES, classroom resources and teacher instructional practices, which may explain most of the difference, this study reminds us that LoLT and reading proficiency have serious implications for overall learning across all content areas.

While the advantage of home language learning is clear, this is not always possible. What is the impact on learners that are taught in a language that is not their home language? Is it reasonable to compare learners with a match between their home language and school LoLT to unmatched learners? As previously discussed, almost 90% of South African learners are taught in English from Grade 4. To respond to this, the following section addresses the implications and impact of cross-language assessment.

5 Comparing Matched and Unmatched Reading Scores

A study conducted by McClain et al. (2021) in three elementary schools in the United States collected data on receptive vocabulary from English-matched, Spanish-matched and English-Spanish-unmatched learners. Unmatched learners' scores on monolingual measures suggested that their language skills lagged behind their matched peers. However, unmatched learners' language skills on a bilingual measure did not lag.

A German National Educational Panel study assessed reading comprehension in Grade 4 consisting of a sample of monolingual, first language (L1) bilingual and second language (L2) bilingual learners. The results in Novita et al. (2021) showed that, after controlling for socioeconomic background, L2 learners showed lower reading comprehension and linguistic skills than L1 learners. Subsequently, monolingual learners outperformed both L1 and L2 learners.

Gibson et al. (2018) provide a different perspective, arguing that differences in learner scores are resultant of widely used standardised tests that do not offer comparable normed scores. These differences are not based on language matches. Their study explored the difficulties of using standardised tests to explore the gaps in vocabulary development between monolingual and bilingual learners. In our view their study clearly demonstrates why measuring learning and language effects requires careful analysis to understand the constructs being assessed, the test development process and the relationship between different standardised tests. Their work also highlights comparability across different language orthographies with more nuances such as differentiating language-specific benchmarks or norms, and finally addressing the more delicate science of reconciling the different reading trajectories between home languages versus first additional languages.

Local research by Cockcroft (2016), comparing verbal working memory and vocabulary between 120 monolingual and bilingual learners, found that the matched learners outperformed unmatched learners in all the vocabulary assessments. However, there were no significant differences between both groups on the working memory measures (Cockcroft, 2016). This means that the way the brain uses the acquired information to execute a cognitive task is the same in both matched and unmatched groups. In a study conducted by Shepherd (2013), in understanding Grade 4 reading performance of learners in Botswana and South Africa, the empirical evidence suggests earlier exposure to mother tongue education has positive effects in achieving additive bilingualism.

Again, these studies provide evidence for the advantages and disadvantages of matched or unmatched assessment of language comprehension. Learners

undertaking a reading assessment in their matching language perform better than their unmatched peers.

6 The Rationale of Assessment

In practical applications we often separate the learning process from assessment practices. Yet, assessment is a central component of education; it informs us about the learning progress and, depending on the purpose, whether learners have met the criteria for either entry or progression. In the South African context, systematic assessment is usually associated with accountability. However, systemic assessment, such as the Annual National Assessment (ANA), has resulted in rejection by teachers and unions (South African Democratic Teachers' Union, 2014).

Prinsloo (2021) as well as Govender and Hugo (2020) critique large-scale assessment studies such as PIRLS, TIMMS and those conducted by the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SEACMEQ), arguing that such assessments do not provide reliable information on learners' performances and lack consideration for the social and cultural context of the country. For both systematic and large-scale study assessments, Taras (2005) and Nuga Deliwe (2017) make a strong case that these contrasting views on the role and purpose of assessments result from a lack of commonality in the definition of both theoretical and practical applications of assessment. Broadly, there are two types of assessments: formative and summative assessments, and each serve functions and processes for different purposes.

In the existing literature, 'formative assessment' (also known as the assessment for learning) is used in the teaching and learning process to determine the extent to which instruction or teaching has been successful, which learners need more support, and how teachers should adapt their teaching methods (Ahmad et al., 2020; Kanjee, 2020). In other words, formative assessment is a measure of the learning process that is concerned with how students construct their knowledge, for example, ongoing tasks outlined in the national Curriculum Assessment Policy (CAPS) throughout a term.

Literature refers to 'summative assessment' as the assessment of learning. This is an appraisal process to measure knowledge acquisition at a given point in time. The information can be used for determining the level of individual performance, evaluating the usefulness of the education system, and decision making on promotion to the next grade or education phase (Özdemir, 2010). Summative assessments present a learner's attainment of knowledge within a given period.

These distinctions are the reason it is important to understand assessments from a purpose and practical application perspective, as highlighted by Taras (2005). Assessments are an integral component of education that we must confront and include. Questions that we should be asking are those that strengthen the assessment processes: How do we standardise assessment? How do we use assessment to improve teaching and learning? How are assessments used for policy-making decisions? And how do we develop fair assessments in multilingual and cultural societies like South Africa?

7 Purpose of Comparing Language Assessments

It is important to understand why cross-language assessments exist and what their benefits are by comparing the performances of learners in the same grade in different languages. In answering this question, we drew from the broad literature on multilingual assessment research to develop a categorisation for multilingual assessments (Berthele & Udry, 2022; Chalhoub-Deville, 2019; De Backer et al., 2019; Gorter & Cenoz, 2017; Flognfeldt et al., 2020; Mdlalo, 2019; Schissel et al., 2018; Shohamy, 2011):

- Curriculum-system level: In countries where multiple languages are recognised as official languages, education policy accommodates the teaching and learning of these languages. As discussed earlier, South Africa has several policies enabling this. In application, this means that the education system must test all languages with tests like the Annual National Assessments and the National Senior Certificate.
- International comparison studies: The last three decades saw increased support for systemic education reform from international agencies like the Organisation for Economic Co-operation and Development (OECD), the World Bank and the United Nations (UN). Reforming education requires deepening the understanding of education systems across the globe. To enable this, studies targeting system-level language performance rather than individual performance have been developed, for example, PIRLS, TIMSS and SEACMEQ.
- Language development theories: Linguistic and cultural paradigm shifts have called for more evidence in understanding how different languages develop in particular contexts. Additionally, globalisation and migration have resulted in historically monolingual countries becoming more multilingual. For teaching and learning purposes, understanding how an education system approaches multiple languages for a centralised curriculum and implementation requires a research and evidence base. In South Africa, examples

include Early Grade Reading Studies (Taylor et al., 2017) and Mother Tongue Based Education (Mbude, 2019).

Understanding why cross-language assessments are needed is relatively straightforward. The more complex and nuanced element of the process is *how* to assess across languages. What constitutes a rigorous multilingual assessment? And how do methodological considerations factor in bias and fairness? We turn to these questions next.

