

# No-fee school consistently outperforms Progress in International Reading and Literacy benchmarks: Presenting early grade reading data from a case in Makhandla, Eastern Cape

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**Background:** The Progress in International Reading and Literacy 2021 results draw stark attention to an ongoing crisis in primary education in South Africa. Research attempting to understand and address continued underperformance has focused on literacy learning and teaching in schools where the language of learning and teaching (LOLT) is the same as the learners' home language. What has yet to be addressed is that a significant dilemma still exists for the many English Second Language (ESL) learners who attend schools where the LOLT is English.

**Aim:** To establish to what extent involvement in the Whistle Stop School (WSS) early grade reading programme impacts on reading rate and comprehension performance for ESL learners learning to read in English.

**Setting:** This research examines the WSS programme in partnership with a local quintile three school.

**Methods:** Longitudinal, quantitative secondary data was used from oral reading fluency and comprehension assessments conducted annually over the first six years of the programme.

**Results:** Results showed that involvement in the WSS programme had a significant impact on learner performance, with those learners involved in the programme notably outperforming those not in the programme and existing national benchmarks.

**Conclusion:** Small-scale though the WSS is, the results demonstrate that with the right approach, the national goal to see every 10-year-old learner reading for meaning may be achievable.

**Contribution:** This research aims to contribute to national conversations around early grade reading in South Africa by addressing the paucity of early grade reading learning research, specifically for ESL learners where LOLT is English.

**Keywords:** early grade reading; comprehension; oral reading fluency; literacy intervention; English second language; primary education; foundation phase; learning to read.

## Introduction

The large-scale Progress in International Reading Literacy Study (PIRLS) 2021 (DBE 2023) revealed that 81% of South African learners cannot read for meaning in any language by the end of Grade 4; this has increased from 78% in 2016 PIRLS. This alarmingly indicates that literacy levels at our primary schools are getting worse rather than better, drawing stark attention to an ongoing crisis in primary education in South Africa. The 2023 Background Report for the 2030 Reading Panel highlights that:

[N]ew datasets of over 40000 South African learners from no-fee schools show ... that less than 50% of Grade 1 children learn the letters of the alphabet by the end of Grade 1. (Spaull 2023:2)

Compounding the life-long impact of the failure of the South African Department of Basic Education (SA DBE) to address the crisis in the primary years, the South African Curriculum and Assessment Policy Statement (CAPS) guiding teaching and learning across the country does not include any explicit teaching of how to read after Grade 3. Learners who have progressed to Grade 4 and have not achieved enabling levels of literacy are unlikely to enjoy epistemological

access to further scholastic opportunities. This is borne out in South Africa's high school drop-out rates from Grade 9 and beyond (Sing & Maringe 2020; Van der Berg & Gustafsson 2019). According to the SA DBE, 'access remains unequal in terms of quality, inefficient in terms of learning outcomes, and still shaped strongly by the apartheid legacy' (2010:22), with very little evident progress since 2010. This is still true today.

The case presented in this article examines a non-governmental organisation (NGO)-run early grade reading programme for isiXhosa or Afrikaans home language (HL) learners who are learning to read in English. The case is bound in the context of the Whistle Stop School (WSS). The WSS takes the form of a pull-out programme implemented in 2017 by GADRA Education in partnership with a local fee-exempt public school serving learners from economically disadvantaged backgrounds (quintile 3 school). The programme was motivated, designed and initiated by GADRA Education to trial innovative, contextualised approaches to teaching early grade reading, which might be useful in guiding attempts to address the well-documented literacy crisis (GADRA Education 2018).

By investigating the WSS as a case study, the research aims to contribute to national conversations around reading in South Africa in an attempt to address the literacy crisis in South Africa. The research has both scholarly benefits and pedagogical implications, which can be used by teachers, curriculum advisors and policymakers.

The objectives of this research are to: (1) address the paucity of research in education in the Eastern Cape, specifically in the area of early grade reading learning and teaching for English Second Language (ESL) learners where LOLT is English, and (2) to contribute to developing a rich understanding of the particular challenges and possible enabling approaches to early grade reading learning and teaching for ESL learners.

## Language of instruction in South African schooling

Broadly documented consensus in literacy research asserts that children learn the mechanics of reading most effectively in their HL, which is in line with the claims made by Cummins (1991, 1993, 2000) in his Linguistic Interdependence Hypothesis. Once children have mastered how to read in their HL, these skills can be effectively and efficiently transferred to the more abstract skill of reading for meaning in a language other than HL (Cummins 2000; Pretorius, Mohohlwane & Spaull 2020). Post-democracy, driven by the necessity to redress historical inequities, changes were made to national languages and education policies in South Africa. These changes allowed public schools to change their official language of learning and teaching (LOLT) from English or Afrikaans to one of the officially recognised Southern-Bantu languages (RSA 1996). Instruction in HL became a reality for

the first time, though limited to the Foundation Phase. From Grade 4, LOLT must switch to English or Afrikaans. Many school governing bodies took advantage of these new policies and changed the language of instruction to the official language most prominently spoken in the geographical area in which the school is situated (SA DBE 2010). Learners attending such schools benefit from HL instruction for the first 4 years of formal schooling, affording them the opportunity to learn the basic building blocks of reading in their HL. This is undeniably a positive move forward in establishing a more equitable education system in South Africa.

Primary education scholarship attempting to understand and address continued underperformance in the no-fee schooling sector since 1994 has been dominated by research focussed on literacy teaching and learning in schools where LOLT is the same as the HL of the learners (Meiklejohn et al. 2021). What has been largely ignored is that a significant dilemma still exists for the many South African children who attend schools where the LOLT is English from the reception year. In most cases, the majority of learners attending such schools, particularly in the no-fee public sector, are not from an English HL background. According to the most recent information published by the SA DBE, 'close to 25% of African home language Foundation Phase learners' LOLT was not their home language in 2007' (SA DBE 2010:18). Learners attending these schools are not afforded the valuable opportunity to learn the building blocks of reading in their HL. The research reported on in this article is situated in this context; the LOLT at the WSS partner school is English, but the school serves ESL learners from isiXhosa and Afrikaans HL backgrounds.

