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ORIGINAL PAPER

Learning in the mother tongue: Examining the learning outcomes of the South African *Kha Ri Gude* literacy campaign

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Abstract
The aim of this article is to examine literacy and numeracy scores of learners who participated in the South African *Kha Ri Gude* Literacy Campaign. Analysing the learning outcomes of the 2011 cohort of a total of 485,941 participants, the authors seek to identify variations between the learners' achievements across the eleven official South African languages. Besides exploring the relationship between the literacy and numeracy assessment scores by language, the authors also analyse these scores against various relevant features of the learners' profiles such as their residential type (rural village, urban township etc.), regularity of class attendance and previous school attendance, if any. They asked ten language experts who had been involved in the development of the campaign's learner materials to rank the various languages according to their level of difficulty with regard to literacy learning and to interpret the variation in learner achievement scores across the South African languages. This interpretation demonstrates that the challenges of teaching and learning literacy and numeracy in South African languages go beyond the difficulty levels established on the basis of linguistic criteria. The authors contend that future literacy programmes will have to take existing hierarchies and inequalities among language groups into account and devise differentiated strategies to achieve parity of learning.

Keywords Literacy campaign · Multilingualism · African languages · Literacy · Numeracy · Enabling features for literacy and numeracy learning · Language of instruction (LOI)

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Résumé
Apprendre dans la langue maternelle : résultats de la campagne d'alphabétisation sud-africaine *Kha Ri Gude* – Cet article a pour objet d'examiner les résultats en littératie et numératie obtenus par les apprenants ayant participé à la campagne d'alphabétisation sud-africaine *Kha Ri Gude*. En analysant les résultats d'apprentissage obtenus par la cohorte de 2011 comptant un total de 485 941 participants, les auteures tentent de déterminer les variations des acquis des apprenants entre les 11 langues officielles en Afrique du Sud. Elles explorent le rapport entre les résultats d'évaluation en littératie et numératie ventilés par langue, et les analysent en outre en fonction de plusieurs caractéristiques significatives dans les profils des apprenants, telles que leur type d'habitat (village rural, agglomération urbaine etc.), la régularité dans leur fréquentation des cours et le cas échéant leurs antécédents scolaires. Les auteures ont prié dix experts linguistiques, auparavant impliqués dans la conception des matériels pour les participants à la campagne, de classer les langues selon leur niveau de difficulté quant à l'apprentissage de l'écrit, et d'interpréter la variation dans les résultats des apprenants en fonction des diverses langues sud-africaines. Cette interprétation démontre que les défis que posent l'enseignement et l'apprentissage de l'écrit et du calcul dans les langues sud-africaines dépassent les niveaux de difficulté établis à partir des critères linguistiques. Les auteures déclarent que les futurs programmes d'alphabétisation devront tenir compte des hiérarchies et des inégalités existantes entre les groupes linguistiques, et concevoir des stratégies différenciées en vue d'atteindre l'équité dans l'apprentissage.

Introduction

The United Nations Educational, Scientific and Cultural Organization (UNESCO) advocates a bilingual or multilingual approach to literacy as a key element of linguistically and culturally diverse societies. As early as 1953, UNESCO stressed the importance of educating children in their mother tongue (UNESCO 1953). Fifty years later, UNESCO developed a normative framework, guidelines and principles for languages and education, and published these in a position paper (UNESCO 2003). In this normative document, UNESCO makes a strong case for mother tongue instruction as a means of improving educational quality by building on the knowledge, skills and experience of learners and teachers. With regard to adult literacy learners, UNESCO recommends they "should make their first steps to literacy through their mother tongue, passing on to a second language if they desire and are able" (UNESCO 1953, p. 69, quoted in UNESCO 2003, p. 31).

Learning is most effective in the language spoken at home. However, this minimum standard for quality education is still not met for many learners: Approximately 2.3 billion people (40 per cent of the world's population) do not have access to education in a language they speak or understand (Ball 2014; UNESCO 2016). These challenges, which affect children and adults alike, are most predominant in regions where linguistic diversity is greatest, such as in sub-Saharan Africa (UNDP 2004). Efforts are being made to promote local languages, in particular in the context of research, assessment, and specifically in teaching literacy (Habou 2017). Many

African countries do have legislation on the use of languages in education focusing on language(s) of instruction (LOI), mother-tongue instruction and multilingualism. But while the linguistic and cultural diversity of sub-Saharan Africa constitutes a valuable resource and offers potential for maximising skills in development activities, so far, existing legislation is only being put into practice in some African countries. One example is South Africa.

The *Constitution of the Republic of South Africa* (RSA 1996) supports the development of all eleven official languages.[1] This includes and is reflected in a national language in education policy that advances an *additive* bilingual/multilingual approach.[2] The legacy of apartheid left severe backlogs in South African schooling and the acquisition of literacy skills. A study conducted by the Ministerial Committee on Literacy (MCL) in 2006 established that about 9.6 million adults (24 per cent of the entire adult population of South Africa aged over 15 years) did not have an adequate level of literacy skills (DoE 2006). Of these, 4.7 million could not read or write (i.e. had never attended school), while 4.9 million had incipient levels of literacy due to having dropped out of formal school before completing primary education.

The continued prevalence of the literacy challenge and its negative effect on development and social transformation prompted the government of South Africa to launch the *Kha Ri Gude* Adult Literacy Programme in February 2008.[3] Essentially, the campaign aimed to promote the right of all citizens to gain access to basic education[4] in their own language (i.e. universal access to education), targeting non-literate adult learners aged 15+ in all nine provinces of South Africa. The intention was to provide learners with literacy and numeracy skills as a vehicle towards enabling them to become self-reliant and uplift their standard of living.

The *Kha Ri Gude* (KRG) programme was designed as an integrated and multilingual mass adult literacy campaign to be implemented across the entire country by the State through the South African Department of Basic Education. Classes were offered in all of the eleven official languages, for which various teaching–learning materials were developed. In addition, the programme also provided instruction in English as a second language (ESL) in order to enable learners to conduct tasks that require the use of English, such as opening a bank account or filling in official

[1] The eleven official languages of South Africa include two colonial languages (Afrikaans and English), and nine indigenous languages (isiNdebele, siSwati, isiXhosa, isiZulu, seSotho, sePedi, seTswana, tshiVenda and xiTsonga).

[2] In a nutshell, an "additive" bilingual/multilingual approach refers to conditions where learners' first language is valued and maintained while they are encouraged to learn a second language.

[3] *Kha Ri Gude* (pronounced [car-ri-goody]) is tshiVenda for "Let us learn". The name was chosen in recognition of tshiVenda as a minority language. The programme was phased out in 2017.

[4] The *Kha Ri Gude* programme was designed to be the first step of the South African Adult Basic Education and Training (ABET) programme, with a major focus on elementary literacy, language and numeracy. In other words, the horizon of the campaign was not just a second-chance opportunity for all persons who were excluded from formal schooling during the apartheid period (c. 1950–1993) to acquire literacy, language and numeracy skills. It also allowed learners to continue with ABET to obtain the General Education and Training Certificate (GETC) through non-formal education pathways. General Education and Training (GET) includes compulsory formal schooling up to Grade 9 and ABET.

forms. The South African *Kha Ri Gude* Literacy Campaign is an inspiring example showing that the use of mother tongues as languages of instruction increasingly matters in Africa. This experience, which started in 2008, has generated an array of valuable lessons.

The overall aim of this article is to analyse the learning outcomes of the *Kha Ri Gude* Literacy Campaign to determine the extent to which they reflect the constitutionally guaranteed parity of esteem and equality across all eleven South African national languages. We begin by considering *Kha Ri Gude* participants' literacy and numeracy scores by language. The data we examined were generated through a standardised measurement tool, the Learner's Assessment Portfolio (LAP), which the campaign used to collect test-based evidence on learning outcomes as well as relevant biographical and other information about each learner. We analysed these data[5] to identify the differences of the literacy and numeracy scores across the eleven languages as well as their correlations with different features of the learners' profiles.

In a second step, we asked ten language experts who had been involved in designing the literacy campaign materials to classify the eleven languages with regard to their difficulty levels and then to interpret the language-related score differences of learners. We sent them questionnaires, which they filled in and returned to us, but we complemented their responses with information from e-mail exchanges we had with them. In the conclusions at the end of our article, we try to draw some lessons from our findings. We also make suggestions for how the linguistic dimension of literacy teaching and learning can be better understood by educators and how existing inequalities can be reduced in the future to achieve parity of learning.

Research evidence supporting mother tongue-based learning

Literacy, numeracy and language skills are seen as crucial foundations for people's empowerment as they open up new options and life opportunities (see Freire 1998; Giroux 1997; McLaren 1995; Gee 1991; Street 1995, 2003, 2005). The importance of creating a sustainable demand for literacy, numeracy and language learning has long been emphasised (UNESCO 1972, 2005; Easton 2009, 2014), and best-practice examples have recently been analysed of successful strategies to bring the culture of reading, writing and learning closer to the people, especially people from rural and disadvantaged communities (Hanemann and Krolak 2017). Rich and dynamic *literate environments*[6] can have a positive influence on people's motivation to engage in literacy and learning as well as on the outcomes of related activities.

[5] All LAPs were archived in the National Learners' Records Database (NLRD), which was set up to "facilitate the management of the National Qualifications Framework (NQF) – the first such system in the world" (Shapiro 2008, p. 1).

[6] A rich literate environment is characterised by an abundance of opportunities to practise literacy skills. This includes reading materials (posters, leaflets, newspapers, books etc.), broadcast media (radios, TVs) and information and communication technology (mobile phones, tablet and laptop computers, and access to the Internet).