8 Multilingual Assessment Methodologies

Typically, the PIRLS study is conducted in multiple languages, comparing the comprehension scores of the participating countries. Although cross-language assessment may be contested (Govender & Hugo, 2020; Nuga Deliwe, 2017; Prinsloo, 2021), the International Association for the Evaluation of Educational Achievement (IEA) follows a rigorous process to ensure high standards in the translation process, and equivalence in measurement and verification process of the schools' LoLT. The Centre for Evaluation and Assessment (CEA) has been the implementing partner for PIRLS in South Africa. The translation process undertaken by the team follows this process:

- Every participating country submits passages in English for consideration to the IEA, with its accompanying reading comprehension questions.
- Representatives from the countries meet and identify passages with its questions from the pool of submissions for the assessment.
- The IEA ensures that the same assessments are selected for use in all participating countries. The English test is the same across countries.

The next steps pertain to translations when the final assessments are not in English:

- The selected English passages and questions are translated into the target languages by reputable education translators.
- A second independent translator back-translates the passages into English.
- An additional layer of verification is included by an IEA-appointed translator to verify translation done from English to the African language and the African to English language translation.

In measuring the potential translation bias of the PIRLS test, using the differential item functioning model, Mtsatse (2017) concluded that there were no statistically significant differences between English and isiXhosa sublanguage

groups. The study further explored potential explanations for three items out of 15 that isiXhosa learners found difficult. Teachers from four different isiXhosa regions were consulted. They indicated that the passages and items were translated in the standardised isiXhosa as prescribed by the curriculum; however, the teachers had not been following the standardised language in their teaching; instead, they taught dialects. The findings highlight the need to strengthen curriculum delivery and the teaching and learning of African languages rather than translation issues. It also highlights the need to ensure alignment between policy, curriculum and assessment expectations.

8.1 Language of Assessment

We now turn to the three main types of language assessments: the first group is *matched*, where the LoLT and home language match. The second group is *unmatched*, when learners are bilingual and are taught in and assessed in their second language as LoLT. The third type is *matched-unmatched*, conditioned by the contextual environment when learners are bilingual or multilingual and learning in a second language as the LoLT, but the language of assessment is in their home language. For example, if learners have isiZulu as their home language and are proficient in English, the test may be administered in isiZulu.

The development of language assessment for the matched learners is relatively straightforward because there are reduced concerns about standardisation and translation. Learners are assessed on the language they have the most exposure to at home and at school. The assessments drill down to the learners' comprehension skills.

In contrast, in the unmatched and matched-unmatched scenarios, there is a lack of local research to guide the use of appropriate multilingual assessment methodologies. According to the international literature, there are a myriad of factors to consider when measuring comprehension for bilingual and multilingual learners (Abedi & Lord, 2001; De Backer et al., 2019; Knauer et al., 2019). These include understanding the difference in their cognitive abilities such as word memory, phonological processing and vocabulary development.

Some research on language assessment focuses on highlighting cognitive skills, such as phonemic awareness and morphology, which are underdeveloped and can serve as a disadvantage (Schissel et al., 2018). For instance, bilingual and multilingual learners may be able to process or understand information better in one of the languages in which they are proficient. However, cognitive academic language proficiency (CALP) theory argues that bilingual and multilingual learners have the opportunity to grasp concepts in their home language and transfer cognitive abilities in learning an additional language (Cummins,

2008; Khatib & Taie, 2016). In other words, taking a language assessment in your matched language serves to be an advantage.

It is important that test development and adaptations for cross-language assessment purposes do not result in unfair assessment practices. Li and Suen (2012) conducted a study on the fairness of multilingual assessments and the findings suggested that test accommodations, such as extra testing time, individual administration and the use of a bilingual dictionary provided to unmatched learners, had no effect. It was the proficiency in the language of learning that acted as an advantage when measuring outcomes.

9 Data Analysis and Discussion

We now turn to the PIRLS data analysis. We use the standard PIRLS survey design adjustments, with student-level weights and estimate learning outcomes through the use of plausible values. The asset quintiles constitute an index created by principal component analysis of self-reported assets in the home of the learner, which proxy for the wealth of the learners as the learner's total wealth is unobserved. The first quintile represents the 20% least wealthy learners and the fifth quintile represents the 20% wealthiest learners, as determined by asset wealth. The regression uses ordinary least squares with categorical variable coefficients reflecting the difference from the base value of each category. When determining the LoLT, we use the language of the assessment. As stated in the PIRLS report, schools were asked to use their Foundation Phase LoLT to determine this (Howie et al., 2017). To determine whether the LoLT matches the home language, Howie et al. (2017) define only "I always speak <language of test> at home" as matching, while in this chapter, we combine "almost always" and "always" as matching.

South Africa has participated in four rounds of PIRLS: 2006, 2011, 2016 and 2021. In 2006 a nationally representative sample of both Grade 4 and Grade 5 learners participated in anticipation of floor effects. In this chapter we present only the Grade 4 results, while the results for both grades were reported in the South African reports. In 2011, South Africa participated in the Grade 4 prePIRLS. In 2017, a rescaling exercise was done, putting all the assessments on the same scale to enable comparison. The rescaling is to the normal PIRLS benchmarks/ stands: 2006 and 2016 are retained, while 2011 is scaled to 2016 (Gustafsson, 2020).

We use data from PIRLS 2006 and 2016. The reason for not including the 2011 data is that the recalibrated dataset is not publicly accessible or available to the CEA overseeing the South African implementation of PIRLS.

TABLE 7.2 Language of assessment by province, PIRLS 2006

| | Afrikaans | English | isiNdebele isiXhosa | isiXhosa | isiZulu | Sepedi | Sepedi Sesotho | Setswana | Siswati | Tshivenda | Xitsonga | Total |
|---------------|-----------|---------|---------------------|----------|---------|--------|----------------|----------|---------|-----------|----------|-------|
| Eastern Cape | 11.3 | 14.9 | 0.0 | 2.69 | 0.0 | 0.0 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Free State | 5.4 | 7.3 | 0.0 | 4.3 | 5.5 | 0.0 | 77.5 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Gauteng | 4.8 | 34.2 | 0.0 | 0.0 | 26.0 | 10.7 | 9.2 | 5.3 | 0.0 | 0.0 | 9.1 | 100.0 |
| KwaZulu-Natal | 0.0 | 23.3 | 0.0 | 3.6 | 73.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Limpopo | 0.0 | 3.6 | 0.0 | 0.0 | 1.0 | 29.4 | 0.0 | 2.5 | 0.0 | 40.3 | 23.4 | 100.0 |
| Mpumalanga | 1.1 | 10.2 | 13.5 | 0.0 | 14.1 | 1.8 | 0.0 | 0.0 | 47.3 | 0.0 | 12.2 | 100.0 |
| North West | 2.5 | 10.5 | 0.0 | 4.5 | 0.0 | 0.0 | 4.6 | 6.77 | 0.0 | 0.0 | 0.0 | 100.0 |
| Northern Cape | 48.5 | 11.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.1 | 0.0 | 0.0 | 0.0 | 100.0 |
| Western Cape | 40.4 | 36.5 | 00.00 | 23.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total | 9.6 | 16.3 | 2.2 | 10.2 | 13.5 | 0.7 | 8.9 | 6.6 | 9.2 | 7.3 | 7.4 | 100.0 |

Table 7.2 shows the language of assessment by province for PIRLS 2006. Gauteng has the highest language diversity. Learners were assessed in seven of the eleven official languages. The largest language concentration in Gauteng was in English (34.2%), followed by isiZulu (26%). When combining figures across the provinces, English (16.3%) and isiZulu (13.5%) had the highest number of learners taking the PIRLS test. The smallest language of assessment was isiNdebele at 2.2%.