## Importance of early grade reading

There is much research to support the statement that 'literacy, built upon a firm foundation of basic reading, is used as one of the primary measures of school efficacy' (Pretorius et al. 2016:4). Weak reading has been linked to lack of scholastic achievement, low self-esteem, discipline issues as well as high levels of school dropout (Connor & Frederick 2014). Learning to read can thus be described as a fundamental skill which enables not only active participation in the curriculum but also forms the basis for lifelong success and opportunity (Hulme & Snowling 2011).

Evidence suggests that if learners have not reached expected levels of proficiency in 'learning to read' strategies in the early years of schooling, there will be little to no improvement in reading ability without intervention or remediation (Bigozzi et al. 2017; Friedman & Kern 2009; Lonigan, Burgess & Anthony 2000; Pretorius et al. 2016). It is important to note here again that in the South African context, CAPS assumes learners have successfully learnt to read by the end of Grade 3 and thus, does not include any explicit teaching of how to read from Grade 4 onwards, where the focus switches to developing comprehension and semantic skills.

Much of the research on early grade reading has focussed on Oral Reading Fluency (ORF), which is the ability to read text quickly, accurately, and with meaningful expression (Rasinski & Hoffman 2003; Valencia et al. 2010). This is probably because ORF has been recognised as an indicator of reading comprehension (Fuchs et al. 2001), with reading comprehension being the ultimate goal of reading and where the stumbling block seems to lie with South African learners. Studies concerning reading in a second language (L2) are not as extensive as that for learners reading in their first language (L1) (Schaefer & Kotze 2019; Spaul 2015; Pretorius & Spaul 2016). In this article, we measured learner performance in their L2 (English) using measures of ORF and reading comprehension.

## The Whistle Stop School

The WSS takes the form of a pull-out literacy programme run in partnership with a local no-fee primary school where English is the LOLT. The partner school is quintile 3, serving children of low socio-economic status. Approximately 65% of the children attending the school are isiXhosa HL, and 35% are Afrikaans HL. The case presented here is thus that of isiXhosa and Afrikaans HL learners learning to read in English bound in the context of the WSS.

The WSS employs qualified Foundation Phase and Intermediate Phase teachers who teach Grades R to 4 throughout the course of the programme. The programme runs from classrooms attached to, but not part of, the partner school and pulls learners out of their normal classroom in groups of 12 for a 45-min lesson each school day. Guided by literature advocating small group sizes and the most effective dosage for maximum impact (Meiklejohn et al. 2021; Sharples et al. 2011), each WSS teacher teaches the same 48 children in four groups 5 days a week. On average, there are 72 learners in each grade at the partner school, necessitating selection. Selection is based on ORF benchmark tests completed in November of the year prior to WSS engagement. The WSS selection criteria dictates selection for Grade 4 of the 48 learners with the highest ORF and/or comprehension scores in November of Grade 3. In Grade 3, the middle set of learners is selected. Grade 2 selection is influenced by both ORF data and discussion with the Grade 1 classroom teacher at the partner school.

According to Spaul and Taylor's 'rubric for assessing early grade reading interventions in South Africa' (2022), the WSS would be classed as a well-resourced, well-evaluated (medium rating) micro intervention that has evidence of impact. The evidence of impact is explored in this article.

### The Whistle Stop School approach

Taking a social constructivist outlook on learning, the WSS views teachers as mediators of learning rather than imparters of objective knowledge. The role of teachers in the programme is thus to provide the resources and guidance learners need as they make discoveries and assimilate or modify old

knowledge in the process of constructing new knowledge (Vygotsky 1978). The WSS views teaching and learning as an inclusive, interactive, and situated process through which the whole child is developed and each individual learner develops capabilities that will facilitate full and meaningful participation in society. Learners are, as far as possible, actively involved in the learning process and are given the support, opportunities to interact and freedom they need to construct new knowledge (Long & Berriman 2018). Whistle Stop School content is purposefully designed to be deeply embedded and contextualised in the lived experiences of the learners. In this way, the approach strives to place 'learning in the context of our lived experience of participation in the world' (Wenger 2009:209).

The WSS approach is based on the view that effective literacy learning takes place when children are expertly guided through each of the developmental stages of learning to read. There is consensus in international literacy research around the notion that children move through a similar pattern of development when learning to read and write and that at each stage, there are specific, identifiable reading behaviours. The following list represents the five developmental stages of reading development (Chall 1983; Fountas & Pinnell 1996):

1. Awareness and Exploration of Reading Stage (typically pre-school).
2. Emergent Reading Stage (typically preschool to Grade R).
3. Early Reading Stage (typically Grade 1 to early Grade 2).
4. Transitional Reading Stage (typically late Grade 2 to Grade 3).
5. Fluent Reading Stage (typically Grade 3 and higher).

It is generally agreed that learning to read is a developmental process during which children reach literacy milestones on a continuum (Chall 1983). Thus, while a group of children may be the same chronological age, they are likely to be at various stages of reading development, particularly in the primary years of schooling. This perspective is based on the widely accepted premise that developmental growth is irregular and is significantly influenced by culture, socio-economic background, and experience (Shonkoff & Phillips 2000).

Whistle Stop School teachers conduct independent one-on-one baseline assessments before beginning instruction, and instruction is then deliberately tailored to guide learners through each stage of reading development from what is known to what is unknown (Vygotsky 1978). The WSS curricula are designed around the notion that children must first go through the process of learning to read and reach the fluent reading stage before they are able to fully engage with and extract meaning from text. Once children have reached the fluent reading stage, the learning and teaching programme is designed around the belief that children need to be explicitly taught how to bridge the gap between learning to read and reading to learn through the explicit teaching of comprehension skills and strategies (Elston, Tiba & Condy 2022; Mehrpour et al. 2022).

## The Whistle Stop School approach to teaching children how to read (learning to read)

The purpose and focus of early grade reading is for children to master how to read. This focus and purpose is reflected in the SA DBE National Curriculum Statement (NCS), which is organised in the CAPS for English HL (SA DBE 2011). Curriculum and Assessment Policy Statement outlines the foundational skills and concepts that learners are expected to master at each grade level with the understanding that 'by the end of Grade 3, readers are expected to read accurately – on their own – at a steady rate, with comprehension and with enjoyment' (Pretorius et al. 2020:2).

