Whistle Stop Schools: Evaluation Report

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Contents

Acronyms

COMPASS	Comprehension Monitoring and Providing Awareness of Story Structure
DBE	Department of Basic Education
DCC	Development and Care Centre
DIBELS	Dynamic Indicators of Basic Early Literacy scores
DR-E	Dialogic Reading-Enhanced
EFAL	English First Additional Language
EGRA	Early Grade Reading Assessment
KNH	Kindernothilfe
LIM	Language in Motion
LoLT	Language of Learning and Teaching
MAT	Morphological Awareness Training
ORF	Oral Reading Fluency
PIRLS	Progress in International Reading and Literacy Study
RDD	Regression Discontinuity Design
SRI	Scholastic Reading Inventory
TA	Teaching Assistant
TaRL	Teaching at the Right Level
TEXTS	Teaching Expository Text Structure
WCPM	Words Correct Per Minute
WSS	Whistle Stop School

Executive Summary

The "Whistle Stop School" (WSS) is an early grade reading programme implemented within two no-fee schools in Makhanda, Eastern Cape. It was developed in response to the NPO, ST Mary's Development and Care Centre (DCC)'s concerns about the large gap between expected on-track development and learning and the actual educational attainment of children in its aftercare centre and across the country. The programme focuses on reading in early grades as an attempt to address the literacy crisis evident within South African schools. This focus is aligned with the view commonly held by researchers and society within South Africa that improving literacy will lead to broader improvements in learning in later grades as well.

The ultimate goal of the initiative is to develop learnings around innovative and contextualised approaches to teaching in early grade reading. There is hope that these learnings will increase the number of bachelor level passes at local no-fee high schools. WSS currently operates in two sites. The first site is at St Mary's Primary School, a quintile 3 English medium school, serving children of low socio-economic status who primarily speak isiXhosa and Afrikaans at home. The second partner school, Tantyi, is a quintile 3 school serving children of low socio-economic status. Here the Language of Learning and Teaching (LoLT) is isiXhosa, switching to English in Grade 4, with the children speaking isiXhosa as their Home Language.

The WSS programme takes a structured approach, beginning with literacy foundations such as phonemic awareness and letter sound knowledge, before moving on to comprehension skills, general knowledge, and vocabulary. Teaching is learner-centred, inclusive, participatory, democratic, and rooted in the social and cultural context of all learners. The programme is 'pull-out' as opposed to 'in-class'. Children are taught by qualified Foundation Phase and Intermediate Phase teachers in classrooms attached to the same school but catering specifically to the programme. Children are pulled out of class daily in groups of 12 and participate in 45-minute lessons, where they are taught by the same teacher each time. This approach - regarding small group sizes, dosage, and a consistent teacher - is well established in the academic literature around supplementary reading programmes.

The WSS intervention is designed in such a way as to take advantage of four vitally important factors: (1) It incorporates Teaching at the Right Level (TaRL), (2) it is structured, (3) it can be complementary to teaching rather than a substitute, and (4) it is evidence-based. Together, these factors make WSS likely to lead to both improvements in learning as well as valuable lessons on teaching reading in early grades.

This research had two aims. Firstly, to determine whether and to what extent the WSS project has achieved its objectives. Secondly, to determine whether any implementation practices are particularly beneficial to the programme, whether any are hindering programme efficacy, and where new or different practices may be prudent.

To achieve these aims, this evaluation included three evaluative branches. Firstly, the evaluation took the form of a quantitative impact evaluation. In this branch, the question of impact on learning outcomes was assessed statistically. Secondly, the evaluation took the form of a qualitative impact evaluation. Here, the focus was on the perceived benefits of the programme for children, teachers,

families, and other stakeholders. Finally, the evaluation took the form of a process evaluation. Here, the main focus revolved around programme implementation and practices. Each evaluative branch had specific questions and related approaches.