The complex interrelationship between literacy, language and learning

Understanding the interrelationships between literacy, language and learning is a complex issue. Recent research has focused on the increasing multidimensionality and complexity of literacy conceptualised from a lifelong learning perspective (Hanemann 2015). The term "literacy" usually refers to the ability to deal with written text. Numeracy, as mediated by written material, is often added as a complement to (or even perceived as a component of) literacy. However, it is more and more dealt with as a competency with its own characteristics. Increasingly there is also mention of language skills, in recognition of the fact that most people live in linguistically diverse contexts and need to communicate – orally and in writing – in different languages.

By bringing together the fields of literacy, bi- or multilingualism, and cognitive development, educational researchers have made important contributions to a better understanding of the complex interrelationships between literacy, language and learning. Moreover, they have developed theoretical frameworks for "biliteracy"[7] and language in education planning which are also significant for transformative and empowering approaches to literacy (see Cooper 1989; Hornberger 1989, 2004; Hornberger and Hult 2008; Hornberger and Skilton-Sylvester 2010; Olson et al. 1985; Olson and Torrance 1991; Tollefson 2008; UNESCO 2003).

Research summaries describe reading as the development of *phonological awareness*, *decoding* (which includes accuracy and fluency),[8] vocabulary and comprehension (Snow 2002). Furthermore, the learner needs to know the alphabetic principle, concepts about print, *grapheme-phoneme* knowledge, and *word analysis*.[9] The learner also needs to develop the ability to decode or spell automatically. Knowledge of language and text features is another precondition for learning to read with comprehension.[10]

The importance of reading automaticity

The implications of neurocognitive research for adult reading automaticity have been discussed by several scholars (e.g. Knowland and Thomas 2014; Abadzi 2008, 2012). Evidence has shown that fast reading (fluency) is necessary for comprehension, because our short-term memory ("working memory"), which has limited capacity, must be able to retain a message long enough to make sense of it. Longer words impose larger loads on short-term and visual memory and character

[7] "Biliteracy" refers to "any and all instances in which communication occurs in two (or more) languages in and around writing" (Hornberger 1990, p. 213).

[8] "Phonological awareness" refers to the ability to identify and manipulate individual sounds (phonemes) in spoken words. "Decoding", in this context, refers to the application of one's knowledge of letter-sound relationships to correctly pronounce written words.

[9] "Grapheme-phoneme knowledge" refers to the knowledge of the written symbol of a speech sound. "Word analysis" refers to the process of using the relationships between spelling and pronunciation at the letter, syllable and word levels to figure out unfamiliar words.

[10] Comprehension is the ultimate goal of reading (Hock and Mellard 2005).

recognition buffers (Garrod 2006), and this potentially affects the decoding process. Therefore, texts can be understood only after a minimum reading speed has been attained to overcome the "bottleneck" (Abadzi 2008, p. 584) of the limited capacity of the *working memory*.[11] This minimum speed seems to be about 1–1.5 words per second or 45–60 words per minute for about 80 per cent comprehension of simple text (see Abadzi and Prouty 2012).

One of the implications of this for literacy learning is the importance of teaching learners to spot items which are termed *sight words*. These usually short or frequently used (individual) words involve automatic recognition which "frees" the limited capacity of working memory to capture the meaning of a whole or part of a sentence. Languages with shorter words (e.g. English) are easier to decode than those with longer (agglutinated) word lengths (e.g. isiZulu). English sight words such as *and, all, be, can, from* etc. are conducive to reading automaticity. In any case, cognitive resources required for achieving reading automaticity in one language (e.g. isiZulu) are different to those required for another (e.g. English). Teaching materials and methodologies need to take these differences into account.

There are many inherent challenges with respect to measuring reading speeds. While there are well-developed norms for English (Hasbrouck and Tindal 2006), similar norms are largely absent for African languages (Abadzi 2008). The *parametric variation*[12] in the nature of the word prevents the norms of one language being applied to another in an ad hoc fashion. For example, what does a reading speed of 60 "words" per minute mean to a speaker of isiXhosa, a language written in a conjunctive orthography[13] (De Vos et al. 2014)?

Since four of the eleven official languages of South Africa use conjunctive orthography, the approach used for assessing *Kha Ri Gude* learners' reading speed was to ensure the equivalency of the number of syllables in order to obtain comparable data.

Evidence on effectiveness of mother tongue-based bilingual/multilingual education

There is empirical evidence that supports a direct linkage between language and literacy. This has been particularly researched for children with diagnosed language disorders (see Moore 2014), but it may equally well apply to adult literacy learners.

[11] As Helen Abadzi explains elsewhere, our "working memory", which "spans only a few seconds … contains what is in our mind right now. Short-term memory is one of its components" (Abadzi 2016, p. 257),

[12] "Parametric variation" refers to the systematic grammatical variation permitted by the human language ability.

[13] A conjunctive writing system yields only one orthographic word also corresponding to one linguistic word. The four languages in the Nguni group (isiNdebele, siSwati, isiXhosa and isiZulu), for example, have conjunctive writing systems. Orthography, together with language structure and *metalinguistic* skills (being aware of certain context-dependent language rules and able to apply them) have an influence on word recognition and development of reading fluency (see Probert and De Vos 2016; Taljard and Bosch 2006).

Phonological and *morphological* skills[14] are among the most important areas of language that are predictive of successful literacy development (Fraser and Conti-Ramsden 2008). Other skills areas that are relevant for both language and literacy include reading comprehension and narrative skills, and vocabulary (Cirrin and Gillam 2008).

There is ample evidence that the use of learners' mother tongue as the language of instruction has a positive impact on learning outcomes (UNESCO 2016). Research has consistently demonstrated that learning to read and write in one's mother tongue facilitates access to literacy as well as the ability to read and write in other languages (e.g. Brock-Utne 2000; Heugh 2003; Hornberger 2003; Ouane 2003; Grin 2005; Ouane and Glanz 2011).

The 2006 Education for All (EFA) Global Monitoring Report, entitled *Literacy for Life,* emphasised that

> National language policies – the designation of an official language, the choice of language of instruction in schools and adult learning programmes – can facilitate or hinder language development and literacy acquisition (UNESCO 2005, p. 24).

Furthermore, the report found that

> literacy provision that uses initial learning in the mother tongue and then moves to a second language has cognitive, psychological and pedagogical advantages (ibid., p. 203).

Based on guiding principles (Alidou and Glanz 2015) and on key features of an inclusive approach to multicultural and multilingual contexts (Robinson 2005, 2015), there is some evidence on what can be considered "good practice" in multilingual and multicultural contexts. An analysis of 21 case studies from all world regions[15] concludes that

> good practice reflects the respect accorded to the cultural and linguistic rights of all groups, uses a participatory approach to mediate among different needs and aspirations, and draws on culture and language as resources that enrich the teaching and learning process (Hanemann and Scarpino 2016, p. 12).

Other research on the role of African languages in education also emphasises the need for optimal use of existing skills and resources (Ouane and Glanz 2011) and for creating rich literate environments in those languages (Hanemann and Krolak 2017).

[14] In a nutshell, "phonological skills" refer to the ability to identify individual sounds in spoken language. "Morphological skills" refer to the ability to analyse word structures.

[15] The 21 examples of promising literacy initiatives – including the South African *Kha Ri Gude* programme – have been published on UNESCO's Effective Literacy and Numeracy Practices Database (LitBase), see UIL (n.d.).

Mother tongue-based teaching and learning methodologies

The pedagogical advantages of a mother tongue-based approach to learning are well documented in the literature (e.g. Cummins 2000; MacDonald 1990, 1991; Alidou et al. 2006). These researchers' argument is simply that learning in the mother tongue is what enables learners to build on knowledge they already have, and to develop the more advanced concepts and knowledge that they need to continue learning in their mother tongue as the conduit for transferring learning to their second language.

Despite evidence-based awareness of these advantages, there are many challenges in using mother tongue-based teaching and learning to improve learning outcomes in adult literacy and education. One of the common challenges identified in the above-mentioned analysis of case studies (Hanemann and Scarpino 2016) is how to integrate multilingualism into adult learning programmes to enhance the literacy development of all learners when there is a lack of competent educators who are proficient in local languages and adequately trained to teach in these languages. Often, literacy teachers speak the local language, but they do not feel confident in writing it, or they are not equipped with pedagogical strategies to support bilingual or multilingual practices in the classroom (ibid.). One way of addressing this challenge is to ask the linguistic community to help identify the most appropriate candidates to be trained. These are likely to be people who share the learners' culture and experiences, and selecting them helps to mitigate having teachers brought in from elsewhere who use languages that learners do not understand.

A recent study cautions about underestimating the language problems arising from the structural and *typological* differences[16] in the South African languages:

> Literacy is different in each language and sits at the confluence of a cognitive, orthographic and linguistic/structural nexus. Thus there is no one-size-fits-all approach to literacy (De Vos et al. 2014, p. 20).

Mark Andrew De Vos and his colleagues argue that reading strategies required for learning the "mechanics of reading" have to be necessarily different and should be supported by language-specific pedagogies. These should be defined by linguistic approaches to understanding (a) orthography, (b) cognitive reading skills and models and (c) indigenous, language-specific norms and resources (ibid.).

The ongoing impact of colonialism perpetuates inequality

Research in the African context suggests that the sustained heavy emphasis on colonial languages increases inequality by impeding progress through the education system, particularly for marginalised groups (Coyne 2015). The impact of colonialism in Africa has been described as "linguistic imperialism" which emanates from both colonial and post-colonial periods (Phillipson 1996). This has contributed to

[16] "Linguistic typology" refers to the analysis of the differences between languages.

a negative esteem and underdevelopment of indigenous African languages. In this context, the Organisation for African Unity (OAU) [17] has played an important role in opposing the imperialist influence of the colonial languages. In 1986, as part of its national programmes, the OAU mounted a campaign to educate or re-educate populations about the inherent or potential practical utility of African languages. The aim of the campaign was to counter widespread negative attitudes in Africa towards these languages and to liberate Africans from undue reliance on non-indigenous languages as the dominant, official languages (ibid.).