Whistle Stop School content (or 'curriculum') and pedagogical approach are designed to consider the interconnected nature of early reading skills. It is widely acknowledged in literature that there are a number of factors which contribute to a child's reading development and a variety of different approaches to teaching these key foundational reading skills (Pokharel 2018; Tunmer & Hoover 2019). While there is much debate in the literature around which components ought to be taught, in what order and with what weighting, there are a number of components which are commonly agreed to be key factors in learning how to read (Pretorius et al. 2020; Tunmer & Hoover 2019). These key factors are described by the SA DBE as 'five components of teaching reading: Phonemic awareness; Word recognition (sight words and phonics); Comprehension; Vocabulary; and Fluency'. The document goes on to state that 'each of these components needs to be taught explicitly and practised on a daily basis' (2011:14). Whistle Stop School teaching and learning is structured around the premise that each component of literacy skill contributes towards enabling learners first to make the connections between spoken word and written text, and then to extract meaning from text.

The approach utilised in the intervention incorporates an emphasis on phonemic awareness and phonics (understanding the relationships between sounds and their written representations), reading fluency, vocabulary development and comprehension. Whistle Stop School teaching and learning is structured around enabling learners first to make the connections between letter sounds and their written representation. As learners master the reading of single units of sound, they are explicitly taught the skills of blending (bringing single units of sound together to form words) and segmenting (breaking words down into their smallest units). Once these basic phonetic components of learning to read are in place, teaching and learning utilises a variety of pedagogical approaches broadly agreed to develop reading fluency including, but not exclusive to, group guided reading, paired reading, shared reading and writing, independent reading and creative writing. Once enabling levels of fluency have been reached, focus is then placed on the explicit teaching of comprehension strategies.

In line with the constructivist view of teaching and learning outlined above, programme content is purposefully designed

to be deeply embedded and contextualised in the lived experiences of the learners. Topics, resources and materials are related back to the learners' lives and real experiences to ensure meaningful learning (Long & Berriman 2018). Furthermore, WSS content is also influenced by a shared belief that:

[W]hen 'learning to read' is limited to following a structured and sequenced programme, the opportunity to connect literacy to the broader world and to substantive content is missed. This diminishes opportunities for poorer learners to engage with the world beyond the classroom and to extend their knowledge. (Abdulatif et al. 2018)

Opportunities to expand learners' life world are purposely created and built into WSS content. The programme is flexibly structured, and incidental learning opportunities are prioritised.

## Research questions

The main research objective of this study is to establish to what extent involvement in the WSS early grade reading programme impacts reading rate and comprehension performance for Afrikaans and isiXhosa HL learners learning to read in English. In order to answer this research objective, the following research questions were addressed in this study:

1. *How does Grade 1 data (pre-intervention) reflect norms in South Africa?*
2. *To what extent does involvement in the WSS programme impact on reading rate in Grades 2, 3 and 4?*
3. *To what extent does involvement in the WSS impact on comprehension performance in Grades 3 and 4?*
4. *To what extent does involvement in the WSS programme impact on comprehension performance post-intervention in Grades 5 and 6?*
5. *How does comprehension performance at the end of Grade 4 reflect norms in South Africa?*

## Research methods and design

This study draws on secondary data gathered through independent Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessments conducted annually over the first 6 years of the programme (2017–2022). Three types of datasets used in this article are: (1) one which tracks a specific cohort of learners longitudinally from their Grade 1 year (2017) through to their Grade 6 year (2022) (hereafter referred to as the case-study sample), (2) data from all Grade 1 learners at the partner school in 2017–2022, and (3) data collected from all Grade 4 learners in the partner school in 2019–2022.

## Participants

The participants are drawn from a quintile 3 school in Makhanda in the Eastern Cape. Approximately 65% of learners are HL isiXhosa speakers, and 35% are Afrikaans

HL speakers attending an English LOLT school. The case-study sample consists of three groups: a control group, who were not involved in the WSS programme; a WSS 1-year group, who were part of the programme for 1 year; and a WSS 2-year group, who has been in the programme for 2 years. There were 69 learners assessed in total for the case-study sample. Concerning the other two datasets used in this article, the Grade 1 sample includes 454 learners across the 6 years, and the Grade 4 sample includes 308 learners.

## Measures

Learners were assessed one-on-one on independent ORF assessments from Grade 1 to Grade 4 in November every year. The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessments were utilised, though contextualised where appropriate. Each learner read three different texts (a mix of fiction and non-fiction texts). Different sets of texts are used for each grade, and texts are considered appropriate for the grade level. Learners are given 1 min to read each text aloud. A word correct per minute (WCPM) score is calculated for each learner by subtracting the errors made from the total number of words attempted. The final WCPM count used in this study is based on the mean score across the three texts.

Comprehension assessments were also performed annually from Grade 3 to Grade 7. Grade-appropriate texts sourced from graded readers were utilised. Each assessment consisted of one fiction and one non-fiction text. There were 12 marks associated with a ranging number of questions for each text. The first four marks were designed to assess literal comprehension skills. The second set of four marks was made up of questions designed to assess inferential comprehension, and the final set of four marks tested evaluative comprehension skills. Each text included the number of words the average learner at the particular grade level should be able to read in 1 min according to ORF English First Additional Language benchmarks (EFAL). WhistleStop School teachers administered the assessments in the school-based classroom with the full cohort of learners. Learners were given basic instructions but no further assistance. Learners were given a maximum of 30 min to complete the assessment.

## Data analysis

The data were analysed quantitatively using the final WCPM raw score from the ORF task and the raw comprehension scores (out of 24). Learner performance was analysed using JAMOVI (The Jamovi project, 2023), with a particular focus on the mean scores. In addition, graphs are used throughout the article for visualisation of learner performance.

## Ethical considerations

Ethical clearance was obtained from the Rhodes University Education Faculty Research Ethics Committee (EF-REC). Ethical Clearance Number: 2023-7266-7613.