Table 7.3 highlights the changes in the language of assessment in schools. This table shows that the LoLT has changed over the decade. Particularly, there has been a greater concentration in English and isiZulu LoLT followed by isiXhosa. These three languages were the largest LoLTs in 2006 and retained those positions in 2016. Aside from Sepedi all the languages had a decline.

As pirls Lolt stratification was based on the Annual Schools Survey (Ass), these changes mirror the data in the Ass, namely that in the Foundation Phase English, isiZulu, and isiXhosa are the largest Lolt in schools (DBE, 2010). The large percentage point increase in English could tentatively be attributed to the increase in parental preference in enrolling their children in English Lolt schools (Gordon & Harvey, 2019) and migration to multilingual Gauteng. In both PIRLs waves, the largest Lolt samples are English, isiXhosa and isiZulu. Unsurprisingly, these distributions align with the census data of spoken language distribution (Statistics South Africa, 2012). We must, however, interpret this sampling cautiously, considering the relatively small numbers of learners.

TABLE 7.3 Changes in the language of assessment in schools between 2006 and 2016

| | | Change |
|-------|---|---|
| 9.6% | 9.2% | -0.4% |
| 16.3% | 23.0% | 6.7% |
| 2.2% | 0.3% | -1.9% |
| 10.2% | 15.9% | 5.7% |
| 13.5% | 21.8% | 8.3% |
| 7.0% | 9.4% | 2.4% |
| 8.9% | 5.2% | -3.7% |
| 9.9% | 7.1% | -2.8% |
| 7.6% | 2.3% | -5.3% |
| 7.3% | 2.2% | -5.1% |
| 7.4% | 3.8% | -3.6% |
| | 16.3% 2.2% 10.2% 13.5% 7.0% 8.9% 9.9% 7.6% 7.3% | 16.3% 23.0% 2.2% 0.3% 10.2% 15.9% 15.9% 21.8% 7.0% 9.4% 8.9% 5.2% 9.9% 7.1% 7.6% 2.3% 7.3% 2.2% |

This is especially applicable for isiNdebele, as well as Xitsonga, Tshivenda and Siswati. The estimated changes associated with such groups are not statistically significant.

Table 7.4 enables us to examine the match between learners' home language and the language of assessment at the provincial level. Again, we use the language of assessment as a proxy to determine the school's LoLT. There is a considerably high consistency of at least 90% across all provinces where the learner's home language matches the language of assessment, besides Gauteng with an 88% match. It is to be expected that Gauteng would have a lower value, considering the high density of multilingualism in Gauteng, as described in the 2011 census.

Table 7.4 furthermore shows that LoLT shifts were larger at a provincial level compared to languages in isolation, as shown in Table 7.3. When comparing the PIRLS 2006 in Table 7.2 and the 2016 estimates in Table 7.3, we see interesting patterns with increases in a few languages, but mostly a decline in others. We see that English and the Nguni languages, except for isiNdebele, increased. So did Sepedi. English had the largest increase from 16% to 23%, with Northern Cape doubling from 11% to 22%, and Gauteng from 34% to 46%. Furthermore, isiZulu increased from 14% to 22%, with four provinces experiencing increases, namely Gauteng, Free State, Limpopo and Mpumalanga. The biggest of these is Mpumalanga, increasing from 14% to 27%. Tshivenda and Siswati tripled their numbers although they remain small.

TABLE 7.4 Home language and LoLT match, 2016

| | LoLT m | natch |
|---------------|-----------|---------|
| Province | Unmatched | Matched |
| Eastern Cape | 5.2% | 94.8% |
| Free State | 3.4% | 96.6% |
| Gauteng | 11.8% | 88.2% |
| KwaZulu-Natal | 4.3% | 95.7% |
| Limpopo | 3.3% | 96.7% |
| Mpumalanga | 7.8% | 92.2% |
| North West | 4.8% | 95.2% |
| Northern Cape | 6.3% | 93.7% |
| Western Cape | 2.6% | 97.4% |

Note: The data are from PIRLS 2016.

Afrikaans remained at approximately 9% over the ten-year period, but significant changes happened within provinces. Afrikaans LoLT more than doubled in the Free State, from 5% to 12%, and from 2% to 7% in the North West province. However, these changes are not statistically significant. In contrast, the Northern Cape had a decrease of more than 8 percentage points with those learners opting for English instead.

While Table 7.4 shows the overall matches between school LoLT and home language, Table 7.5 examines differences within classes. We define monolingual classes as those with fewer than 25% of learners that only sometimes or never speak the LoLT at home. We find the highest percentage of monolingual classes in Limpopo (88%), followed by Eastern Cape (84%), then Northern Cape (82%) and North West (81%). The provinces that are most multilingual are Gauteng at 64%, followed by Western Cape at 34%. Nationally, 73% of schools are monolingual. A key finding from the results is that the perspective that South African classrooms nationally are highly multilingual is exaggerated. Further, the number of learners learning in a language other than their home language is even lower. The extent of multilingualism should be considered at a provincial level. Both the census and our analysis demonstrate high multilingualism in Gauteng. Unfortunately, we could not replicate this for 2006; the matching variable was missing in more than 10% of observations.

Table 7.6 examines LoLT by province while the discussion compares this to the 2011-Census (Statistics South Africa, 2012). The three most striking provinces are Eastern Cape, Western Cape and Gauteng. Altogether 13% of learners in the Eastern Cape opt for English as the LoLT while only 6% of the population have English as their home language. In the Western Cape, 35% of learners have an English LoLT although only 20% of the population are home language learners. Gauteng has the largest contrast: 49% of schools have an English LoLT, but only 13% of the population are English home language speakers.

Afrikaans is also notable as it is a LoLT in seven provinces. This excludes KwaZulu-Natal and Limpopo where there are very low numbers of Afrikaans LoLT schools. The PIRLS sample did not include any Afrikaans LoLT schools in these provinces in either 2006 or 2016. Approximately 40% of all schools in Northern Cape have Afrikaans as the LoLT in the Foundation Phase, followed by 45% in Western Cape. Most learners that start learning in Afrikaans maintain it as a LoLT throughout their schooling. No decrease or significant switch in Grade 4 is notable (Department of Basic Education, 2010).