While countries such as South Africa have taken legislative measures (discussed in the next section) to ensure parity of esteem and that the languages are treated equitably, Thobeka Mda argues that these efforts were introduced too late, since the conquest of the African languages has already advanced too far and extinction is inevitable. To support this argument, she traces this process from colonisation in the 18th century through to the apartheid state (1948–1994), demonstrating the lasting effects colonisation had on African languages. She contends that despite the change in legislation and the move to empower African languages in post-apartheid South Africa, "the damaging effects of dominance and suppression are manifested in the attitudes the speakers generally have towards their languages and how they use them" (Mda 2010, p. 18). She argues that, by consequence, "the African languages seem to be inevitably destined for extinction" (ibid., p. 18).

The language approach of the South African *Kha Ri Gude* literacy campaign

The South African language policy

The *Kha Ri Gude* Literacy Campaign was conceptualised in accordance with the Constitution of the Republic of South Africa (RSA 1996), which seeks to enhance the status and development of the eleven official languages and urges national and provincial governments to take "practical and positive measures to elevate the status" (ibid.) of these languages, and to monitor their use in order to ensure that they "enjoy parity of esteem and [are] treated equitably" (ibid.; McKay 2012).

The Pan South African Language Board (PanSALB),[18] established as stipulated in the Constitution, is required to create conditions for the development of the eleven official languages as well as South African Sign Language (SASL), to promote and ensure respect for all languages, to promote multilingualism, and to safeguard the language rights of the groups concerned (McKay 2015). In general terms, PanSALB is mandated to promote the restoration of social justice for the people whose

[17] The Organisation for African Unity (OAU) was founded in 1963. South Africa joined in 1994. In 2002, OAU became the African Union (AU). One of its ministerial-level Specialised Technical Committees is tasked to address Education, Culture and Human Resources. For more information, see https://au.int/en/au-nutshell [accessed 26 March 2019].

[18] For more information about PanSALB, see http://www.pansalb.org/index.html [accessed 26 March 2019].

languages were historically denigrated (Brock-Utne 2016). PanSALB's development of language infrastructure including provincial language committees (one in each province); national language bodies to advise on particular languages; lexicographic (dictionary-compiling) units operating as companies; as well as databanks, etc., has played an important role in countering the colonial denigration of indigenous languages in South Africa (Alexander 2004).

Besides prompting the creation of PanSALB, the Constitution's quest for the promotion of multilingualism also gave rise to the South African government's additive bilingualism/multilingualism policy, whereby each person should learn a language or languages in addition to his or her mother tongue. This is articulated in the *South African Language-in-Education Policy* (DoE 1996a, 1996b) and informed the rationale to ensure that the *Kha Ri Gude* campaign embraced all the eleven official languages (McKay 2012, 2015, 2018).

Classification of the eleven South African languages

In compiling the *Kha Ri Gude* learning materials within language clusters and ensuring standards across all official languages, it was useful to classify the languages in terms of their roots. Out of the eleven official languages, two belong to the West Germanic language family (Afrikaans and English) and nine to the Southern Bantu language family. Four of these Southern Bantu language family are Nguni languages (isiNdebele, siSwati, isiXhosa and isiZulu) and three are Sotho–Tswana languages (seSotho, sePedi, and seTswana). Two are considered to be isolate languages (tshiVenda and xiTsonga, with the latter being a cross-border Tswa–Ronga language spoken chiefly in southern Mozambique, northeastern South Africa and southeastern Zimbabwe). In addition, there is South African Sign Language (SASL), which is understood across all eleven official languages. Manually coded language is used in education, as a bridge between SASL and the eleven official oral languages of the country[19] (Aaron and Reynolds 2003) – a practice followed in the *Kha Ri Gude* Literacy campaign.

Language breakdown of enrolled adult learners by province

Administratively, South Africa is divided into nine provinces: Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Mpumalanga, Northern Cape, Limpopo, North West, and Western Cape. Figure 1 shows the geographical distribution of enrolled learners by province, and by language within each province.[20] Multilingual classes were more prominent in certain provinces where there is more than one dominant official language, while other provinces with dominant languages were more likely

[19] These codes apply the signs of SASL to the grammar of the oral languages, resulting in Signed English, Signed Afrikaans, Signed Xhosa, Signed Zulu, etc. They are not a natural form of communication among deaf people (Aarons and Reynolds 2003).

[20] The bar graph is based on figures from the 2011 campaign dataset (DBE 2011). For this article, we analysed data of an overall total of $n = 485{,}941$ learners.

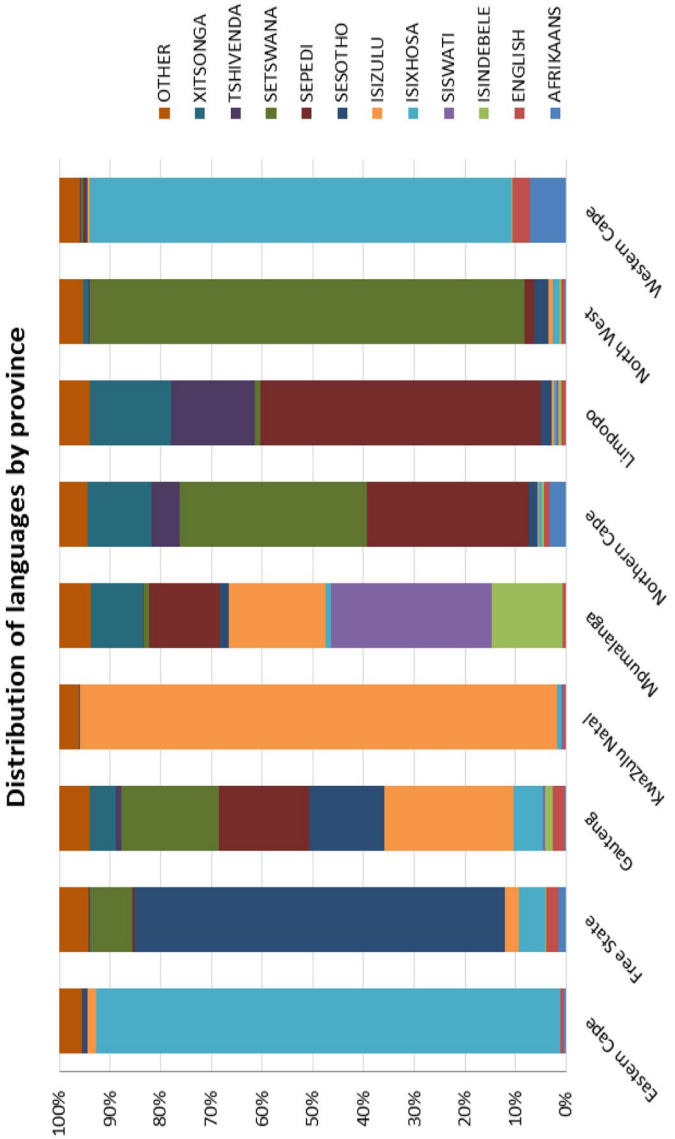


Fig. 1 Language breakdown of enrolled learners by province

to have monolingual class groups. As none of the provinces are completely monolingual, in many instances teachers – a significant number of them novice volunteers – were required to teach in more than one language.

Context of the Kha Ri Gude *literacy campaign's operations*

For the purposes of our analysis of *Kha Ri Gude* learners' achievements, it is important to provide some information on the context of the campaign's operations.

(1) The *Kha Ri Gude* National Mass Literacy Campaign was launched in February 2008,[21] with the intention of enabling 4.7 million South African adults to become literate and numerate, in one of the eleven official languages.
(2) Initiated and managed by the Department of Education, *Kha Ri Gude* delivered to all corners of the country in a massive logistical outreach.
(3) *Kha Ri Gude* enabled learners to read, write and calculate in their mother tongue in line with the South African Qualifications Framework Unit Standards for Adult Basic Education and Training (ABET) level 1,[22] and also to learn spoken English.
(4) The *Kha Ri Gude* materials teach reading, writing and numeracy in an integrated way. Life skills around themes like health, gender, the environment and social justice were mainstreamed across the curriculum.
(5) *Kha Ri Gude* was available at no cost to adults who have little or no education.
(6) Classes were held for 10 hours per week (usually spread over three days per week), for a period of six months, at times which were convenient to the learners, and took place in homes, churches and schools.
(7) The *Kha Ri Gude* materials have been adapted for use in Braille in eleven languages, and for use by the deaf.
(8) The teaching was provided by approximately 40,000 volunteers who were paid a monthly stipend or honorarium for each class they taught. This was to ensure that they did not incur costs for travel.
(9) The educators were organised into groups of 10 under their supervisor. The groups functioned as Communities of Practice (COPs) where educators share ideas, report on critical incidences and receive additional training and support.
(10) The campaign used a cascade model for implementation. Each educator was required to recruit and teach classes of 18 learners. The educators were organised in groups of 10 under a supervisor who supported and monitored them. Each coordinator, in turn, managed 20 supervisors (McKay 2017).

[21] The campaign's last intake was in 2016 and it formally ended in 2017.

[22] The South African national system of Adult Basic Education and Training (ABET) was established in 1994. ABET level 4 is an adult education qualification which is registered at level 1 of the National Qualifications Framework (NQF) and comparable to grade 9 of formal general education. ABET level 1 is equivalent to grade 3 of the formal schooling system.