Quantitatively, the data reveals that WSS learners at St. Mary's consistently outperformed non-WSS learners across all three grades in terms of Oral Reading Fluency (ORF) improvement.[1] Despite variations in gains during the COVID-19 period, the programme has generally met its goal of a 25-word gain per year across all grades. Additionally, a significant percentage of WSS learners at St. Mary's reached or exceeded the Department of Basic Education (DBE) English First Additional Language (EFAL) benchmarks, positioning the school as one of the top performers among similar schools.

At Tantyi, the programme has also demonstrated success, with learners achieving gains in isiXhosa and EFAL that surpass programme goals. However, while these learners perform well compared to similarly-resourced schools, there is still room for improvement, as evidenced by the percentage of learners not reaching certain benchmarks. It is worth noting that when Grade 3 learners were selected into the programme in 2023, the average gains as well as the percentage of learners reaching benchmarks were higher than when all learners participated in the programme in 2020-2022. This is likely due to a selection bias.

Qualitatively, it is evident that the WSS programme has yielded substantial perceived benefits for both schools, particularly in enhancing reading literacy, creating a supportive learning environment, and fostering stakeholder engagement for holistic development. Stakeholders across both schools recognise and appreciate the positive impact of the programme. Successful elements of the programme include infrastructure investment, parental involvement, professional development opportunities, teacher selection, curricula, teaching methods, improvements in literacy and small group instruction. Concerns that were raised include filling the psychologist's role (at Tantyi), expanding capacity to make the programme more inclusive (especially in St Mary's), providing greater support to those with special needs, and learner turnover issues at Tantyi. In addition, WSS has to compete with other interventions at St Mary's, and this has resulted in the programme losing time with children.[2]

Overall, both quantitative and qualitative findings affirm the positive impact of the WSS programme on learning and development at St. Mary's SC School and Tantyi Primary School. While successes are celebrated, the identified areas for improvement provide valuable insights for further enhancing the programme's effectiveness and ensuring continued positive outcomes for all learners involved.

[1] ORF is a standard measure of literacy proficiency in early grades. Words Correct Per Minute (WCPM) is used to measure ORF.

[2] Note that all learners participate in Reading Eggs meaning there is no bias to the quantitative analysis to follow.

Take Home Points

- In St Mary's, learners statistically outperformed their peers and consistently met national reading benchmarks.
- The WSS programme consistently met its goal of a 25-word gain per year in English Home Language in St Mary's[3], and a 12-word gain in isiXhosa in Tantyi Grade 2.[4]
- Despite demonstrated progress in Tantyi, learners in Tantyi did not always meet national reading benchmarks.
- **The WSS programme consistently demonstrated positive outcomes for children, both in St Mary's and Tantyi, and in both the quantitative and qualitative research.**

[3] Grade 2s and 3s did not meet it in 2020 and Grade 3s did not meet it in 2021, likely due to the effects of COVID-19.

[4] Grade 2s did not meet it in 2020, likely due to the effects of COVID-19.

1. Background

1.1. Programme Context

The "Whistle Stop School" (WSS) is an early grade reading programme implemented within two no-fee schools in Makhanda, Eastern Cape. The four partners in this programme at their St Mary's RC Primary School site are the NGO GADRA Education, who are primarily responsible for running the programme, the NPO St Mary's Development and Care Centre (DCC), who initiated and jointly conceptualised the project, St Mary's RC Primary School, and Kindernothilfe (KNH), who has supported St Mary's DCC as an international partner for several decades and funds the WSS programme. At the second site, GADRA Education partners with Tantyi Primary School and Makana Winds of Change, the latter of which have funded the site since its inception in 2018.

GADRA Education focuses on service delivery and advocacy work for Makhanda public schools. St Mary's DCC, also based in Makhanda, aims to provide development and enrichment programmes for young children. This is well aligned to the goals of KNH, who are a Christian organisation based in Europe and whose mission is to contribute to forming a world in which children and young people can live a life of human dignity, develop personal talents and, together with their families and communities, take their development into their own hands. KNH supports over 1.5 million children and young people in 33 countries.