Table 7.7 shows the LoLT matches using wealth quintiles. We do not find any patterns by home asset quintile; all quintiles have an approximately 94% match. This means that, regardless of the quintile, learners report a high match between their home language and the school LoLT. The tables above show

Sample count and percent learners in monolingual and multilingual classes by province, 2016 TABLE 7.5

| | Eastern Cape | Free | Gauteng | KwaZulu-Natal | Limpopo | Mpumalanga | North West | Northern Cape | Western Cape | Total |
|--------------|-----------------|------------|------------|---------------|------------|------------|---------------|------------------|-----------------|-----------|
| Multilingual | 188 | 239 | 1,009 | 330 | 252 12% | 478 | 195 | 130 | 420 | 3,241 27% |
| Monolingual | 974 84% | 845 78% | 562 36% | 894 | 1,912 | 1,455 | 816 81% | 601 82% | 823 66% | 8,882 |
| Total | 1,162 | 1,084 | 1,571 | 1,224 | 2,164 | 1,933 | 1,011 | 731 | 1,243 | 12,123 |

Note: Calculated from PIRLS 2016.

TABLE 7.6 Language of assessment by province, PIRLS 2016

| | Afrikaans | English | isiNdebele | isiXhosa | isiZulu | Sepedi | Sesotho | Setswana | Siswati | Tshivenda | Xitsonga |
|---------------|-----------|---------|------------|----------|---------|--------|---------|----------|---------|-----------|----------|
| Eastern Cape | 10.0% | 13.0% | 0 | 74.7% | 0 | 0 | 2.0% | 0 | 0 | 0 | 0 |
| Free State | 12.0% | 11.0% | 0 | 1.4% | 2.4% | 0 | 73.0% | 0 | 0 | 0 | 0 |
| Gauteng | %0.9 | 49.0% | 0 | 0 | 21.4% | 9.5% | 2.0% | 3.3% | 0 | 0 | 5.9% |
| KwaZulu-Natal | 0 | 23.0% | 0 | 1.9% | 75.2% | 0 | 0 | 0 | 0 | 0 | 0 |
| Limpopo | 0 | %0.7 | 0 | 0 | 2.2% | 56.5% | 0 | 2.9% | 0 | 17.7% | 13.7% |
| Mpumalanga | 1.2% | 18.0% | 3.1% | 0 | 27.4% | 8.4% | 0 | 0 | 28.7% | 0 | 12.9% |
| North West | %0.7 | 11.0% | 0 | 5.4% | 0 | 0 | 2.0% | 74.8% | 0 | 0 | 0 |
| Northern Cape | 40.0% | 22.0% | 0 | 0 | 0 | 0 | 0 | 38% | 0 | 0 | 0 |
| Western Cape | 45.0% | 35.0% | 0 | 19.3% | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| National | %0.6 | 23.0% | 0.3% | 15.9% | 21.8% | 9.2% | 5.2% | 7.1% | 2.3% | 2.2% | 3.8% |
| | | | | | | | | | | | |

TABLE 7.7 LoLT matches by home asset ownership quintile, 2016

| Quintile | Unmatched | Matched |
|----------|-----------|---------|
| 1 | 5.3% | 94.7% |
| 2 | 5.2% | 94.8% |
| 3 | 5.9% | 94.1% |
| 4 | 6.7% | 93.3% |
| 5 | 5.8% | 94.2% |
| | | |

higher numbers of learners enrolled in English and Afrikaans LoLT schools than the identified home languages, according to the census. In these schools there may be matched learners, in other words, bilingual learners writing in their home language or bilingual learners writing in a second language. These bilingual or multilingual identities explain the unexpectedly high match, especially for quintile 4 and 5, considering what we know from other sources on the underlying learners (Matentjie, 2019).

Table 7.8 depicts multiple regression correlation coefficients between learner reading scores in PIRLS/IEA points and the following variables, respectively: whether the language was written in the home language of the learner, the home asset wealth quintile of the learner, the test language of the learner and the province of the learner. Whether or not learners wrote the examination in their home language is not statistically significant. The asset quintiles of the learners follow a nearly linear trend with the richest 20% of learners scoring 47 points more than the poorest 20%. With English as the base language, all languages performed worse than English, with only the following statistically significant at the 5% level (with points difference from English in brackets): isiXhosa (-64), isiZulu (-58), Sepedi & Sesotho (-77), Sesotho (-72) and Setswana (-97).

We consider several sources to interpret the PIRLS points as effect sizes. International and local literature agrees on 0.4 to 0.5 of a standard deviation as an estimate of a year of learning (Gustafsson, 2020; Taylor & Von Fintel, 2016; UNESCO, 2019; Van der Berg, 2021). The 2016 South Africa PIRLS report considers 40 points as approximately a year of learning in South Africa (Howie et al., 2017, p. 185). Considering this interpretation, all the languages are more than a year of schooling behind English test takers in language attainment.

None of the provinces are statistically significantly different from the Eastern Cape at the 5% level. A possible reason for this is high collinearity with languages, where geographic language distribution might correlate more strongly

TABLE 7.8 Reading outcomes by language, SES and province, 2016

| Variable | Coefficient |
|--------------------------------------|-----------------------------------|
| Test in home language ^a | -1.153 (7.1) |
| Asset Quintile 2 (Base: Quintile 1)b | 19.04*** (3.8) |
| Asset Quintile 3 | 16.2*** (5.2) |
| Asset Quintile 4 | 23.7*** (4.5) |
| Asset Quintile 5 | 46.9*** (6.5) |
| Afrikaans (Base: English) | -11.8 (16.4) |
| isiNdebele | -44.3** (20.4) |
| isiXhosa | -64.5*** (21.4) |
| isiZulu | -58.1*** (16.8) |
| Sepedi | -77.1*** (20 . 6) |
| Sesotho | -71 . 8*** (19.6) |
| Setswana | -96.5*** (17.0) |
| Siswati | -43.8** (19.4) |
| Tshivenda | -44.7** (21.4) |
| Xitsonga | -47.5** (21.6) |
| Free State (Base: Eastern Cape) | 58.0* (30.8) |
| Gauteng | 20.8 (29.9) |
| KwaZulu-Natal | 11.3 (25.0) |
| Limpopo | 0.3 (27.7) |
| Mpumalanga | 6.6 (27.4) |
| North West | 56.9** (26.3) |
| Northern Cape | 2.0 (25.9) |
| Western Cape | 41.6* (23.1) |
| Constant | 330.4*** (21.8) |
| Observations | 12,123 |
| R-squared | 0.170 |
| Standard errors in parentheses | ***p < 0.01, **p < 0.05, *p < 0.1 |

a Whether the test is written in the learners' home language is defined by variable ASBG03 where "I always/ almost always speak the language of the test at home" is defined as "home language", n = 9474, and "I sometimes/never speak the language of the test at home" is defined as "other language", n = 2649.

b The asset quintiles are an index created by principal component analysis of self-reported assets in the home of the learner such that the first quintile proxies the 20% least wealthy learners and the fifth quintile proxies the 20% wealthiest learners (as determined by asset wealth).

with learning outcomes than provincial borders and is thus reflected in the language coefficients rather than the provincial coefficients. This might reflect the persistence of apartheid homeland effects, which geographically correlate with learning outcomes and language more strongly than provincial borders.