## Results and discussion

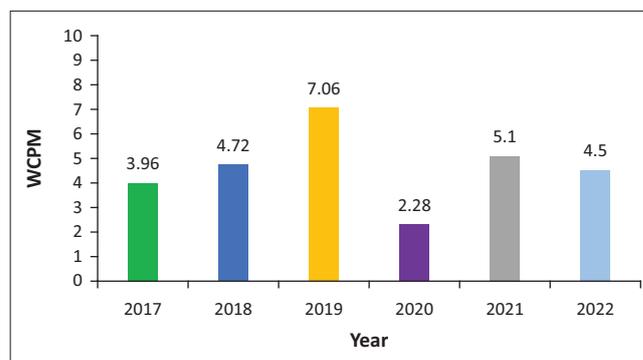
The results of the learner performance for the ORF and comprehension assessments are reported in this section in order to answer the research questions. The study utilises established ORF HL and English EFAL benchmarks, as well as a 62.5% benchmark level for comprehension. According to the SA DBE document on setting benchmarks in South Africa:

[A]lthough a score of 60 percent for comprehension in standardised reading comprehension tests signals that a child requires additional support, for many teachers in South Africa, a score of 60 per cent would probably be regarded as a good achievement. (SA DBE 2020:27)

Reading to learn literature demonstrates conflicting views on ORF benchmarks. According to Spaul (2015), setting ESL benchmarks in South Africa is a largely unexplored area. Some suggest that enabling thresholds per grade for learners who are not from an English HL background but who are attending schools where the LOLT is English ought to approximate those of English HL learners, while many suggest lower reading rates per grade for ESL learners. Spaul (2015) argues that in the initial stages of ESL reading for LOLT (i.e., Grade 4), it should be unsurprising if learners are reading at 70% of the rate of English HL learners, but that as learners move up the academic ladder, the gap between English HL and ESL should start narrowing. For this reason, we have chosen to present data here that reflects both internationally recognised DIBELS English HL benchmarks alongside ESL benchmarks suggested by the South African-based Zenex Foundation and the Western Cape Department of Basic Education.

### Reading rate prior to intervention (Grade 1)

The dataset used to answer the question concerning how the Grade 1 data (pre-intervention) reflects norms in South Africa draws on all Grade 1 learners at the partner school over the first six years for the programme (2017-2022) ( $N = 454$ ). The learner performance reflects the pre-intervention scores of learners, as the WSS programme only starts from Grade 2.



Note: Mean WCPM for grade 1 learners across the years. WCPM, word correct per minute.

FIGURE 1: Grade 1 learner performance on oral reading fluency.

Figure 1 reports the mean scores for learner performance on ORF in Grade 1 prior to involvement in the intervention.

The results show that the learners generally scored relatively similar with respect to their WCPM at the end of each year, with the lowest WCPM observed in 2020 ( $M = 2.28$ ) and the highest in 2019 ( $M = 7.06$ ). The mean of the case-study sample (2017) was 3.96 WCPM. The data show that the case-study sample chosen for the purposes of this study is not biased to other cohorts as being more or less capable than the average. In addition, while there are no standardised ORF norms for Grade 1 in South Africa per se, learner performance at baseline is comparable to findings of other Southern African research on Grade 1 literacy. For example, Schaefer and Kotze (2019) reported the average ESL WCPM score for the end of Grade 1 for a sample of isiZulu and isiXhosa HL learners was 4.3 WCPM. They drew their data from the SA DBE Early Grade Reading Study (EGRS) 2. In addition, research from Kenya reported averages of 4.3 WCPM for EFAL learners at the end of Grade 1 (Piper et al. 2018), and Ardington et al. (2021) reported that Setswana Grade 1 learners could read on average 7.9 words at the end of Grade 1. While we acknowledge that English and Setswana are vastly different languages, both employ disjunctive writing systems, allowing us to make some tentative comparisons. What is evident is that the baseline for the WSS project reflects findings of other research on Grade 1 ESL learners in Southern Africa, indicating a lack of 'bias' in relation to the case-study group as being more or less capable than the average. Further, it demonstrates that learners entering Grade 2 are at a similar level and that learners are starting off with low fluency levels, which are reflective of national norms. According to the 2023 National Reading Panel results, 50% of Grade 1 learners in no-fee schools in South Africa do not know their basic letter-sound correspondences by the end of the year (Spaull 2023).

### Impact of involvement in Whistle Stop School programme on reading rate in Grades 2, 3 and 4

The data reported in this section is on the case-study sample ( $N = 69$ ) and is longitudinal in that it follows the same cohort of learners from Grade 1 (2017) through their Grade 4 year (2020). In order to answer the question concerning the extent to which involvement in the WSS programme impacts on

reading rate in Grades 2, 3 and 4, comparisons are made between a control group, who were not part of the programme, a 1-year group, who were involved in the programme for at least one year, and, a 2-year group, who were in the programme for at least 2 years.

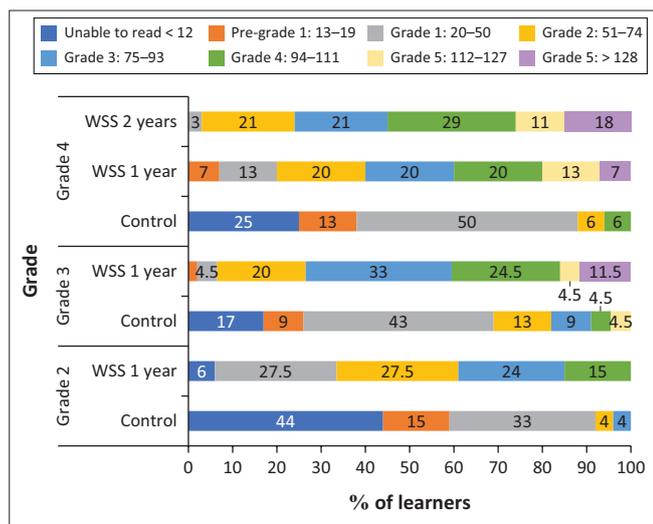
Table 1 presents the descriptive statistics for learners' performance on ORF by grade and intervention involvement. The results show that in Grade 2, the mean ORF reading rate for the WSS learners after one year of intervention was 64.5 WCPM (standard deviation [SD] = 28.1) and for the control group (no intervention) was 18.9 (SD = 20.6). An independent sample t-test showed that the mean difference of 45.6 between the two groups was significant,  $t(58) = -7.02$ ,  $p < 0.001$ , 95% Confidence Interval [CI] = [-58.6;-32.6],  $d = -1.82$ . For Grade 3, the mean ORF reading rate for the WSS learners (1 year of intervention) had increased to 88.6 WCPM (SD = 29.8) and for the control group to 39.7 (SD = 31.9). An independent sample t-test showed that the mean difference of 48.9 between the two groups was significant,  $t(66) = -6.25$ ,  $p < 0.001$ , 95% CI = [-64.5;-33.3],  $d = -1.60$ . The reading rates of those involved in the WSS programme are thus significantly higher than those in the control group in both Grade 2 and Grade 3, even after only 1 year of involvement in the programme.