WSS began operation in 2017. It was developed in response to the DCC's concerns about the large gap between expected on-track development and learning and the actual educational attainment of children in its aftercare centre and across the country, as seen in the results of the 2011 Progress in International Reading and Literacy Study (PIRLS). The literacy crisis is well documented and includes the observation that the vast majority of children attending no-fee schools in South Africa are unable to read for meaning by the time they begin Grade 4 (Howie et al., 2017). At this point, schools stop teaching reading explicitly, moving away from 'learning to read' to onto 'reading to learn' (Pretorius, 2014). This is because the CAPS curriculum does not include explicit teaching of reading beyond Grade 3. Despite this expectation and change in practice in Grade 4, most children cannot read and therefore cannot read to learn, and continue to fall behind and dropout in intermediate grades and beyond (Spaull, 2015).

The programme focuses on reading in early grades as an attempt to address the literacy crisis evident within the Eastern Cape (and elsewhere) in South Africa's no-fee schools. This focus is aligned with the view commonly held by researchers and society within South Africa that improving literacy will lead to broader improvements in learning in later grades as well.

1.2. Programme Overview

The ultimate goal of the WSS initiative is to develop learnings around innovative and contextualised approaches to teaching in early grade reading. These learnings can then be used to increase the number of bachelor level passes at local no-fee high schools. WSS currently operates in two sites. The first site is at St Mary's Primary School, a quintile 3 English medium school, serving children of low socio-economic status who primarily speak isiXhosa and Afrikaans at home. This was the first school to participate in the programme, beginning in 2017. The DCC aftercare classroom spaces that were formerly only occupied in the afternoons are utilised by WSS in the mornings. GADRA

partnered with a second site in June 2018, a decision which was driven by the success of the initial implementation as well as a desire to gather learnings on non-English medium schools as well. The latter is an acknowledgement that children who interact with the school environment in their home language for the first 4 years of schooling (Grade R to Grade 3) and then switch to English in Grade 4, may face unique challenges to those who begin their schooling journey in English. The second partner school, Tantyi, is a quintile 3 school serving children of low socio-economic status. Here the Language of Learning and Teaching (LoLT) is isiXhosa, switching to English in Grade 4, with the children speaking isiXhosa as their Home Language. The available empty classroom spaces as well as the promising results of the first 6 months of the intervention led to continued investment into the program.

The WSS programme takes a structured approach, beginning with literacy foundations such as phonemic awareness and letter sound knowledge, before moving on to comprehension skills, general knowledge, and vocabulary. The approach is based on the assumption that effective literacy learning occurs when children are expertly guided through five developmental stages of reading development (awareness and exploration of reading; emergent reading; early reading; transitional reading; and fluent reading [Chall 1983, as cited in Parker, 2016]). Children cannot fully engage with and extract meaning from text without first learning how to read and reaching the fluent stage. Teaching is learner-centred, inclusive, participatory, democratic, and rooted in the social and cultural context of all learners. The programme is 'pull-out' as opposed to 'in-class' or 'pull-in', meaning that children are pulled out of the classroom during the school day as opposed to participating within the classroom. Children are taught by qualified Foundation Phase and Intermediate Phase teachers in classrooms attached to the same school but catering specifically to the programme. Children are pulled out of class daily in groups of 12 and participate in 45-minute lessons, where they are taught by the same teacher each time. This approach - regarding small group sizes, dosage, and a consistent teacher - is well established in the academic literature around supplementary reading programmes.