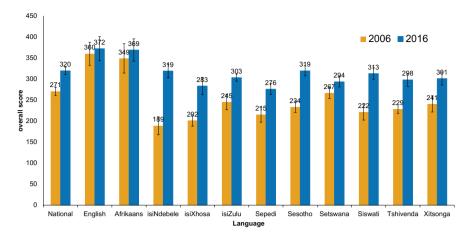
Taking the findings together, we see there is more variation in the scores by language than along the other dimensions. We may assume then that learners who were most advantaged were those writing in English in quintile 5 schools. Inversely, the most disadvantaged learners would be those writing in any of Sesotho-Setswana languages, in quintile 1 schools.

There has been some concern that pervasive low scores in the 2006⁴ Grade 4 examinations entail floor effects which led to a mismeasurement of the absolute language level of poorly performing learners (Howie et al., 2017). A detailed consideration of this is beyond the scope of this chapter. We take no view on whether this is the case. However, as this is contested, we report both changes in absolute scores (Figure 7.1) and changes in the percentage reaching the Low International Benchmark (LIB) (Figure 7.2), as the LIB is a threshold known not to suffer from mismeasurement. The low benchmark of 400–475 PIRLS points means that when reading a simple text, learners are able to: (1) locate and retrieve explicitly stated information, (2) make straightforward inferences, and (3) begin to interpret.

Gustafsson (2020) argues that, among participating countries, South Africa's improvement is the third steepest, following Morocco and Oman. Figure 7.1 shows the average performance by language in 2006 and 2016. The largest improvements have been in African languages rather than English and Afrikaans. Across the African languages, gains exceed 70 points, the largest of these found among Nguni languages, especially isiNdebele with 130. Of course, this is an improvement from a much lower base than English. This is the equivalent of more than two years of schooling, although isiNdebele schools only make up 3% of schools in the PIRLS study. However, isiZulu and isiXhosa make up 38% of schools in the sample.

While a detailed analysis of the learners' responses by languages is beyond the scope of this chapter, based on these improvements we conclude that learners have been improving in their early literacy skills. While these may not be the ultimate skill of comprehension, as measured in the PIRLS midpoint, early skills are an important building block towards comprehension. Since these improvements are across all languages, these skills are improving across the Foundation Phase education system.

Figure 7.2 shows which language had the largest changes between 2006 and 2016 based on the LIB. The percentage reaching the LIB has increased



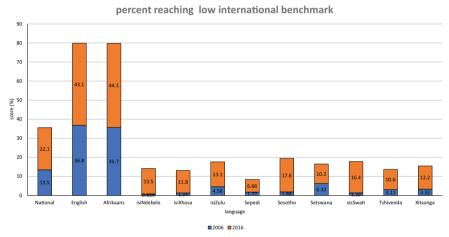


FIGURE 7.1 Grade 4 learner performance by language in 2006 and 2016 (Note: 95% confidence intervals on estimates)

nationally from 14% to 22% and there were also increases across all languages. English and Afrikaans have the highest percentages of learners reaching the LIB in 2016, at 43% and 44% respectively. There has been a 6-percentage point increase for English and an 8-percentage point increase for Afrikaans over the 10-year period, although this is not statistically significant. This means that 60% of English and Afrikaans LoLT learners still had not reached the LIB by 2016. In 2016 we find the largest gains in Siswati from 1% to 16%; isiXhosa from 1% to 12%, and 5% to 13% for isiZulu. We should however keep in mind that isiNdebele and Siswati are smaller languages. However, the overall Nguni language increases are noteworthy considering that they make up 40% of all schools.

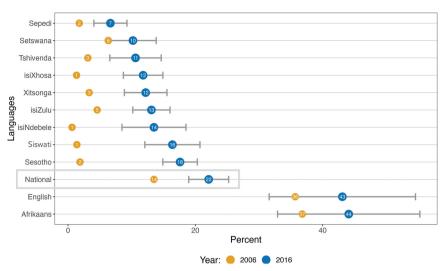


FIGURE 7.2 Percentage of Grade 4 learners reaching the Low International Benchmark in 2006 and 2016 by language (Note: 90% confidence interval on the difference in means)

Sesotho gains are also important; as a moderately-sized language, Sesotho has the largest gains of 18 percentage points. As such, overall improvement among African languages is significant compared to English and Afrikaans, with an improvement of at least 10% more African learners, on average, reaching the LIB by 2016.

Yet, the gap between the African languages and English and Afrikaans, collectively, remains stark. While the African languages had the steepest increases compared to Afrikaans, the trajectory for African languages to catch up with Afrikaans and English is not promising. In the best-case scenario, using Nguni languages as example, which gained between 6 and 10 percentage points over 10 years, it would be another 20 years before these languages are where English and Afrikaans were in 2016.

Table 7.9 shows the fraction reaching the LIB by quintile. The results are statistically significant and we see an interesting pattern: quintiles 1 to 4 had an increase between 2006 and 2016 and quintile 5 had a slight decrease. Notably, we see the largest increases from quintile 1 to 3, between 7% and 10%. This is noteworthy considering the low point in 2006. It is a signal of improving education systemically, especially because improvement in reaching this benchmark is seen across all quintiles. Therefore, regardless of school SES, schools have improved. We do, however, see that the higher the quintile the higher the fraction reaching the benchmark.

TABLE 7.9 Fraction of each quintile reaching the PIRLS LIB (400) in 2006 and 2016

| | | | 2006 | | | |
|--------------|----------|------------|------------|------------|------------|------------|
| | National | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 |
| Constant | 0.135*** | 0.0511*** | 0.0660*** | 0.0849*** | 0.206*** | 0.417*** |
| | (0.01)a | (0.01) | (0.01) | (0.01) | (0.02) | (0.04) |
| Observations | 1,1478 | 2,323 | 2,282 | 2,285 | 2,297 | 2,291 |
| | | | 2016 | | | |
| | National | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 |
| Constant | 0.221*** | 0.124*** | 0.161*** | 0.184*** | 0.233*** | 0.389*** |
| | (0.02) | (0.01) | (0.01) | (0.01) | (0.02) | (0.03) |
| Observations | 12,810 | 2,603 | 2,524 | 2,560 | 2,570 | 2,553 |

a Standard errors in parentheses.