By Grade 4, the data were split into three groups: control, those who received 1 year of intervention (WSS 1-year), and those who had been in the programme for 2 years (WSS 2-year). A one-way analysis of variance (ANOVA) showed a significant effect of intervention on reading rate ( $F(2,66) = 32.5$ ,  $p < 0.001$ ,  $\eta^2 = 0.496$ ). Post hoc tests (using the Holm correlation to adjust  $p$ ) indicated that the control group had a lower reading rate than the WSS (1-year) group ( $t(66) = -4.84$ ,  $p < 0.001$ ,  $d = 1.739$ ), and the WSS (2-year) group ( $t(66) = -8.06$ ,  $p < 0.001$ ,  $d = 2.402$ ), and that the WSS (1-year) group had lower scores than the WSS (2-year) group ( $t(66) = -2.17$ ,  $p < 0.05$ ,  $d = 0.663$ ). These results show that involvement in the WSS programme had a significant impact on reading rates. This measurable difference was also observed between the amount of time in the programme, with those who had been in the programme for 2 years reading at higher rates than those only involved in the programme for 1 year.

**TABLE 1:** Descriptive statistics for oral reading fluency and comprehension performance.

Variables	Control								WSS (1 year)								WSS (2 years)								
	N	Mean	SD	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	Min	Max	N	Mean	SD	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	Min	Max	N	Mean	SD	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	Min	Max	
<b>Oral reading fluency (WCPM)</b>																									
Grade 1 (2017)	60	6.1	12.3	0.0	0.0	10.3	0	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grade 2 (2018)	27	18.9	20.6	0.0	16.0	27.0	0	88	33	64.5	28.1	46.0	67.0	85.0	0	109	-	-	-	-	-	-	-	-	-
Grade 3 (2019)	23	39.7	31.9	18.0	31.0	62.5	0	115	45	88.6	29.8	71.0	88.0	103.0	15	154	-	-	-	-	-	-	-	-	-
Grade 4 (2020)	16	30.0	26.8	9.8	30.0	48.0	0	101	15	81.3	32.1	64.0	90.0	102.0	17	133	38	101.0	29.60	81.5	100.0	114.0	37	185	
<b>Comprehension (/24)</b>																									
Grade 3 (2019)	23	6.4	4.9	3.0	5.0	9.5	1	16	45	13.7	5.5	11.0	14.0	18.0	2	23	-	-	-	-	-	-	-	-	-
Grade 4 (2020)	16	5.6	4.0	2.8	5.0	7.3	0	15	15	17.1	5.7	13.0	19.0	21.0	5	24	37	19.6	3.26	18.0	20.0	22.0	8	24	
Grade 5 (2021)	13	5.0	4.7	1.0	4.0	9.0	0	15	9	10.7	5.7	7.0	10.0	17.0	1	17	37	16.2	4.00	14.0	16.0	19.0	6	23	
Grade 6 (2022)	15	7.5	5.0	3.0	8.0	11.5	0	15	13	13.2	9.3	3.0	15.0	21.0	0	23	38	16.4	7.30	15.0	19.0	21.0	0	24	

WSS, Whistle Stop School; SD, standard deviation, WCPM, word correct per minute.



WSS, Whistle Stop School.

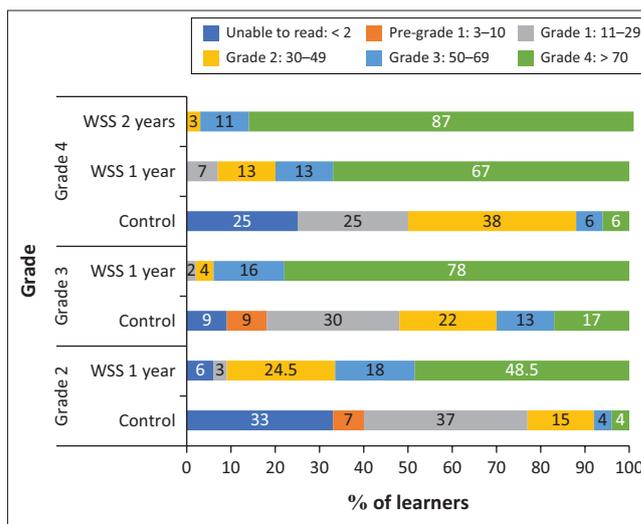
**FIGURE 2:** Percentage of learners reaching dynamic indicators of basic early literacy skills home language oral reading fluency benchmarks.

Figure 2 represents learner performance against the DIBELS HL benchmarks at each grade.

The majority of the learners involved in the WSS programme were reading at or above the HL benchmarks for each grade, with those in the control group mostly reading below this level. Specifically, in Grade 2, only 8.0% of the control learners were reading at or above the Grade 2 HL benchmark, whereas 66.5% of learners who had received intervention through the WSS were at or above the Grade 2 HL benchmark. In Grade 3, only 18% of learners in the control group were reading at or above the Grade 3 HL benchmark at the end of Grade 3, while 72% of learners who had been part of the WSS intervention were at or above the HL benchmark at the end of Grade 3. In Grade 4, only 6% of learners in the control group were reading at or above the HL Grade 4 benchmark. Of those learners who had received 1 year of intervention through the WSS, 40% were at or above the benchmark, and for those who had been in the programme for 2 years, 58% were reading at or above the benchmark.

While the LOLT of the school is English, and thus, learners are immersed in an English HL curriculum, the learners themselves are not English HL speakers. We thus also mapped their performance against the National SA DBE EFAL benchmarks at each grade, as shown in Figure 3.

Figure 3 shows that the majority of learners involved in the WSS programme were reading above the benchmarks, while only a minority of those learners in the control group were reading at the appropriate benchmark levels. Specifically, in Grade 2, 23% of the control learners were reading at or above the EFAL Grade 2 benchmark, whereas 91% of learners who had received intervention through the WSS for 1 year were at or above the Grade 2 EFAL benchmark. In Grade 3, 30% of learners in the control group were reading at or above the Grade 3 EFAL benchmark at the end of Grade 3, while 94% of learners who have been part of the WSS intervention for 1



WSS, Whistle Stop School.