Main features of the campaign influenced by the language approach

The additive bilingual/multilingual language approach of the campaign informed the curriculum, the learning materials as well as the methods used to teach mother tongue literacy. It also informed the training of the literacy educators and the assessment approach used to measure learning achievement.

Materials provided to learners

The campaign opted for the development of core national materials which were designed to cater for various language and cultural differences, and then regionalised as required for regional languages. The Ministerial Committee on Literacy (DoE 2006) drew upon the national census and other available data to determine the geographical and numerical spread of literacy needs at the time.

Each learner received core materials for literacy and numeracy, as well as a Learner Assessment Portfolio (LAP) in their mother tongue. Because the campaign relied on untrained volunteer educators who worked in less than adequate circumstances at nearly 40,000 sites across the country, it was essential to ensure that materials were highly structured with inbuilt sequenced activities to teach, and strong supportive teachers' notes. Because the materials were closely linked with the Learner Assessment Portfolio activities, educators needed to follow the workbook to ensure learners would be able to complete the assessment activities. In some cases, classes comprised learners of different languages. To cater for this, the materials were designed to be equivalent in dealing with the same themes and topics, in order to help teachers to cope with multilingual classes.

The core materials include examples of authentic texts such as timetables, calendars, clinic health records, and various forms (banking etc.) to be completed, etc. In addition, learners themselves brought more personalised literacy needs to classes such as: How to apply for a driver's license, how to read the Bible or a hymn book, how to read a child's school report, how to calculate a budget for a small business initiative, how to apply for a social grant, and how to use a cell phone.[23] Educators were encouraged to ensure that they addressed and catered for these specific needs of their learners (McKay 2015).

Methods used for teaching mother tongue-based literacy

According to the *Training Manual for Volunteer Educators*, one of the principles that drove the *Kha Ri Gude* Literacy Campaign was "support of the official language policy" (McKay and Sekgobela 2015, p. 22). With regard to teaching

[23] The inclusion of these authentic reading, writing and calculating activities is consistent with New Literacy Studies (NLS; focusing on social communicative practices), an approach which argues for the practice of reading and writing to be relevant in specific situations so that the learner may obtain or communicate specific information within a specific context (see e.g. Archer 2003; Street 2003; Rogers 2006; Prinsloo and Breier 1996).

mother tongue-based literacy, educators received information on the expected learning results (e.g. by the end of the programme, learners should be able to read with understanding and write their own thoughts, write personal letters, fill in blanks in simple texts, tell the difference between different types of text and understand the meaning of texts, follow simple instructions, write their own life stories, etc.). In addition, the programme required that learners covered a number of graded learning steps as they developed literacy skills, such as visual literacy (reading pictures), letter shaping, manual dexterity development, letter and word recognition, and word and sentence development, etc.

Teaching someone to read is a complex undertaking, especially when the learner is an adult, and the educator is an un-/under-trained volunteer. It was therefore necessary that the methods – which, if followed, would help educators to facilitate their learners' development of reading and writing skills – were reflected in the materials. Drawing on the benefits of the *language experience* and *whole language* approaches,[24] the *Kha Ri Gude* methods follow an "integrated" approach to literacy acquisition, while also taking any recent findings of neurocognitive research into account. In line with this research, the *Kha Ri Gude* materials pay explicit attention to enhancing learners' perceptual and visual literacy skills, and systematically introducing *phonemes/graphemes*[25] according to linguistic typologies developed for each language. In this way, the campaign was able to direct and map learners' progression in *phonic knowledge and skills*.[26]

Recognising that the ability to decode individual words is not sufficient, the *Kha Ri Gude* approach to teaching literacy simultaneously also attends to improving learners' reading fluency, which promotes comprehension. The materials include a range of word cards and a phonic "domino" game to assist automaticity. The intention was that learners develop a reading speed of at least 32 words per minute when tested in approximately the fourth month of the six-month programme. In designing the reading speed test item, the language experts used words with the same number of syllables of the same length so as to account for *agglutinative*[27] words used by some of the languages.

Training 40,000 literacy educators

Kha Ri Gude educators needed to be trained to teach using the various components of the campaign. They were given training on adult-appropriate teaching–learning methods, classroom management, how to use teaching modules to conduct lessons, as well as advice on how to conduct the assessment activities in the LAPs. The teachers' guidance notes for each lesson focus specifically on the phonics to

[24] The "language experience" approach is a whole language approach that promotes reading and writing through the use of personal experiences and oral language. The "whole language" approach uses strategies that show how language is a system of parts that work together to create meaning.

[25] A "phoneme" is a speech sound; a "grapheme" is the smallest unit of the writing system.

[26] "Phonic knowledge and skills" refers to understanding which letters make which sounds.

[27] An "agglutinative" language is characterised by adding several morphemes to a noun or verb to denote case, number, gender, person, etc. to make up words.

be taught and also on the theme and topics for discussion. *Kha Ri Gude* educators were also guided on how to teach the reading and writing activities included in the workbook and on how to conduct a reading speed test which is modified for each language. Furthermore, the organisation of *Kha Ri Gude* educators into communities of practice (COPs) provided ongoing support and problem-solving opportunities throughout their service as volunteers (McKay 2017).

Learner Assessment Portfolios (LAPs)

The LAPs provided a standardised assessment tool which could both assess and document learner achievement in literacy and numeracy, and which could also provide systemic information needed to monitor the delivery and quality of teaching and learning. The LAPs consist of ten literacy and ten numeracy test items that learners took over the course period. This process was quality-assured by an internal moderation and an external verification system. The assessment system had to be scalable in order to assess 600,000 or more learners per annum, and easy to administer by un-/undertrained educators. The instrument is available in all eleven official South African languages and is discussed in detail elsewhere (McKay 2015). In addition to documenting learners' assessment scores as a means of gauging learning outcomes, the LAPs allowed the campaign to profile learners anonymously[28] in terms of their age, language(s), residential type (rural village, urban township etc.) and previous learning/school experience, etc.

Literacy and numeracy scores by language and other learner profile features

Methodology and research questions

All the data we analyse in this section were obtained from the LAPs captured from one year (2011)[29] of the *Kha Ri Gude* Literacy Campaign. The 2011 campaign cohort consisted of a total of 485,941 learners ($n = 485{,}941$) who submitted their completed assessment portfolios at the end of the course. To analyse the data, we used various statistical procedures, including Spearman's rank correlation coefficient, and the SAS statistical software package.

The data included anonymised biographical information on each learner, learner scores for the ten literacy assessments and the ten numeracy assessments.

[28] We used the learners' names for their certification and for including their records on South African Qualifications Authority's (SAQA) National Learners' Records Database (NLRD). All learners were given student numbers that were used for campaign records and administration.

[29] The campaign reached 4.5 million learners in the period 2008–2016. The last learners were enrolled in 2016 and the campaign formally concluded in 2017. After the first three years, the campaign had overcome initial teething problems (piloting and trouble-shooting to ensure optimal teaching and learning) and began providing more reliable data. We therefore selected 2011 as a stable year for this study, because in the latter years, the campaign was already "winding down".

Our objective in examining the 2011 data was to answer the following research questions:

(1) What differences, if any, exist between learners' literacy and numeracy scores?
(2) Is there any correlation between learners' literacy and numeracy scores?
(3) What differences exist in the literacy and numeracy scores across the eleven official languages?
(4) What differences exist in reading speed scores across the eleven official languages?
(5) How do learners' scores correlate with different features of learner profiles such as residential type, regularity of class attendance and previous school experience?

Examining the dataset according to the research questions

What differences, if any, exist between learners' literacy and numeracy scores?

Figure 2 depicts the distribution of the learners' mean literacy scores (shown as percentages) for the sum of all ten literacy test items for the 2011 cohort of 485,941 learners who submitted their completed LAPs at the end of their course.

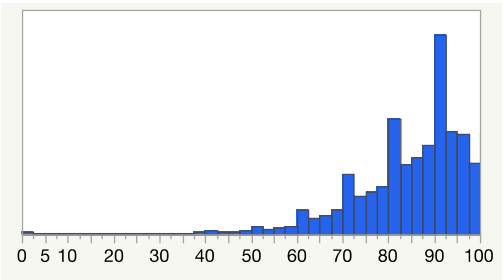
Figure 3 shows the distribution of the learners' mean numeracy scores for the sum of all ten numeracy test items for the same learners (in percentages).

As reflected in Figs. 2 and 3, the mean scores for literacy and numeracy were relatively high, with the mean score for numeracy 88.5 marginally higher than the mean score for literacy which was 85.4. One possible explanation for this may be that non-literate adult learners tended to have a better-developed number concept due to the cash economy and their everyday life experience with numeracy-related activities such as purchasing groceries by kilogramme or drinks in litres.

Is there any correlation between learners' literacy and numeracy scores?

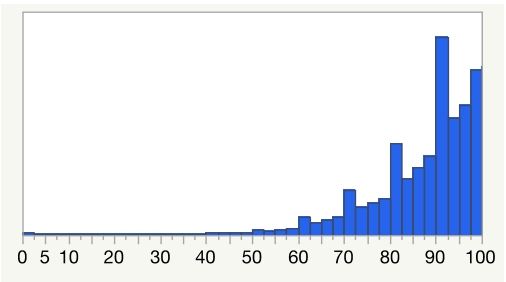
To test the strength of the relationships (if any), between the different literacy and numeracy scores, we carried out a correlation analysis with the aim of establishing whether there was a linear relationship (correlation) between the two. For this purpose, we conducted a Spearman correlation analysis which found a significant and positive relationship ($r = 0.7043$, $n = 485{,}941$, $p < 0.0001$). We found the correlation to be strong, as higher levels of numeracy are associated with higher levels of literacy (see Table 1).