10 Discussion and Conclusion

It is important to consider and communicate the purpose of assessment upfront. As mentioned in Howie (2012), assessment could potentially be a friend or foe for the education system and learner progression. In the case of PIRLS, the data enable a temperature check of early language acquisition for the education system before the end of primary school. Further, assessment results have generated awareness for policymakers to measure South Africa's reading performance against other countries and respond with appropriate interventions. An appropriate use of these PIRLS results is measuring the level of learning across time and measuring overall changes by languages. This is in addition to the systemic and international level comparisons.

On the other hand, these assessments have also been misinterpreted, exacerbating the anti-testing critique in South Africa and general despondency towards large-scale measurement (Nuga Deliwe, 2017). Assessments, such as PIRLS, are used as a finger-pointing exercise rather than an accountability measure; for example, teachers are critiqued for low learner outcomes but

^{*}p < 0.05, **p < 0.1, ***p < 0.01

a detailed analysis of reading gaps and a systemic effort to strengthen these aspects, based on the latest science, is not sustained.

Multilingualism has increased in South Africa from 12% in 1996 to almost 50% in 2011. In particular, African language speakers, who make up the majority of South Africans, are becoming more multilingual, increasingly stating English as a second language (Posel & Zeller, 2016; Statistics South Africa, 2012). We find the same evidence in our analysis; English as a LoLT has increased between 2006 and 2016 from 16% to 23%. However, we also find increases for several African languages; isiZulu speakers have increased from 14% to 22% across four provinces. While overall more than 90% of schools had a match between their home language 27% of classrooms are multilingual. The distinction here is that while a school may largely be monolingual there may be some multilingual classes within the school. While several analyses, including in this chapter point to some multilingualism across various languages, this is dominated by Gauteng with 64% of classes being multilingual. This requires differentiated approaches in policy and intervention responses. However, with ongoing debates on language policy implementation, the findings from this chapter continue to demonstrate the improvements in home language learning and teaching. Furthermore, the large match between home language and LoLT makes it worth considering whether extending the LiEP policy to the Intermediate Phase would be a sensible investment.

Furthermore, the data show that the reading performance gap between African home languages and Afrikaans and English remains substantial. The Afrikaans and English advantage has remained over a decade. Following earlier studies and the South African literature, this is not an intrinsic language issue but rather a reflection of inequality in schooling, with language acting as a proxy. This chapter contributes to this evidence base. Based on the literature and the PIRLS process we also rule out that this is a translation issue.

Encouragingly, the chapter shows that the large reading gains seen nationally between 2006 and 2016 were driven by African languages, albeit at the LIB level. The significant gains, particularly for Nguni languages, should be lauded. What we do not address in this chapter is how teachers teach African languages and how this may have led to these improvements.

Notes

1 Government Notice 1701 of 1997 is cited above. It was amended by Government Notice 665 of 1998, but the latter is very difficult to find in soft copy. The said amendments do not affect the issues discussed here.

- 2 The Constitutional amendments Eighteenth Amendment Bill was approved by Cabinet in May 2022 and shared for public comment. Among other purposes when the Bill is finalised and signed into law, sign language will be recognised as a twelfth official language.
- 3 Afrikaners are a South African population group descendent of Dutch colonialists from 1652. Politically and historically Afrikaner history in South Africa is contentious and includes legalising segregation, prioritising Afrikaner's interests, including language, while oppressing that of all other races.
- 4 The 2016 PIRLS Literacy assessment included a larger subsample of easier questions to accurately measure poorer performing learners.

References

- Abdulatief, S., Guzula, X., Kell, C., Lloyd, G., Makoe, P., McKinney, C., & Tyler, R. (2018). How are we failing our children? Reconceptualising language and literacy education. Bua-Lit collective. https://bua-lit.org.za/wp-content/uploads/2019/02/bua-lit-FINAL051218-2.pdf
- Abedi, J., & Lord, C. (2001). The language factor in mathematics tests. *Applied Measurement in Education*, 14(3), 219–234. https://doi.org/10.1207/S15324818AME1403_2
- AfriForum. (2022, June 15). AfriForum submits comments on BELA Bill rejects unconstitutional amendments targeting Afrikaans schools [Media statement]. https://afriforum.co.za/en/afriforum-submits-comments-on-bela-bill-%E2%80%92-rejects-unconstitutional-amendments-targeting-afrikaans-schools/
- Ahmad, S., Sultana, N., & Jamil, S. (2020). Behaviorism vs constructivism: A paradigm shift from traditional to alternative assessment techniques. *Journal of Applied Linguistics and Language Research*, 7(2), 19–33. http://www.jallr.com/index.php/ JALLR/article/view/1092
- Berthele, R., & Udry, I. (2022). Multilingual boost vs. cognitive abilities: Testing two theories of multilingual language learning in a primary school context. *International Journal of Multilingualism*, 19(1), 142–161. https://doi.org/10.1080/14790718.2019.1632315
- Casale, D., & Posel, D. (2011). English language proficiency and earnings in a developing country: The case of South Africa. *The Journal of Socio-Economics*, 40(4), 385–393. https://doi.org/10.1016/j.socec.2011.04.009
- Chalhoub-Deville, M. B. (2019). Multilingual testing constructs: Theoretical foundations. *Language Assessment Quarterly*, 16(4–5), 472–480. https://doi.org/10.1080/15434303.2019.1671391
- Cockcroft, K. (2016). A comparison between verbal working memory and vocabulary in bilingual and monolingual South African school beginners: Implications for bilingual language assessment. *International Journal of Bilingual Education and Bilingualism*, 19(1), 74–88. https://doi.org/10.1080/13670050.2014.964172
- Cummins, J. (2008). BICS and CALP: Empirical and theoretical status of the distinction. In N. H. Hornberger (Ed.), *Encyclopedia of language and education* (Vol. 2, 2nd ed., p. 14). Springer. https://doi.org/10.1007/978-0-387-30424-3_36

Davenport, T. R. H. (1966). *The Afrikaner Bond: The history of a South African political* party, 1880–1911. Oxford University Press.