**FIGURE 3:** Percentage of learners reaching dynamic indicators of basic early literacy skills home language oral reading fluency benchmarks.

year were at or above the EFAL benchmark at the end of Grade 3. Lastly, in Grade 4, only 6% of learners in the control group were reading at or above the EFAL Grade 4 benchmark. Of those learners who had received 1 year of intervention through the WSS, 67% were at or above the benchmark, and for those who had been in the programme for 2 years, 87% were reading at or above the benchmark.

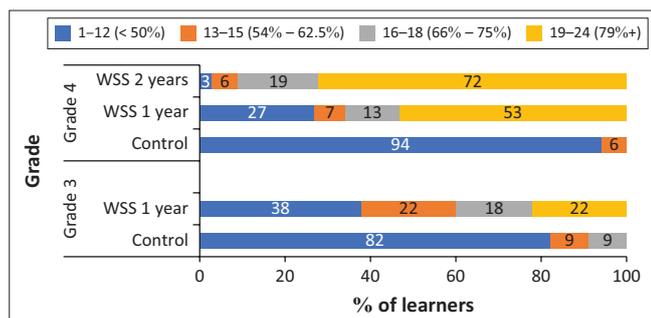
### Impact of involvement in Whistle Stop School programme on comprehension performance in Grades 3 and 4

Table 1 presents the results for learner performance on comprehension by grade and intervention involvement in order to answer the question concerning the extent to which involvement in the WSS impacts comprehension performance in Grades 3 and 4.

The data reported on in this section follow the same cohort of learners reported on in the previous section (i.e. the case study sample,  $N = 69$ ) on their reading rates from Grades 1 to 4, but instead focusses on their comprehension performance in Grades 3 and 4. Comparisons are made to the control group of learners, and for Grade 4, comparisons are also made between those involved in the programme for 1 versus 2 years.

The results show that involvement in the WSS programme had a significant impact on comprehension performance, with those learners involved in the programme significantly outperforming those not in the programme. In addition, those learners involved in the programme for 2 years significantly did better in their comprehension performance than those only involved in the programme for 1 year.

The mean raw comprehension score for WSS learners after 1 year of intervention in Grade 3 was 13.7 out of 24 ( $SD = 5.5$ ), and for the control group, it was 6.4 ( $SD = 4.9$ ). An



WSS, Whistle Stop School.

**FIGURE 4:** Learner performance on comprehension, Grades 3 and 4.

independent sample t-test showed that the mean difference of 7.28 between the WSS learners and control group was significant,  $t(66) = -5.34$ ,  $p < 0.001$ , 95% CI = [-10.00; -4.56],  $d = -1.37$ . In Grade 4, a one-way ANOVA showed a significant effect of intervention on reading comprehension ( $F(2,65) = 64.4$ ,  $p < 0.001$ ,  $\eta^2 = 0.664$ ). Post hoc tests (using the Holm correlation to adjust p) indicated that the control group had lower comprehension scores than the WSS (1-year) group ( $t(65) = -7.69$ ,  $p < 0.001$ ,  $d = 2.764$ ), and the WSS (2-year) group ( $t(65) = -11.26$ ,  $p < 0.001$ ,  $d = 3.368$ ), and that the WSS (1-year) group had lower comprehension scores than the WSS (2-year) group ( $t(65) = -1.97$ ,  $p = 0.053$ ,  $d = -0.604$ ).

Figure 4 shows the percentage of learners at different levels of reading comprehension. Although the CAPS provides some guidelines as to what kinds of comprehension questions to include, very little support is provided as to what counts as acceptable comprehension levels. For the purposes of this study, we have used the levels of comprehension outlined in the SA DBE's document on setting benchmarks in South Africa as a guide.

Figure 4 shows that learners in the control group mostly scored below 50%, with 82% scoring below 50% in Grade 3, and 94% of learners in Grade 4 scoring below 50%. Of those learners involved in the WSS programme, the majority were achieving above 50%. Specifically, in Grade 3, 62% of learners were achieving above 50%. Of those learners, 22% were scoring 79% or more on the comprehension task. In Grade 4, for those learners involved in the WSS programme for 1 year, 73% were above 50%, with 53% of these achieving 79% or more. This number increased for those learners involved in the programme for 2 years, with 72% achieving scores above 79%. This data shows that learners are capable of reading for meaning by Grade 4 if provided with the correct pedagogical support.

The PIRLS 2021 (DBE 2023) revealed that 81% of South African learners cannot read for meaning in any language by the end of Grade 4. The PIRLS results are mapped against achievement of the Low International Benchmark and no clear explanation as to what comprehension attainment level constitutes 'being able to read for meaning'. Using 62.5% as our 'cut-off' for reading for meaning, based on findings

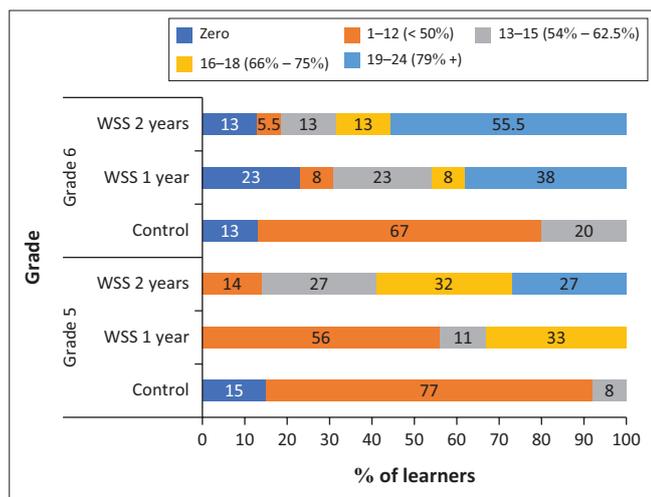
of Pretorius et al. (2020), Spaul (2015), and the SA DBE's document on setting comprehension benchmarks, our results showed that none of the learners in the control group could read for meaning, while 66% of learners in the WSS 1-year group could read for meaning by the end of Grade 4, and 91% of the WSS 2-year learners. These results are significant as they present an opposite pattern to the national average reported on in the PIRLS (2021). That is, in the current study, the majority of learners in the WSS programme were able to read with meaning by the end of Grade 4; only 44% of learners from the WSS 1-year group and 9% of learners from the WSS 2-year group were unable to read for meaning. This is a stark contrast to the 81% reported in the PIRLS (2021).