The positive correlation (0.7043) illustrated in Table 2 shows the relationship between numeracy and literacy scores (%): Learners who obtained low scores in numeracy also obtained low scores in literacy. Similarly, learners who obtained high numeracy scores also obtained high literacy scores.



Mean	85.482365
Standard Deviation	11.872391
Standard Error Mean	0.0170312
Upper 95% Mean	85.515746
Lower 95% Mean	85.448984
n	485,941
Skewness	-1.362308
Kurtosis	3.3468172

Fig. 2 Distribution of learners' mean scores for mother tongue-based literacy (in %).
Note: The vertical axis (not labelled) represents the number of learners, starting at 0 at the bottom; the horizontal axis represents the mean scores, ranging from 0 to 100%



Mean	88.544494
Standard Deviation	11.4213
Standard Error Mean	0.0163841
Upper 95% Mean	88.576606
Lower 95% Mean	88.512382
n	485,941
Skewness	-1.809734
Kurtosis	5.6915721

Fig. 3 Distribution of mean scores for numeracy (in %).
Note: The vertical axis (not labelled) represents the number of learners, starting at 0 at the bottom; the horizontal axis represents the mean scores, ranging from 0 to 100%

Table 1 Nonparametric measure using Spearman's rank correlation coefficient (ρ)

Variable	By variable	Spearman ρ	Prob>|ρ|
Numeracy score %	Literacy score %	0.7043	< 0.0001*

Table 2 Pairwise correlations

Variable	By variable	Correlation	Count (*n*)	Lower 95%	Upper 95%	Signif Prob
Numeracy score %	Literacy score %	0.7569	485,941	0.7557	0.7581	< 0.0001*

A calculated probability value (*p*-value) below 0.05 indicates statistical significance of a correlation. We found the Spearman correlation of 0.7043 between the numeracy and literacy scores to be significant at a 99 per cent level of confidence,

since the p-value ($p < 0.0001$) is smaller than 0.01. The scatterplot (Fig. 4) illustrates a positive linear relationship between the numeracy and literacy mean scores.[30]

What differences exist in the literacy and numeracy scores across the eleven official languages?

Our analysis of the data in terms of this question led to the mean scores in literacy and numeracy for the various languages as depicted in Fig. 5.

The differences among mean scores indicate isiZulu and seSotho as the highest-scoring languages, and tshiVenda and xiTsonga as the lowest-scoring languages. The scores in English need to be seen in the context of the campaign, where English was used as the language of instruction for foreign learners who did not speak any of the other South African official languages, or as the language of literacy for deaf learners.[31]

What differences exist in reading speed scores across the eleven official languages?

We examined interactions between reading automaticity acquisition (mentioned earlier) and language for the eleven languages within the reading speed levels learners managed to develop during the six-month course (at least 32 words per minute, by midway through the campaign, after approximately 150 contact hours). One of the ten LAP activities for literacy measured reading speed, which was tested by assessing how many of the sixty sight words a learner was able to read correctly in one minute. The word syllable lengths were comparable across the languages.

Figure 6 shows the distribution of reading speeds in words per minute (wpm) across the entire cohort (measured in each learner's respective language of instruction).

Figure 7 shows the distribution of learners' reading speeds (words per minute) by language.

We then used our analysis of the data on reading speed by language to rank the performance of language groups' reading speed scores (Fig. 8).

This ranking clearly demonstrates that in some languages it is more difficult to acquire reading speed than in others, and when correlated with the total mean scores per language, as shown in Fig. 5, it becomes evident that learners whose mother tongue is tshiVenda, xiTsonga, sePedi or isiXhosa face more challenges with literacy than learners acquiring literacy in the other languages. We found, in fact, that the learners' reading score speeds correlate with their total language assessment scores (this finding is discussed in more detail later in this article).

[30] While the very high number of responses influences the p-value, the non-parametric correlation coefficient of 0.7 is fairly high, indicating a medium to strong relationship strength. The correlation coefficient is not influenced by the sample size. It is recognised that the literacy and numeracy scores are mostly in the eighty per cent range, which is a limitation of the dataset to determine the correlation.

[31] They started with the finger alphabet, but had to read and comprehend in English. It was a decision taken by the Deaf Association because learners did not hear the language, but had more access to readable text.

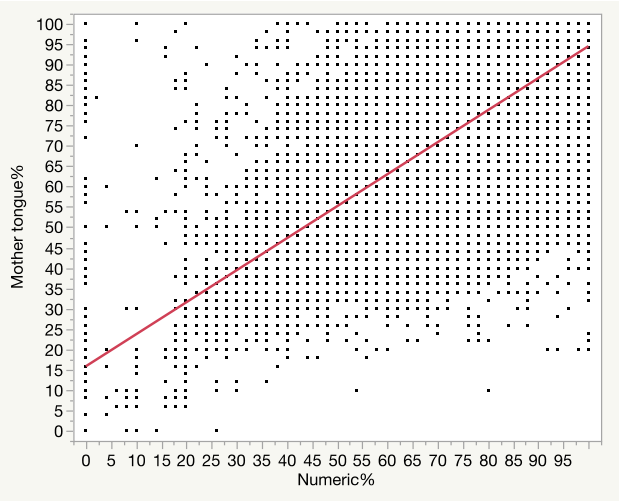


Fig. 4 The positive linear correlation between literacy and numeracy mean scores

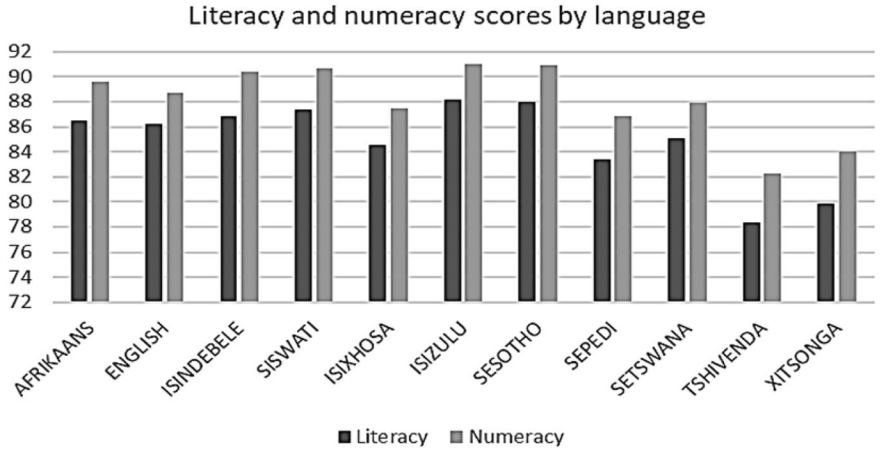


Fig. 5 Mean scores in literacy and numeracy by language

How do learners' scores correlate with different features of learner profiles such as residential type, regularity of class attendance and previous school experience?[32]

Literacy and numeracy scores by residential type: The campaign required learners to indicate what kind of area they lived in by selecting one of the most

[32] As literacy and numeracy scores by gender did not reveal significant differences (see McKay 2015, p. 394, Figs. 6 and 7), we did not include the aspect of gender in this analysis.

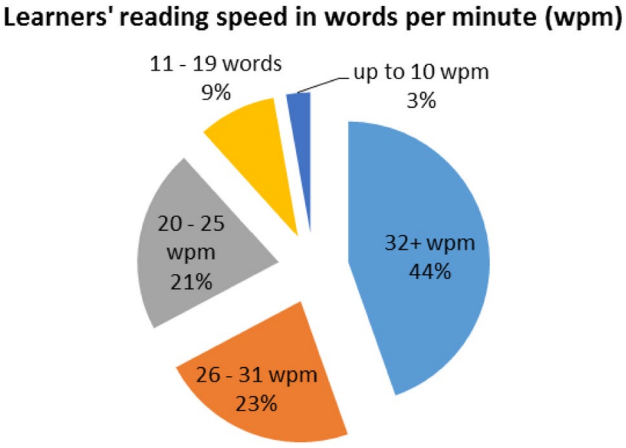


Fig. 6 Breakdown of the mean scores of learners' reading speeds ($n = 485{,}941$)

common residential types in South Africa: urban township, urban suburb, rural village, farm, informal settlement, or, given the high number of learners who were incarcerated, prison.

Urban townships refer to the areas that were established during apartheid to ensure segregation by race. Separate townships were established for Africans, Indians and people of "mixed race".

The townships are underdeveloped when compared with *urban suburbs* where whites lived. The *Kha Ri Gude* learners in the urban suburbs were predominantly domestic servants who lived at their employers' premises.

Rural villages are those areas that are without services such as piped water and sanitation. They have poor road, transport, health and educational infrastructures. In these areas, the traditional leadership or chiefs play a significant role.

Farm dwellers refer to those learners who live and work on a farmer's land. Usually they have poor living conditions and earn minimal wages.

Informal settlements are areas where housing units have been constructed on land that the residents occupy illegally. The settlements are unplanned and unauthorised where the informal housing (usually shacks) does not comply with building regulations. These communities have inadequate access to safe water and sanitation, poor quality of housing, and insecure residential status.

1,965 incarcerated learners (0.4%) marked *prison* as their residential type, while 11,195 learners (2,4%) did not check any box for residential type.

Table 3 shows the high numbers of learners in rural areas, which are impacted on by severe poverty and the lack of social services, support and schooling. These areas are characterised by poor literate environments.

Figure 9 shows the mean literacy and numeracy scores by residential area. As one might expect, the lowest scores are found among learners living in rural areas. On the other hand, learners in prisons ($n = 1{,}965$) obtained the highest mean scores possibly due to the fact that it is easier within the constraints of prisons to ensure regular attendance and to set aside time to practise skills.