- De Backer, F., Slembrouck, S., & Van Avermaet, P. (2019). Assessment accommodations for multilingual learners: Pupils' perceptions of fairness. *Journal of Multilingual and Multicultural Development*, 40(9), 833–846. https://doi.org/10.1080/01434632.2019.1571596
- Democratic Alliance. (2022). Basic Education Laws Amendment Bill (BELA), 2022 Public submission of the Democratic Alliance. https://press-admin.voteda.org/wp-content/uploads/2022/06/DA-Submissions-BELA-Bill.pdf
- Department of Basic Education. (2010). The status of the Language of Learning and Teaching (LoLT) in South African public schools: A quantitative overview. Department of Basic Education.
- Department of Basic Education. (2011). *National Curriculum Statement* (NCS): Curriculum and assessment policy statement: Senior phase, grades 7–9. Department of Basic Education.
- Department of Basic Education. (2017). Basic Education Laws Amendment (BELA)
 Bill. *Government Gazette*, 41178, 31–66. https://www.gov.za/sites/default/files/gcis_document/201710/41178gon1101.pdf
- Department of Education. (1997, December 19). Norms and standards for language policy in public schools: Government Notice 1701. *Government Gazette*, 18546. https://skole.co.za/wp-content/uploads/2019/05/NORMS-AND-STANDARDS-FOR-LANGUAGE-POLICY-IN-PUBLIC-SCHOOLS.pdf
- Eberhard, D. M., Simons, G. F., & Fennig, C. D. (Eds.). (2020). *Ethnologue: Languages of the world* (23rd ed.). SIL International.
- Equal Education Law Centre, & Equal Education. (2022). Joint submission by Equal Education and Equal Education Law Centre on the Basic Education Laws Amendment Bill 2022. GG No. 45601 of 6 December 2021. https://equaleducation.org.za/wp-content/uploads/2022/06/EELC-EE-SUBMISSION_DRAFT-BELA-BILL-2022_FINAL-1.pdf
- Extra, G., & Yağmur, K. (Eds.). (2012). *Language rich Europe: Trends in policies and practices for multilingualism in Europe*. Cambridge University Press.
- Fleisch, B. (2008). Primary education in crisis: Why South African schoolchildren underachieve in reading and mathematics. Juta.
- Flognfeldt, M. E., Tsagari, D., Šurkalović, D., & Tishakov, T. (2020). The practice of assessing Norwegian and English language proficiency in multilingual elementary school classrooms in Norway. *Language Assessment Quarterly, 17*(5), 519–540. https://doi.org/10.1080/15434303.2020.1827409
- Gibson, T. A., Jarmulowicz, L., & Oller, D. K. (2018). Difficulties using standardized tests to identify the receptive expressive gap in bilingual children's vocabularies. *Bilingualism: Language and Cognition*, 21(2), 328–339. https://doi.org/10.1017/S1366728917000074

- Gordon, S. L., & Harvey, J. (2019). Choice of language in education: Do we know what South Africans want? *Language and Education*, 33(3), 226–243. https://doi.org/10.1080/09500782.2018.1488865
- Gorter, D., & Cenoz, J. (2017). Language education policy and multilingual assessment. Language and Education, 31(3), 231–248. https://doi.org/10.1080/09500782.2016.1261892
- Govender, R., & Hugo, A. J. (2020). An analysis of the results of literacy assessments conducted in South African primary schools. *South African Journal of Childhood Education* 10(1), Article 745. http://dx.doi.org/10.4102/sajce.v10i1.745
- Gustafsson, M. (2020). A revised PIRLS 2011 to 2016 trend for South Africa and the importance of analysing the underlying microdata. Stellenbosch economic working papers: wpo2/2020. Department of Economics and the Bureau for Economic Research, University of Stellenbosch.
- Guzula, X., McKinney, C., & Tyler, R. (2016). Languaging-for-learning: Legitimising translanguaging and enabling multimodal practices in third spaces. *Southern African Linguistics and Applied Language Studies*, *34*(3), 211–226. https://doi.org/10.2989/16073614.2016.1250360
- Hoërskool Ermelo v The Head of Department of Education: Mpumalanga, No. 219/2008 (The Supreme Court of Appeal March 27, 2009). http://www.saflii.org/za/cases/ZASCA/2009/22.html
- Howie, S., Combrinck, C., Roux, K., Tshele, M., Mokoena, G., & McLeod Palane, N. (2017). *Progress in International Reading Literacy Study* 2016. Centre for Evaluation and Assessment, Faculty of Education, University of Pretoria.
- Howie, S., Venter, E., Van Staden, S., Zimmerman, L., Long, C., Du Toit, C. M., Scherman, V., & Archer, E. (2008). SA PIRLS 2006 summary report: South African children's reading achievement. Centre for Evaluation and Assessment, University of Pretoria. http://hdl.handle.net/2263/65994
- Kame, G. (2012). Multilingualism in African nation states: Stepping stones or stumbling blocks for development. *Journal of Sustainable Development in Africa, 14*(8), 228–240. https://jsd-africa.com/Jsda/Vol14N8-Winter2012B/PDF/Multilingualism%20in% 20African%20Nation%20States.Greg%20Kame.pdf
- Kanjee, A. (2020). Exploring primary school teachers' use of formative assessment across fee and no-fee schools. *South African Journal of Childhood Education*, 10(1), Article 824. http://dx.doi.org/10.4102/sajce.v1011.824
- Khatib, M., & Taie, M. (2016). BICS and CALP: Implications for SLA. *Journal of Language Teaching and Research*, 7(2), 382–388. http://dx.doi.org/10.17507/jltr.0702.19
- Kirkpatrick, A. (2012). English in ASEAN: Implications for regional multilingualism. Journal of Multilingual and Multicultural Development, 33(4), 331–344. https://doi.org/10.1080/01434632.2012.661433

Knauer, H. A., Kariger, P., Jakiela, P., Ozier, O., & Fernald, L. C. (2019). Multilingual assessment of early child development: Analyses from repeated observations of children in Kenya. *Developmental Science*, 22(5), e12875. https://doi.org/10.1111/desc.12875

- Li, H., & Suen, H. K. (2012). The effects of test accommodations for English language learners: A meta-analysis. *Applied Measurement in Education*, 25(4), 327–346. https://doi.org/10.1080/08957347.2012.714690
- Malherbe, E. (1977). Education in South Africa: Vol. 2, 1923–1975. Juta.
- Matentjie, T. (2019). Race, class and inequality in education: Black parents in white-dominant schools after apartheid. In N. Spaull & J. D. Jansen (Eds.), *South African schooling: The enigma of inequality* (pp. 283–300). Springer International.
- Mbude, N. N. (2020). IsiXhosa as the language of teaching and learning mathematics in Grade Six: Investigating the mother tongue based bilingual education mathematics pilot in the Eastern Cape Province, South Africa [Doctoral dissertation, Rhodes University]. SEALS Digital Commons. http://hdl.handle.net/10962/143262
- McClain, J. B., Oh, M. H., & Mancilla-Martinez, J. (2021). Questioning the monolingual norm with conceptually scored bilingual vocabulary assessments: Findings from a research–practice partnership. *TESOL Journal* 12(3), e585. https://doi.org/10.1002/tesj.585
- Mdlalo, T., Flack, P. S., & Joubert, R. W. (2019). The cat on a hot tin roof? Critical considerations in multilingual language assessments. *South African Journal of Communication Disorders*, 66(1), 1–7. http://dx.doi.org/10.4102/sajcd.v66i1.610
- Mohohlwane, N. (2020). *Mother-tongue instruction or straight-for-English? The primary education policy dilemma*. RESEP working paper, University of Stellenbosch.
- Mohohlwane, N., Taylor, S., Cilliers, J., Fleisch, B. D., & Kotzé, J. (in press). Reading skills transfer best from home language to a second language: Policy lessons from two field experiments in South Africa.
- Mtsatse, N. (2017). Exploring differential item functioning on reading achievement between English and isiXhosa [Doctoral dissertation, University of Pretoria]. UPSpace Institutional Repository. http://hdl.handle.net/2263/65447
- Mullis, I. V., Martin, M. O., & Sainsbury, M. (2016). PIRLS 2016 reading framework. In I. V. S. Mullis, & M. O. Martin (Eds.), *PIRLS 2016 assessment framework* (2nd ed., pp. 11–29). TIMSS & PIRLS International Study Center, Boston College.
- Nododa, B. (2022, August 12). *Stop the BELA bill. Stop school capture*. Democratic Alliance. https://www.da.org.za/2022/08/stop-the-bela-bill-stop-school-capture
- Novita, S., Lockl, K., & Gnambs, T. (2021). Reading comprehension of monolingual and bilingual children in primary school: The role of linguistic abilities and phonological processing skills. *European Journal of Psychology of Education*, *37*(4), 993–1013. https://doi.org/10.1007/s10212-021-00587-5