### Impact of involvement in Whistle Stop School programme on comprehension skills on performance post-intervention years, Grades 5 and 6

As previously mentioned, the WSS programme only supports learners from Grades 2 to 4. The following reports on the learners' comprehension performance post-intervention (i.e., Grades 5 and 6) in order to investigate whether learners are able to maintain their reading rate and comprehension ability post-intervention. The data reported on uses the same cohort of learners whose performance was reported on in the previous sections (i.e. the case-study sample,  $N = 69$ ). Descriptive statistics are presented in Table 1. Comparisons are once again made between the control group, learners involved in the programme for 1 year, and learners involved in the programme for at least 2 years.

A one-way ANOVA showed a significant effect of the intervention on reading comprehension for Grade 5 ( $F(2, 56) = 31.7$ ,  $p < 0.001$ ,  $\eta^2 = 0.531$ ). Post hoc tests (using the Holm correlation to adjust p) indicated that the control group had a lower comprehension score than the WSS (1-year) group ( $t(56) = -2.94$ ,  $p < 0.005$ ,  $d = -1.28$ ), and the WSS (2-year) group ( $t(56) = -7.80$ ,  $p < 0.001$ ,  $d = -2.52$ ), and that the WSS (1-year) group had comprehension scores than the WSS (2-year) group ( $t(56) = -3.33$ ,  $p < 0.05$ ,  $d = -1.24$ ). In Grade 6, a one-way ANOVA showed a significant effect of the intervention on reading comprehension ( $F(2, 63) = 8.11$ ,  $p < 0.001$ ,  $\eta^2 = 0.205$ ). However, this was only significant between the WSS (2-year) group and the control group ( $t(63) = -4.02$ ,  $p < 0.001$ ,  $d = -1.225$ ). The difference in comprehension scores between the WSS (1-year) group and the WSS (2-year) group ( $t(63) = -1.38$ ,  $p = 0.522$ ,  $d = -0.442$ ) was not significant, nor was the difference in comprehension scores between the control group and the WSS (1-year) group ( $t(63) = -2.07$ ,  $p = 0.086$ ,  $d = -0.783$ ).

The results show that in Grade 5, a significant effect of involvement in the WSS programme is still observed. In particular, a difference is found in learner achievement according to whether or not the learner was part of the programme for one versus 2 years. However, in Grade 6, the impact of involvement is less evident, with no significant difference in learner performance observed between the control group and those who had been in the



WSS, Whistle Stop School.

FIGURE 5: Learner performance on comprehension, Grades 5 and 6.

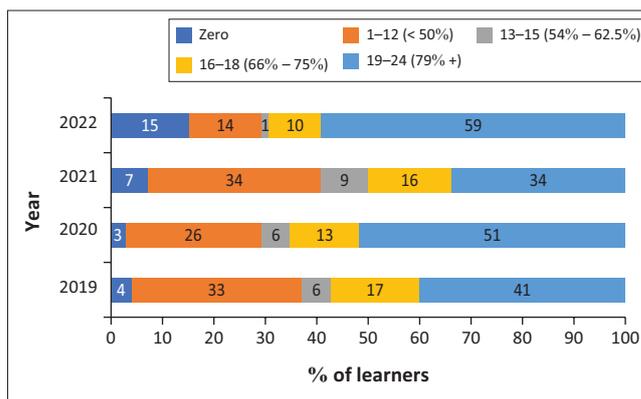
WSS for 1 year, nor among those who had been in the programme for one versus 2 years. The only observable difference was between the control group and the WSS 2-year group.

Spaull (2015) found that the mean score for silent reading comprehension for Grade 5 ESL learners in the Eastern Cape at an English LOLT school was 19.1%, and the national mean was reported as 20.5% across nine provinces. In our study, the mean score for the control group in Grade 5 was 42%; for the WSS 1-year group, it was 44.5%; and for the WSS 2-year group, it was 67.5%. The results reported in the current study are significantly higher than those reported in Spaull (2015).

Figure 5 shows the percentage of learners reaching the different comprehension levels by grade and intervention involvement. If we use the same criteria for what constitutes the ability to read for meaning as used in the previous section, which was 62.5%, the results of the current study show that in the control group, no learners were able to read with meaning. Among the WSS 1-year group, 33% could read for meaning in Grade 5, and 46% could read for meaning in Grade 6. These results are similar to those of the most recent PIRLS (2021), which showed that only 44% of Grade 6 children were able to read for meaning. However, for those learners who had been in the programme for 2 years, the results are more promising. Fifty-nine percent (59%) of learners could read for meaning in Grade 5, with this increasing to 68.5% in Grade 6. This is 28.5% higher than the national average.

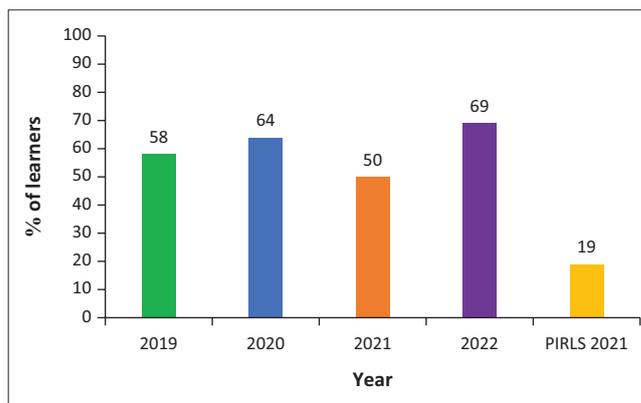
### Comprehension performance at the end of Grade 4 and norms in South Africa

Given the emphasis placed on being able to read for meaning by the end of Grade 4 by the DBE and in the PIRLS, this section only presents data on learners' comprehension performance at the end of Grade 4. Data were only available from 2019 to 2022.



Note: Grade 4 learner performance on comprehension levels by year

FIGURE 6: Grade 4 learner performance on comprehension (N = 308).



Note: Percentage of learners who can read for meaning > 62.5% in Grade 4.

FIGURE 7: Percentage of learners who can read for meaning in Grade 4.