In the smaller of the two partner schools, Tantyi, all learners from Grade 1 to 3 (approximately 25 per grade) and a selection of Grade 4 learners initially participated in the programme. Due to the increased rate of enrollment in the school, however, Grade 3 learners were selected into the program from 2023. In St Mary's, the larger of the two schools (with approximately 110 learners per grade), learners in each grade are selected to participate. However, during Covid-19 (2020 and 2021), all children were taught because of the social distancing platooning (a process in which children take turns using classrooms). In 2017, Grade 3 and 6 initially participated in the programme and Grade 4 was added midyear when the teachers discovered that Grade 6 was too late to intervene. In 2018, Grade R, 2 and 4 participated in the programme and in 2019 Grade 3 additionally participated. In 2020, Grades 1-4 participated, however, the teachers realised that Grade 1 was not the appropriate space for a pull-out programme because it is the first year of formal schooling for many of the children and they have difficulty learning to follow instructions, sitting still, and learning in English (learners speak isiXhosa or Afrikaans at home). Due to this, the programme was discontinued at a Grade 1 level in 2021. In sum, between 2021 and 2023, Grades 2-4 have participated in the programme.

Selection into the programme in St Mary's (the larger school) utilises reading scores. Generally, in November each year, all St Mary's learners participate in a reading test which tests skills which include Oral Reading Fluency (ORF, measured as Words Correct Per Minute, WCPM). Each November

48 learners are selected into the programme starting January the next year. In cases when new learners are enrolled at the beginning of the year, they are tested at that point and then final decisions are made. While selection is based on ORF scores, in situations when the ORF scores are the same or very close, comprehension results are referred to in Grade 4 and Nonsense Word Fluency and then Letter Sound Knowledge in Grade 2. In rare cases, teachers are approached and asked which learner they feel should occupy the final empty seat.

Research finds that 50% of learners in South Africa experience learning barriers described as 'moderate to severe difficulties' or as disabilities (Kokot, 2006). Such learners require specialized teaching. Given resource constraints, the programme is not suitable for learners with severe learning barriers. This makes the programme unsuitable for the lowest performing learners at the partner schools. The programme therefore selects learners who are reading below grade level but do not have severe remedial needs. In practice, it is usually the case that every learner tested is reading below grade level and is in need of some level of remediation. As a result, WSS generally selects the best performing 48 learners, as these are the learners most able to respond to the programme. The limit on this practice is that the best 48 learners are selected unless they are already on track (which is exceedingly rare). This emphasises the extent to which severe learning barriers are a problem in the partner schools and the unsuitability of the programme for the weakest performing learners.

While 48 is the standard number of learners that are selected, this is not the case for every year and in every grade. Between 2021 and 2023, for example, 36 children were selected in Grades 2 and 3 and 48 were selected in Grade 4. There was only one year in which the tested learners included a group who were reading at or above grade level and were therefore not selected for the programme. . In 2023, the top 11 Grade 3 readers were reading at or exceeding a high Grade 3 level by the end of Grade 2 and so instead of participating in the WSS programme, they attended a reading lesson which included independent reading and library once a week.

Learners are assessed three times a year in January, June, and November. Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessments are used and contextualised (for example, changing the term 'vacation' to 'holiday'). DIBELS assessments were selected because they are free to use, they provide a variety of text, and the text length extends beyond 70 words. A common alternative, Early Grade Reading Assessment (EGRA), was not selected because it is expensive, it uses the same text from Grade 1 to Grade 3, and the text ends at approximately 70 words. In St Mary's all learners are tested in English, while in Tantyi Grade 1 and 2 learners are tested in isiXhosa (their LoLT) and Grade 3 learners are tested in English. The transition from testing in isiXhosa to English occurs in the third term of Grade 2, if the group of learners are reading at or above 40 words per minute in isiXhosa.

1.3. Programme Potential

The WSS intervention is designed in such a way as to take advantage of four vitally important factors: (1) It incorporates Teaching at the Right Level (TaRL), (2) it is structured, (3) it can be complementary to teaching rather than a substitute, and (4) it is evidence-based. Together, these factors make WSS likely to lead to both improvements in learning and valuable lessons on teaching reading in early grades.