- Nuga Deliwe, C. O. (2017). An analysis of the measurement of the progress in learning outcomes at country level: The case of South Africa [Master's dissertation, University of the Witwatersrand]. ETD Collection. https://hdl.handle.net/10539/25944
- Özdemir, S. M. (2010). Elementary teacher competencies and in-service training needs in alternative measurement and assessment tools [Abstract]. *Türk Eğitim Bilimleri Dergisi Güz = Turkish Educational Sciences Journal*, 8(4), 787–816. https://dergipark.org.tr/en/pub/tebd/issue/26102/275014
- Posel, D., & Zeller, J. (2016). Language shift or increased bilingualism in South Africa: Evidence from census data. *Journal of Multilingual and Multicultural Development*, 37(4), 357–370. https://doi.org/10.1080/01434632.2015.1072206
- Prinsloo, M. (2021). Seeing like a state: Literacy and language standards in schools. Linguistics and Education, 64, Article 100867. https://doi.org/10.1016/j.linged.2020.100867
- Schissel, J. L., Leung, C., López-Gopar, M., & Davis, J. R. (2018). Multilingual learners in language assessment: Assessment design for linguistically diverse communities. *Language and Education*, 32(2), 167–182. https://doi.org/10.1080/09500782.2018.1429463
- Seroto, J. (2013). A revisionist view of the contribution of Dr Eiselen to South African education: New perspectives. *Yesterday and Today*, *9*, 18. http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S2223-03862013000100006&lng=en&nrm=iso
- Shepherd, D. (2013, June 23–25). The impact of teacher subject knowledge on learner performance in South Africa: A within-pupil across-subject approach [Paper]. Fourth international workshop on applied economics of education, Catanzaro, Italy. http://www.iwaee.org/papers%20sito%202013/Shepherd.pdf
- Shohamy, E. (2011). Assessing multilingual competencies: Adopting construct valid assessment policies. *The Modern Language Journal*, 95(3), 418–429. https://www.jstor.org/stable/41262376
- South Africa. (1996a). Constitution of the Republic of South Africa, 1996, as adopted on 8 May 1996 and amended on 11 October 1996 by the Constituent Assembly.
- South Africa. (1996b). South African Schools Act No. 84 of 1996. *Government Gazette*, 377(17579). https://www.gov.za/documents/south-african-schools-act
- South African Democratic Teachers Union. (2014). Annual National Assessment (ANA): $A \, sadtu \, perspective \, [Draft]. \, https://www.sadtu.org.za/docs/disc/2014/ana.pdf$
- Spaull, N. (2016). Disentangling the language effect in South African schools: Measuring the impact of 'language of assessment' in Grade 3 literacy and numeracy. *South African Journal of Childhood Education*, *6*(1), Article 475. https://doi.org/10.4102/sajce.v6i1.475
- Statistics South Africa. (2012). Census 2011: Census in brief. Statistics South Africa.
- Stein, N. (2022). Language in schools. In F. Veriava & T. Kathrada (Eds.), *Basic education rights handbook* (2nd ed., pp. 265–279). Section27.

Taras, M. (2005). Assessment – summative and formative – some theoretical reflections. *British Journal of Educational Studies*, *53*(4), 466–478. https://doi.org/10.1111/j.1467-8527.2005.00307.x

- Taylor, S., Cilliers, J., Prinsloo, C., Fleisch, B., & Reddy, V. (2017). *The early grade reading study: Impact evaluation after two years of interventions*. Technical report. Jet. https://www.jet.org.za/clearinghouse/projects/primted/resources/language-and-literacy-resources-repository/egrs-technical-report-13-oct-2017.pdf
- Taylor, S., & Taylor, N. (2013). Learner performance in the National Schools Effectiveness Study. In N. Taylor, S. van der Berg, & T. Mabogoane (Eds.), *Creating effective schools:* Report of South Africa's National Schools Effectiveness Study. Pearson Education.
- Taylor, S., & Von Fintel, M. (2016). Estimating the impact of language of instruction in South African primary schools: A fixed effects approach. *Economics of Education Review*, 50, 75–89. https://doi.org/10.1016/j.econedurev.2016.01.003
- UNESCO. (2003). Education in a multilingual world: UNESCO education position paper. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000129728
- UNESCO. (2019). How fast can levels of proficiency improve? Examining historical trends to inform SDG 4.1.1 scenarios. UNESCO. http://uis.unesco.org/sites/default/files/documents/ip-62-how-fast-can-proficiency-levels-improve.pdf
- Van der Berg, S. (2007). How effective are poor schools? Poverty and educational outcomes in South Africa. *Journal of African Economies*, 16(5), 849–880. https://doi.org/10.1093/jae/ejm017
- Van der Berg, S. (2021). Estimating the impact of five early childhood development programmes against a counterfactual. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.4009549
- Van der Berg, S., Gustafsson, M., & Burger, C. (2020). School teacher supply and demand in South Africa in 2019 and beyond. Department of Higher Education and Training.
- Van Laere, E., Aesaert, K., & Van Braak, J. (2014). The role of students' home language in science achievement: A multilevel approach. *International Journal of Science Education*, 36(16), 2772–2794. https://doi.org/10.1080/09500693.2014.936327
- Williams, E. (1996). Reading in two languages at year five in African primary schools. *Applied Linguistics*, 17(2), 182–209. https://doi.org/10.1093/applin/17.2.182
- Wright, L. (2002). Language as a 'resource' in South Africa: The economic life of language in a globalising society. *English Academy Review, 19*(1), 2–19. https://doi.org/10.1080/10131750285310031