Figure 6 represents learner performance on comprehension for Grade 4 for years 2019–2022. The sample includes all learners at the partner school and not just those involved in the WSS programme (N = 308).

Using the 62.5% benchmark as an indication of 'reading for meaning' as previously used in this article and in Spaull (2015), the results show that across the 4 years, more than 50% of the full cohort of Grade 4 learners at the partner school were able to read for meaning. More specifically, in 2019, 58% of learners were reading for meaning. In 2020, 64% of learners were reading for meaning; in 2021, 50% of learners were reading for meaning; and in 2022, 69% of learners were able to read for meaning. This is 29% higher than the national average, as reported in PIRLS 2021 (DBE 2023) and shown in Figure 7.

## Conclusion

The main research objective of this study was to establish to what extent involvement in the WSS early grade reading programme impacts reading rate and comprehension for Afrikaans and isiXhosa HL learners learning to read in English. In addition, we sought to establish to what extent Grade 1 learner performance (pre-intervention) and Grade 4 (post-intervention) reading (DBE 2023) and comprehension data reflected national norms.

Grade 1 results showed that learners are entering Grade 2 more or less on the same level and that this level is well below the level expected by the Grade 2 CAPS curriculum. As detailed in the results section above, Grade 1 data presented in this case study reflect findings nationally. This indicates that learners are falling significantly behind right from the very beginning of their foundation years. As is true for every grade, the pacing of the curriculum precludes Grade 2 teachers from adequately addressing gaps already in place from Grade 1, resulting in many learners not being afforded epistemological access to the Grade 2 curriculum, thus compounding knowledge gaps. When considering national reading programmes designed to address the crisis, national and case study results suggest that intervention should focus attention on the very basics of emergent and early reading in Grades R and 1 to prevent early deficits from compounding through schooling. Added to this, data suggest that allowing some level of curriculum flexibility might be necessary. Departmental support enabling teachers to establish reliable baseline information at the start of an academic year and then to tailor curricula to address existing gaps prior to starting grade level curricula, particularly in the first 3 years of formal schooling, could have a positive impact on learning trajectories. This approach would ensure that at least the majority of learners have the prior knowledge necessary to enable successful teaching and learning at the expected grade level.

Results showed that involvement in the WSS programme had a significant impact on learner reading rates. When compared to international DIBELS HL benchmarks for each grade, learners in the control group were not able to reach the appropriate grade level, while the majority of learners involved in the WSS programme were reading above the benchmarks. Specifically, in Grade 2, 66% of WSS learners were at or above the Grade 2 benchmark, with 72% of Grade 3 WSS learners at or above the Grade 3 benchmark. In Grade 4, of those learners who had received 1 year of intervention through the WSS, 40% were at or above the benchmark, and for those who had been in the programme for 2 years, 58% were reading at or above the benchmark. When compared to the National SA DBE EFAL benchmarks, 90% of WSS learners in Grade 2 were above the Grade 2 benchmark, 94% of Grade 3 learners were at or above the Grade 3 benchmark. Furthermore, 80% of Grade 4 WSS 1-year learners and 98% of WSS learners involved in the programme for 2 years were at or above the Grade 4 benchmark. The partner school is quintile 3, which serves learners from low socio-economic circumstances, which reflects the majority of learners attending such schools across the country. This seems to indicate that it is school, classroom, and curriculum-based issues that are at the root of the reading crisis.

With respect to comprehension performance for Grades 3 and 4 learners, the results showed that involvement in the WSS programme had a significant impact, with those learners involved in the programme notably outperforming those not in the programme. In addition, those learners involved in the programme for 2 years did significantly better in their comprehension performance than those only involved in the programme for 1 year. This suggests that the amount of time

spent in the programme has a marked impact on learner performance. A more detailed analysis of comprehension performance revealed that when using 62.5% as our 'cut-off' for reading for meaning, based on findings of Pretorius et al. (2020), Spaul (2015), and the SA DBE's document on setting comprehension benchmarks, the results showed that none of the learners in the control group could read for meaning, while 66% of learners in the WSS 1-year group could read for meaning by the end of Grade 4, and 91% of the WSS 2-year learners. This indicates that literacy teaching, which includes the explicit teaching of comprehension skills in Grades 3 and 4, could be useful in assisting learners to make the necessary shift from learning to read to reading to learn.

The WSS programme provides support to learners in Grade 2 to Grade 4. Data from Grades 5 and 6 (post-intervention) showed that in Grade 5, a significant effect of involvement in the WSS programme is still observed. In particular, a difference was found in learner achievement according to whether or not the learner was part of the programme for one versus 2 years. In Grade 6, the impact of involvement for 1 year is less evident, with no significant difference in learner performance observed between the control group and those who had been in the WSS for 1 year. The only observable difference was between the control group and WSS 2-year group. These results show that the WSS programme has lasting impacts on learners' comprehension levels post-intervention. The greatest impact is, however, observed after being involved in the programme for at least 2 years. This suggests that to ensure lasting impacts on learners' comprehension skills, sustained dosage may be more effective than once-off 'snapshot' interventions.

The data from Grade 1 showed that the baseline for the WSS project reflects findings of other research on Grade 1 ESL learners in Southern Africa, indicating a lack of 'bias' in relation to the case-study group as being more or less capable than average. However, by Grade 4, the data no longer reflect national norms. Using the 62.5% benchmark as an indication of 'reading for meaning,' the Grade 4 comprehension results show that in 2019, 58% of learners were reading for meaning. In 2020, there were 64%; in 2021, 50% of learners were reading for meaning, and in 2022, 69% of learners were able to read for meaning. This is a stark contrast to the results of the PIRLS (2021), in which only 19% of Grade 4 learners respectively were able to read for meaning.

In conclusion, small-scale though the WSS is, the results drawn from annual EGRA-style assessments clearly demonstrate that with the right approach, the 'lofty' goal of the 2030 Reading Panel (to ensure that all children in South Africa aged 10 or older can read for meaning by 2030) may be achievable.

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### Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

## Authors' contributions

K.A.L. conceptualised the research, collected data, wrote the first draft of the article excluding data presentation and analysis, and contributed to writing, reviewing and editing the article. T.N.B. completed the formal data analysis, wrote the first draft of article, and contributed to writing, reviewing and editing the article.

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## Data availability

The data that support the findings of this study are available on request from the corresponding author, K.A.L.

## Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors, and the publisher.

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