Teaching at the Right Level, or TaRL, refers to the acknowledgement that learner ability varies widely within classrooms around the globe, and that learners cannot progress if they are being taught concepts for which they do not have foundational knowledge. TaRL is an evidence-based programme in itself, but the teachings of TaRL are implemented in WSS through the use of small-group and individualised teaching (Teaching at the Right Level - Foundational Skills for a Better Future, 2023). Research from around the globe shows that programmes are more effective when they are ***structured*** (Rodriguez-Segura, 2021). WSS certainly is structured as it follows a curricula design based first on ensuring children reach the level of fluency required for authentic engagement with text and then on the explicit teaching of comprehension skills and strategies. There is also regular opportunity for children to engage in independent reading of graded readers, reading for fun through the weekly classroom library, group guided reading, paired reading, shared reading, read aloud, and one-on-one reading with the teacher. In addition, one day a week is devoted to creative writing, one day to guided reading and library, two days to covering phonics in the lower grades and to content related to school curricula in the higher grades, and the fifth day to activities which build social skills and general knowledge. Although WSS is implemented outside of the classroom, by teaching necessary foundational skills, and curriculum content in later grades, the programme can act as a ***complement to teaching*** and not just a substitute (Piper et al., 2016). Finally, WSS is also ***evidence-based***, in that its practices draw from best practice in the academic literature. This will be demonstrated in the following section.

1.4. Literature Overview

The WSS programme has three main components: firstly, learners are pulled-out of their classrooms and taught in a different location; secondly they are taught in small groups of twelve; thirdly the WSS teachers follow a structured approach, beginning with literacy foundations such as phonemic awareness and letter sound knowledge, before moving on to comprehension skills, general knowledge, and vocabulary. In this section, we will provide an overview of the literature on the pull-out method, teaching in small groups, and the most effective ways to teach reading.

1.4.1. Pull-Out Approach

One of the components of the Whistle Stop School is pulling learners out of their regular classroom time to provide specialised support in another location. This is known as a pull-out intervention. In contrast, in a pull-in or push-in intervention, the reading specialist collaborates with the regular classroom teacher and co-teaches in the same classroom while all children are there (Rich, 2010). This could involve working separately with a few children in the classroom. In New York, USA, pull-in and pull-out approaches were compared in six elementary schools for Grades 2 to 5 (Gelzheiser et al., 1992). It was discovered that these two approaches did not differ in terms of gains in reading comprehension or total time devoted to reading instruction, however, learners in pull-in programs spent more time in non-reading activities (off-task, waiting, out-of-room, other academic subjects, and management) than those in pull-out programs. This suggests that pull-out programmes may be more effective at adhering to the subject at hand (in this case literacy) than a pull-in approach.

In Belton, Missouri, a pull-in and pull-out model were also compared and it was found that the remedial learners in the pull-in model had a statistically significant higher mean change in reading

levels than those in a pull-out model (Rich, 2010). There are other studies, however, that have found positive effects of a pull-out model. In the US, “at-risk" male learners were pulled out of their English Language Arts class four days a week for 30 minutes and taught by a researcher who followed a Levelled Literacy Intervention Programme scripted lesson plan (Cook, 2019). Grade 5 learners improved their decoding and reading comprehension skills, but Grade 3 and 4 learners only improved their reading comprehension. In a southeastern state in the USA, 3rd grade learners who participated in a pull-out reading intervention were compared to a matched control group (Rhett, 2011). The treatment group improved on Scholastic Reading Inventory (SRI) and Dynamic Indicators of Basic Early Literacy scores (DIBELS) whereas the control group only made progress on the SRI. In Texas, USA, the effectiveness of three reading interventions was measured (Weikert, 2018). The first intervention was pulling-out learners in a small group using part-to-whole language strategies, the second was a computer-based reading intervention and the third was an integrated reading intervention type using whole-to-part language strategies. The researchers concluded that the human element was the strongest factor influencing outcomes (computers were less effective) and learners who were pulled-out improved on both implicit and explicit reading comprehension.

Outside of the USA, one study assessing the viability of a pull-out programme was conducted in Mumbai and Vadodara, India (Banerjee et al., 2007). Young women from the community called “balsakhi” were hired to teach basic literacy and numeracy skills to children lagging behind. Children were pulled out of their classroom and worked with these women for two hours a day. The average test scores of all children in treatment schools increased by 0,14 standard deviations in the first year and 0,28 in the second.