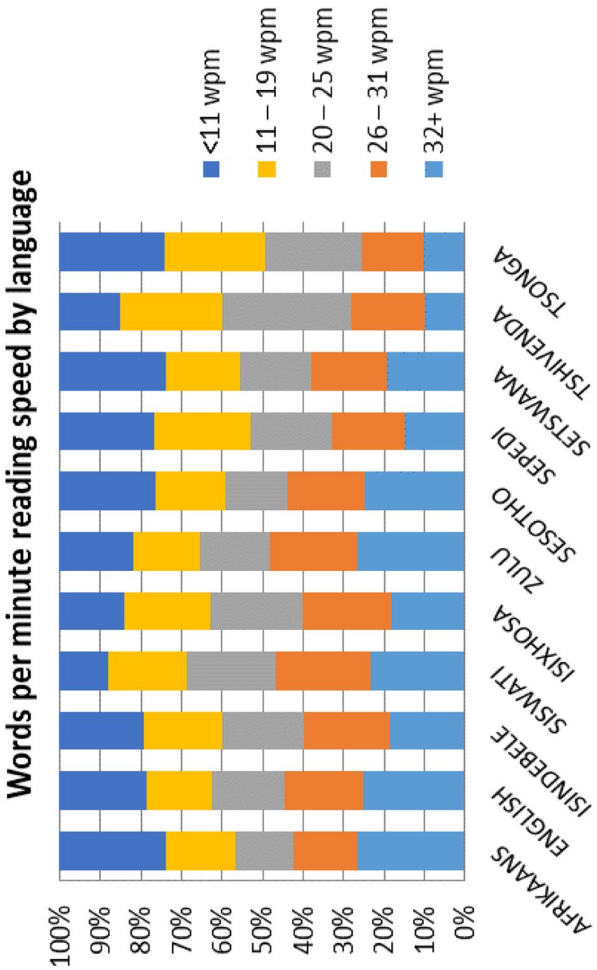


Fig. 7 Mean scores of learners' reading of words per minute by language

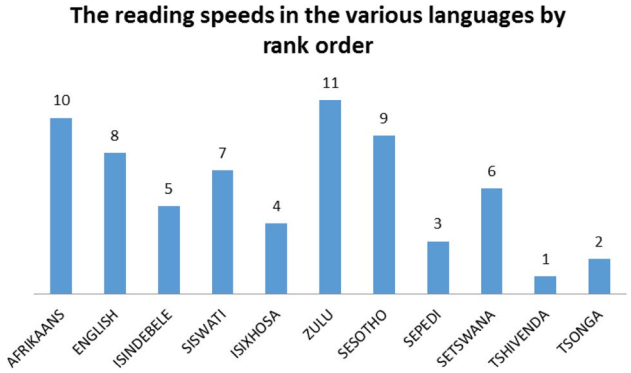


Fig. 8 Reading speeds in rank order by language (11 = highest speed; 1 = lowest speed)

Table 3 Distribution of campaign learners by residential type

Residential type	*n*	%
Urban township	94,946	19.5
Urban suburb	3,275	0.7
Rural village	328,655	67.6
Farm	11,710	2.4
Informal settlement	34,195	7.0
Prison	1,965	0.4
No residential type mentioned	11,195	2.4
Total	485,941	100

Literacy and numeracy scores by attendance: "Regular attendance" (Fig. 10) was defined as learners having attended on average of 2 out of 3 classes per week, while being absent on average for 2 lessons per week was defined as "often absent". Teachers were required to indicate whether each learner attended classes regularly, which they confirmed for 75.7% (n = 367,837), or whether they were often absent, which they confirmed for 20.6% (n = 100,038).[33] These data were correlated with their literacy and numeracy scores.

The data clearly show that learners who attended regularly obtained higher mean scores than those who did not. However, learners who were often absent did not fare as badly in numeracy as they did in literacy. This may be attributed to the fact that learners are more exposed to numeracy in their environments, engaged in financial transactions, building their homes or counting cattle, shopping by mass or volume

[33] There were 18,066 (3.7%) non-responses to the question on the regularity of learners' attendance.

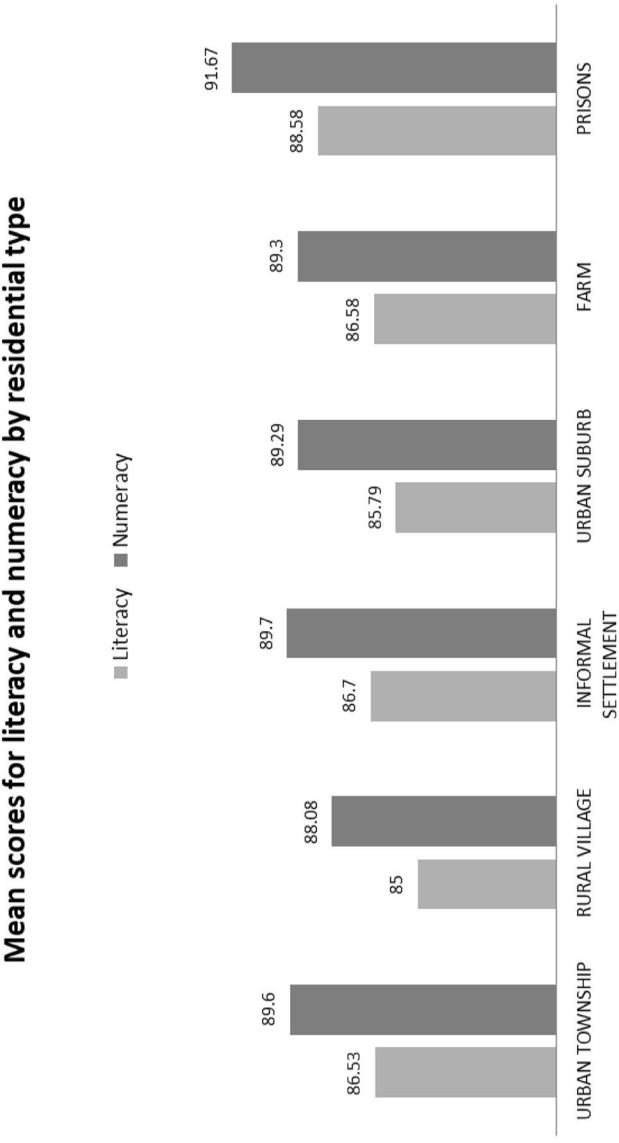


Fig. 9 Mean literacy and numeracy scores by residential type

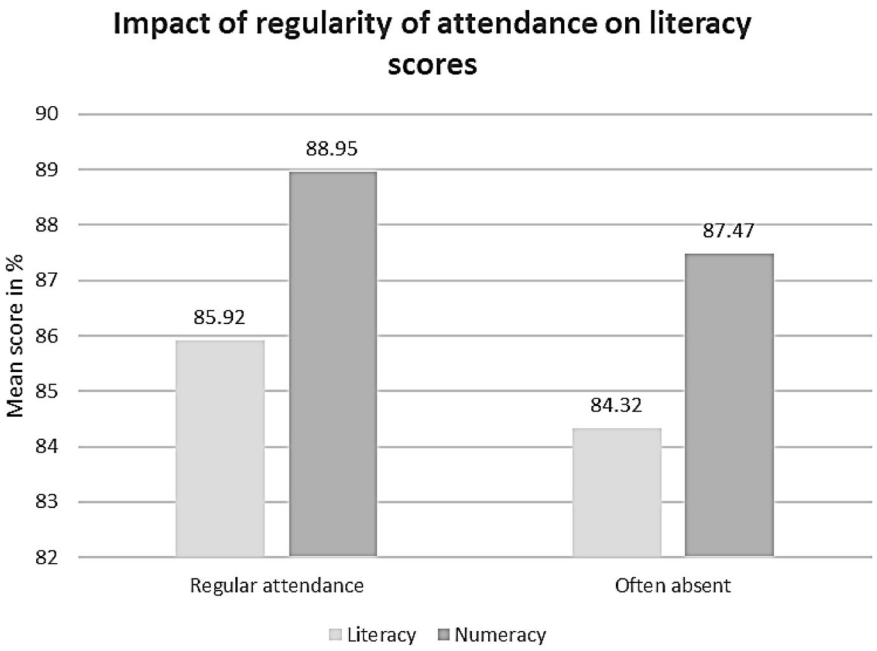


Fig. 10 Impact of learner attendance on mean literacy scores in percentage

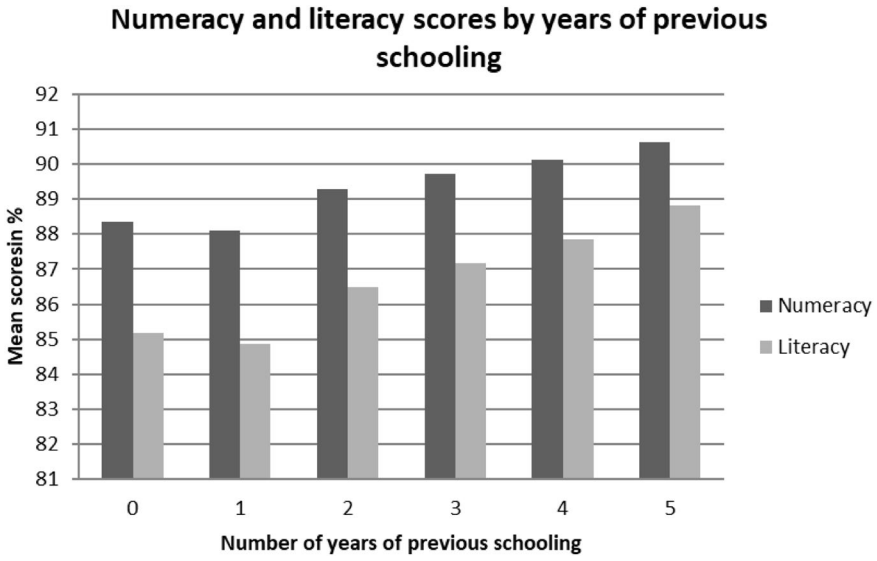


Fig. 11 Literacy and numeracy scores by previous school years

etc., suggesting that learners have a basic number sense, and some ability for pattern identification and spatial awareness that provide a foundation for numeracy learning.