Overall, the evidence is mixed on whether ‘pull-out’ is *better than* ‘pull-in’, but the literature is clear that ‘pull-out’ programmes can certainly be effective.

1.4.2. Small Groups

In 2012, Hoadley raised the issue that in South African classrooms, learning was largely communalised with little attention to the progress of individual learners. A decade later, she and Boyd reported that while there is now some evidence of greater differentiation in classrooms today, for example, the introduction of Group Guided Reading, there remains little individualisation of learners in pedagogy (Hoadley & Boyd, 2022). A second component of the Whistle Stop School is teaching learners in small groups of 12. It is reasonable to believe that learners will make greater progress in their reading journey if they receive individualised feedback and support, and this individual support can be given in small groups or 1-1 sessions. While there is a dearth of research on the use of small reading groups, especially in developing countries, the evidence that exists is largely positive.

In Australia, for example, researchers found large statistically significant gains on many literacy measures for a small group literacy intervention programme (Wheldall et al., 2017). As part of the programme, children who were in groups of four attended sessions for one hour a day, four days a week for 15 weeks. In another study in North Yorkshire, 77 children were assigned to one of two groups (Hatcher et al., 2006). The first group received the reading intervention for two consecutive 10-week periods and the second group received it for the second 10-week period of the study. In

other words, this was a phased-in approach. The reading intervention which combined phoneme awareness training, word and text reading and phonological linkage exercises was delivered in daily 20-minute sessions that alternated between individual and groups of three. The children in the first group made significantly more progress than the second group in the first phase of the programme, however, the second group caught up during the second phase once they received the programme. Despite the success of the group, approximately one quarter of the children did not respond to the programme and it was recommended that they receive more intensive and prolonged support.

Two studies have explored the impact different group sizes have on literacy. In Kansas, Kamps et al. (2007) found that learners receiving evidence-based direct instruction reading curricula that targeted skills such as phonological awareness, letter sounds, fluency building and comprehension and were taught in small groups of 3 to 6 saw higher gains than those in groups of 6 to 15 who received a balanced literacy instruction that focused on word study, group and individual story reading and writing activities. In Florida, Homan et al. (2001) assessed whether a 1-to-1 Reading Recovery programme would work if it was taught in groups of three and they strongly advised that teachers make use of both 1-to-1 and groups of 3.

In South Africa, there is an absence of research on small group interventions, however, there is one example that demonstrates the success of this method. As part of the Funda Wande Limpopo Teaching Assistant (TA) programme, TAs were instructed to identify struggling learners and work with them individually or in groups of five to six learners (Makaluza & Mpeta, 2022). This programme saw gains of 0,44 standard deviations in literacy and 0,38 standard deviations in numeracy after one year at the Grade 1 level.

While small groups appear to be effective, the type of reading intervention also matters. In a southeastern state in the USA, two large-scale randomised trials of five small-group intensive language-focused interventions were conducted in preschool and kindergarten settings (Phillips et al., 2021). The interventions were delivered to the children in the form of groups of three to five children in 20-25 minute pull-out sessions four days a week. Researchers found that the Dialogic Reading-Enhanced (DR-E) and Language in Motion (LIM) interventions had a significant effect on vocabulary and syntax at a preschool level but not Comprehension Monitoring and Providing Awareness of Story Structure (COMPASS), and LIM and COMPASS, but not Teaching Expository Text Structure (TEXTS), and Morphological Awareness Training (MAT) had a significant impact at a kindergarten level. Seeing that a few of the interventions did not have an impact on literacy results despite the use of small groups, there is reason to believe that small groups need to be paired with an effective literacy programme. In the following section we consider various literacy programmes.