Literacy and numeracy scores by previous school years: We also correlated literacy and numeracy scores with the number of years that learners had been to primary school (Fig. 11).

The differences in literacy and numeracy achievement between 0 years of schooling and 5 years of previous schooling is not that stark. This is because of the generally poor quality of the formal education provided to black South Africans during apartheid, and also because in many cases schooling was so long ago that the adults had forgotten how to read and calculate as a result of their not using these skills. However, Fig. 11 once again shows the higher numeracy abilities of learners relative to their literacy abilities for reasons discussed above.

Ranking of languages according to their levels of difficulty for literacy learning, and data interpretation by ten language experts

As an additional dimension in this analysis, and with the intention of enriching the interpretation of our findings listed above with specialists' perspectives, we also asked ten language experts who had been involved in designing the materials for the *Kha Ri Gude* literacy campaign to analyse the 2011 data and address two additional research questions:

(6) How do language experts rank the various languages according to their level of difficulty with regard to literacy learning?
(7) How do language experts explain the variations in literacy and numeracy scores across the eleven official languages?

Methodology of expert consultation and criteria

The mean literacy scores of the 2011 *Kha Ri Gude* learners by language paralleled the language score variations of the 2006 Progress in International Reading Literacy Study (PIRLS; see Mullis et al. 2011) and the Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ 2017) results for learners in South African schools. In the process of interpreting the data of the 2011 cohort, we asked ten key contributors to the development of the materials of the *Kha Ri Gude* Literacy Campaign who had the expertise in the various languages[34] to review the scores and to lend us their insights into the interpretation of the data. These ten

[34] All of them are academics with at least a master's degree, are language educators and practitioners. In addition, all of them are members of their respective national language boards. With this background of expertise and experience, they were engaged as the authors of the *Kha Ri Gude* materials and the test items used in the *Kha Ri Gude* assessment instruments. In addition, the same experts were used in the development of the Department of Education school workbooks that were developed in the eleven official languages.

experts represented all but one (English) official languages. By tapping their expertise and experience, we asked them to classify the languages in terms of their levels of difficulty and to interpret the language-related score rankings of learners. By using a short survey, we asked them to respond to the following three questions:

1. Could you give any reason for the differences in language scores in the above charts?
2. We would like to rank-order the languages according to your knowledge of the language you work with.

Here the resource persons were required to rate their language according to the following five criteria and to provide reasons for their score:

(a) Phonology (vowels, consonants, phonological processes, etc.)
(b) Orthography (deviations, exceptions of rules, punctuation, number of letters in the Latin alphabet used, etc.)
(c) Morphology (length of words and sentences, prefixes, etc.)
(d) Differences of standard (written) language from spoken language
(e) Existence of variations (dialects) of spoken language (which are different from standard language).

The third question was:

3. Can you list any other difficulties in the written language? Think of frequently made mistakes or language-specific challenges identified and/or reported by educators.

Ranking of South African languages according to their difficulty levels with regard to literacy learning[35]

For each of the above-mentioned criteria (a–e), we had a scale of 1 to 5 to establish whether the language experts thought it was extremely complex and difficult (5) or rather simple and easy (1) to learn to read and to write in the particular language they were rating. The totals of the five criteria for each language formed the basis for the ranking of the most simple (1) to the most complex language (10).

The scores shown in Table 4 suggest that isiNdebele, seTswana (sharing top rank) and Afrikaans (ranked third) are languages in which it should be easier to learn to read and to write, while isiXhosa, isiZulu and tshiVenda (ranked eighth, ninth and tenth respectively) are rather complex languages in which to become literate is deemed by the experts to be more challenging. Comparing this with the mean literacy (Fig. 5) and reading speed scores by language (Figs. 6, 7 and 8), out of the languages that were assessed as easier, only Afrikaans is among the better-performing

[35] As English was not anyone's mother tongue in the campaign, we did not consider it in this analysis.

languages. isiZulu stands as an interesting outlier: on the one hand it is ranked among the most difficult languages, on the other hand it is leading the mean literacy and reading speed scores as the best-performing language group. The case of tshiVenda seems to be more regular by ranking as the most difficult language and being among the worst-performing language groups with regard to literacy and reading speed. Both xiTsonga and sePedi are also part of the latter category, however they were scored as rather simple languages by the consulted experts.

The reasons that the consulted language experts provided for their scores were mainly related to the linguistic characteristics of the given language, together with a number of examples. This detailed information offers a notion of the difficulties involved when learning to read and to write in those languages, both for teachers and learners (e.g. differences between spoken language and the standard written language, recently revised orthography by the National Language Body,[36] disjunctive or conjunctive forms of writing, teachers being unaware of the importance of phonetics for learning to read, agglutinated languages with lengthy words and sentences, among other reasons). However, the language experts' interpretation of the *Kha Ri Gude* data shows that the challenges of teaching and learning literacy and numeracy in South African languages actually go beyond the difficulty levels established on the basis of linguistic criteria.

Discussion of the language experts' interpretation of the data

Responding to our question on reasons for the differences in literacy scores across languages, the language experts referred to the colonial and apartheid past, which denigrated indigenous languages and thwarted their development. None of the experts were surprised that scores for English and Afrikaans were "far higher" than those for the African languages.[37]

> "These two languages have long been developed as compared to the development of the African languages. Afrikaans is the pride […] of Afrikaners who enjoyed a lot of support from the then government and from all sectors of business."

Afrikaners "fight for their language, do everything possible to develop their language". Because "the apartheid government was comprised of Afrikaans-speaking people, the government supported the growth of Afrikaans from primary school to tertiary level".

However, even in the post-apartheid period, with a Constitution in place (RSA 1996) which stipulates equal treatment of all eleven official languages, historically developed inequalities among the eleven official languages seem to persist. Indications of strong self-identity with regard to one's own language and culture are

[36] For more details on the standardisation of South African languages, see Lafon and Webb (2008).

[37] All quotations in this section are taken either from the ten completed questionnaires returned to us, or from e-mail exchanges we had with the language experts in the context of the survey we carried out for this article.

Table 4 Ranking of languages by scores that experts provided according to given criteria

Points according to criteria (1–5) Language	(a) Phonology	(b) Orthography	(c) Morphology	(d) Differences of standard language	(e) Existence of variations	Total	Ranking (1–10)
Afrikaans	2	2	2	2	2	**10**	**3**
isiNdebele	1	1	1	2	2	**7**	**1**
siSwati	4	3	2	3	2	**14**	**6**
isiXhosa	3	3	4	2	3.5	**15.5**	**8**
isiZulu	2	4	2	4	5	**17**	**9**
seSotho	3	3	3	3	3	**15**	**7**
sePedi	3	3	3	2	2	**13**	**4**
seTswana	1	1	1	2	2	**7**	**1**
tshiVenda	4	5	3	4	3	**19**	**10**
xiTsonga	3	3	3	2	2	**13**	**4**

obviously closely linked to the resources that are invested to develop languages, cultures and supporting environments.

The language experts indicated various contextual reasons for the poor performance of some of the official languages. These include "the attitude shown to some citizens as related to languages". As one of the language experts pointed out, "the most marginalised language is xiTsonga and followed to some extent by tshiVenda. Marginalised languages are not well-resourced". For example, they do not have daily newspapers or magazines and there is a dearth of literary materials. xiTsonga, which is essentially a cross-border language spoken chiefly in southern Mozambique and South Eastern Zimbabwe, is a minority language in North Eastern South Africa and has not attained parity of esteem in South Africa.

One of the consulted experts called attention to the phenomenon of a "language hierarchy within the indigenous languages themselves". For example, xiTsonga and tshiVenda, both belonging to the worst-performing language groups with regard to literacy and numeracy scores, are marginalised as "inferior" languages, while isiZulu and seSotho, belonging to the best-performing language groups, are perceived and treated differently in society. "People are so intimidated to talk about the hidden inequalities!" Another commentator, however, observed positive changes with regard to the development of formerly disregarded languages. "tshiVenda is increasingly becoming prominent as a language of the national sciences, with the Vhavenda occupying positions in the contemporary Scientific Community in South Africa."[38]

The consulted language experts' interpretations of low and high literacy scores of different language groups point to the difference that multilingual contexts and

[38] This is particularly noteworthy considering that in the 1970s, the Venda (also referred to as the Vhavenda) were among the poorest and least educated people in South Africa, whereas today they have caught up, as referred to in the quotation.

languages' minority status can make compared to monolingual contexts and languages' dominant status. It also makes a difference whether learners live in poorer or economically more developed provinces, because this may influence the availability of resources, infrastructure and the quality of public services. For example, sePedi, xiTsonga and tshiVenda are languages predominantly spoken in the multilingual province of Limpopo, which is a relatively poor province without adequate support institutions such as libraries. isiZulu, on the other hand, is a dominant language in the province of Kwa Zulu Natal, where learners usually also come from monolingual backgrounds. isiZulu speakers are more likely to insist on speaking their language and expect everyone and everything to comply with their language. In the case of languages with a minority status, "often people shy away from talking the languages except within the security of compatriots".

The highest literacy scores can be found in the Free State, followed by Kwa Zulu Natal, the Mpumalanga and North West provinces. These four provinces are mostly monolingual. As a result, the language learners speak at home is the language taught in the classroom. Language attitudes reflect self-confidence and pride. For example, an isiZulu-speaking person will never undermine his/her language. The same applies to seSotho and seTswana. siSwati, also among the best-performing languages, seems to benefit from enabling cross-border influences from Lesotho, Botswana and Swaziland respectively. Moreover, the culture of reading in Kwa Zulu Natal was also strongly infused by colonial (British) education, while Limpopo was not subject to the same strong educational influences. But the residue of apartheid education or "Bantu education"[39] still persists and is reflected in the poor performance of some of the dominant languages in that province.

xiTsonga, tshiVenda and sePedi are the three African languages spoken in Limpopo with the lowest performance in literacy scores of all provinces. The reason suggested by the language experts we consulted is that the three languages might be influencing one another to the extent that the people in the province speak variations linked to the three dominant languages there. Some learners in this province do not speak standard sePedi, xiTsonga or tshiVenda but rather, for example, Xihlave, Xichangana, Xinkuna, or Xiluleke instead of standard xiTsonga; or Sepulana, Selobedu, or Setlokwa rather than standard sePedi. While the relationship between the languages makes communication easy among the people speaking similar languages, learning to read and to write in one of the official (standard) languages poses challenges to those learners. One of the language experts concluded that "the performance in the provinces where only one dominant language is spoken is high because there is no other language influence". Another language expert attributed the low performance of xiTsonga and tshiVenda to the fact "that the number of xiTsonga- and tshiVenda-speaking people is fewer than that of sePedi-speaking people in Limpopo", who performed slightly better than the former.

[39] The *Bantu Education Act* (Union of South Africa 1953) was a South African apartheid law "to provide for the transfer of the administration and control of native education from the several provincial administrations to the Government of the Union" (ibid.).

Another factor that has an influence on the performance of languages is constituted by the teachers and the teaching methods and classroom practices. Several of our consulted language experts observed that many teachers themselves are finding reading and writing in the African languages challenging and have little experience with teaching literacy and numeracy in these languages. Moreover, the lack of access to libraries and unavailability of books in African languages contributes to poor literate environments. In addition, the media coverage in different languages also creates problems, since, for example, "the television, especially the news slots, do not follow rules of standard text". Furthermore, as one language expert pointed out, it is common for older learners to have problems with their eyesight, and these are treated differently because of the unequal provision of health care across the provinces. Another expert suggested the need to analyse the learners' socio-economic backgrounds to interpret the score data in relation to the poverty data, especially in the poorer provinces.[40]

Conclusions

By promoting mother tongue-based adult literacy, the *Kha Ri Gude* Literacy Campaign was venturing, to a certain extent, into uncharted waters. There were no similar experiences of a large-scale literacy campaign run in eleven languages. Thus, the campaign was able to accumulate a wealth of stimulating experiences and valuable lessons and to create opportunities for research into the advancement and preservation of all South Africa's main languages. The respect and equality accorded to all languages could also play a critical role in fostering national cohesion. While linguistic diversity is a valuable resource, it also creates challenges within the education system, notably in the areas of teacher training, teaching methodologies and materials and strategies of managing multilingual class groups.

The *Kha Ri Gude* literacy campaign gave equal attention to all eleven official South African languages, to ensure not only that the language rights of all learners were met, but also that the pedagogical and cognitive advantages of mother tongue-based learning would be benefited from. The campaign designed its core materials and teacher support notes to mitigate the performance of un-/under-trained teachers or those who spoke their learners' language, but were not familiar with its written form (McKay 2015). However, campaign volunteers frequently had to deal with multilingual learner groups and were inadequately trained for such complex classroom realities. Indeed, one of the lessons that can be drawn from the *Kha Ri Gude* experience is that good quality learning material alone cannot make up for inexperienced and under-trained educators and poor literate environments, in particular in the languages shown to be performing poorly. In order to raise learning achievement, more intensive training and ongoing pedagogical support is as crucial

[40] The construction (in which education plays a critical role) of the value of a language is a reflection and reproduction of the socio-economic status of the people who speak it (see Alexander 2013).

as sustained measures to enrich a multilingual literate environment, particularly in rural and deprived areas.

While the *Kha Ri Gude* learners demonstrated high levels of achievement and the differences between the highest and lowest mean scores for literacy and numeracy were not so great (10 and 9 percentage points respectively), these reflect the same patterns of achievement by language as the South African Annual National Assessments[41] and the Progress in International Reading Literacy Study (PIRLS; see Mullis et al. 2011) implemented in grade 4 formal education classes in 2006, with isiXhosa, tshiVenda, xiTsonga and isiNdebele learners performing poorly. The same languages perform poorly in the National Senior Certificate examinations.[42] Recent research[43] suggests that it is harder to learn to read in agglutinative languages such as isiZulu and isiXhosa than in languages with shorter words. However, the mean literacy and numeracy scores of the *Kha Ri Gude* campaign show much better results for isiZulu than for isiXhosa learners, leading to the conclusion that language difficulty cannot be the only factor influencing the learning achievement and that further research is required on this.

In our study we assumed that the reason for differences in literacy scores per language groups might be either related to language difficulty or circumstantial due to undertrained educators, irregular attendance and poor literate environments. Our consultation of the language experts involved in the *Kha Ri Gude* campaign partly confirmed these assumptions, but the experts' interpretations also turned out to be based on broader context-related reasons. They considered historical, geographical, social, economic, political, ideological and cultural factors which may have had an influence on high- or low-performing language groups. They also pointed to persisting language hierarchies and attitudes that may have influenced the performance of different language groups. Such inequalities, which continue to have an adverse influence on the whole education system, were also recently identified by the Department of Higher Education and Training:

> Except in a few limited instances, indigenous African language *[sic]* have never been used beyond the first six years of education, and the value of the knowledge embedded in these languages has not influenced knowledge production in the learning process (DoHET 2015, p. 9).

The value placed on English and Afrikaans "by organised and vigorous state intervention" during the apartheid period "was accompanied by orchestrated

[41] The South African Annual National Assessment (ANA) is a series of standardised literacy, science and mathematics tests introduced in 2011 by the Department of Basic Education with the purpose of improving the quality of formal education in South Africa.

[42] The National Senior Certificate (NSC) is the main school-leaving certificate in South Africa which students sit at the end of grade 12 (the last year of secondary school).

[43] Mark Andrew De Vos et al (2014) and Sandra Land (2015) refer to the orthographical features of agglutinating languages which use a conjoined writing system with long complex words. They argue that this mitigates against learners developing automaticity which is essential for proficient reading. They also refer to the complexities of agglutinative languages which impact on reading fluency.

undermining of the value of indigenous African languages in education and their mother tongue speakers" (ibid., p. 10).

Learners in provinces which are mainly monolingual (e.g. KwaZulu Natal) with dominant languages (e.g. isiZulu) or which share a cross-border language (seSotho in the case of Free State and Lesotho) seem to have an advantage compared with learners living in multilingual provinces where their mother tongue has a minority status or is even a variation of such official (standard) languages. In its efforts to give equal attention to all eleven languages, the *Kha Ri Gude* campaign failed to take existing hierarchies and inequalities among language groups into account. Only a differentiated treatment that seeks to redress those existing inequalities would have contributed to reducing the disparities towards the desired and constitutionally established equality among all languages. This is another important lesson to be drawn from the campaign's experience: existing inequalities need to be compensated through differentiated strategies of "positive discrimination" in order to level the playing fields in the endeavour to achieve parity of learning.

Since each language has its own characteristics, shaped by unique historical developments and geographic, economic, political, ideological and cultural contexts, one of the key conclusions is that there cannot be a one-size-fits-all approach to literacy and numeracy in different languages. However, some suggestions can be made for how low scores can be raised with regard to different aspects of the *Kha Ri Gude* campaign, and these suggestions may be extended to formal schooling and higher education which are also grappling with expanding the range of languages of instruction. These can be determined and developed on the basis of lessons drawn from well-performing languages.

Furthermore, it can be concluded that in order to perform well in literacy and numeracy, languages require the availability of an alphabet and rules for transcription of the language, grammars, basic glossaries, specialised glossaries, dictionaries, textbooks, and cultural, scientific, technical publications (all of which is the case for the South African official languages). Better performance also involves being able to draw on the many possibilities for usage offered by information and communications technologies (ICTs) and the mass media. It does not only require the availability of reading materials in different languages and at easy-to-access locations (e.g. community libraries), but also motivation to produce written texts for sharing with others on a small scale or for publication.

Likewise, learners from poorer provinces with lower literacy levels, from rural areas, and learners with no or hardly any years of schooling, all of whom tended to obtain lower scores, might have benefited from extra assistance, additional time and resources and stimulating literate environments in order to redress disadvantage. These means would include: (1) being given additional instructional time and more opportunities to practise; (2) being taught by educators with special training and more pedagogical support; and (3) being provided with supplementary attractive – including locally produced – reading materials in the appropriate languages by schools, community libraries and other local institutions.

In conclusion, the analysis and interpretation we have presented in this article point to a future strategy of carefully analysing existing inequalities,

disadvantages and prejudices with regard to different language groups before designing a learning programme. Our research further implies more differentiated (and even personalised) approaches to ensure quality provision of adult literacy and education services which is tailored to suit the learners and their needs. Given the complexities of adult literacy and basic education in multilingual and vulnerable contexts, aiming for this kind of provision also involves the setting of realistic goals and allocation of sufficient time and resources that are commensurate to the task.

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