1.4.3. Teaching of Reading

In 2000, the US National Reading Panel published the report, 'Teaching children to read' (Barlett et al., 2015; Sørensen, 2015). In this report, they proposed five pillars of reading:

1. phonemic awareness, or the ability to identify the individual sounds in spoken words;
2. phonics, or the correspondence of letters (graphemes) to sounds (phonemes);
3. fluency, which is the ability to read text accurately and quickly, with natural prosody;

4. vocabulary; and
5. comprehension, which is the ability to understand and communicate meaning from what is read (Barlett et al., 2015, p. 309; Sørensen, 2015, p. 2).

These five pillars laid the groundwork for the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment (Barlett et al., 2015; Sørensen, 2015), a "continuous assessment classroom tool developed for use in the US that reduces reading to discrete skills and then condenses those skills to isolated, quantitative measures… [It] consists of a set of short, timed tests meant to measure phonemic awareness, alphabetic principle, fluency, reading comprehension, and vocabulary (Bartlett et al. 2015, p. 309)."

DIBELS, alongside the five pillars published in the US National Reading Panel report, informed the Early Grade Reading Assessment (EGRA) which was developed by USAID and RTI International in 2006 (Barlett et al., 2015; Sørensen, 2015). EGRA, as defined by Dubeck and Gove (2015, p. 317), "is a research-based collection of individual subtasks that measure some of the foundational skills needed for reading acquisition in alphabetic languages". The assessment was founded based on the assumption that there are three early stages of reading acquisition (Barlett et al., 2015; Sørensen, 2015), namely the emergent stage which tests phonemic awareness, listening comprehension and concepts about print, the decoding stage, which tests letter naming, letter sounds, syllable naming, nonsense word reading and familiar word reading, and the confirmation and fluency stage which tests paragraph reading (ORF) with comprehension as well as dictation (Gove & Cvelich, 2011). The rate at which children pass through these stages is dependent on country and language (Barlett et al., 2015; Sørensen, 2015). While EGRA has been adapted in many countries and languages including in South Africa, one the critiques it has received is that reading is not taught in stages and comprehension and fluency should be taught simultaneously (Barlett et al., 2015; Sørensen, 2015).

The Reading Wars is a longstanding and contentious debate in the field of education concerning the most effective way to teach children how to read. On the one hand, the Whole Language approach emphasises the overall meaning of language and the context of written material. Teachers who support this method expose their children to literature and encourage them to use contextual clues and their existing language to figure out words. In this approach, there is less emphasis on explicit phonics instruction. On the other hand, the Phonics approach emphasises the systematic teaching of the relationship between sounds and their corresponding letter combinations. Teachers who support this method teach their children how to recognise and decode words by understanding the individual sounds of letters and combinations of letters. Explicit teaching of phonetic rules and regular practice in decoding words is taught. In an attempt to reconcile these two reading approaches, a 'balanced approach' has been advocated whereby phonics-type activities are included in a Whole Language reading programme (Pretorius et al., 2022). While CAPS follows a balanced approach, and there are a few studies that have found merit in this approach (Scola, 2002; Wildsmith-Cromarty & Gounden, 2006; Namugenyi, 2019; Nathanson, 2008; Wolbert, 2009), there are scholars who are not in support of it (Pretorius et al., 2022).

There is ample evidence in South Africa to support the claim that there are strong relationships between decoding and reading comprehension and that later reading performance can be predicted from the earlier achievement of basic reading skills (Spaull & Pretorius, 2022). For example, Schaefer

and Kotzé (2019) found significant relationships between phonological awareness and letter sound knowledge for later wording abilities in isiZulu, siSwati, and English for 1347 learners. In a later year, Wills et al. (2022a), who combined early grade reading data for 40 000 learners, also found a strong positive relationship between phonological awareness and ORF for multiple African languages. IsiXhosa learners who got all three phonological awareness questions correct in Grade 1, for example, achieved an ORF score that was 15 words higher than those who got none of the questions correct in Grade 3. In addition, the proficiency in letter sounds in the earlier grades was also found to be a strong predictor of ORF in the higher grades. ORF in turn strongly predicts comprehension. Drawing upon this evidence, the Department of Basic Education has developed letter sound and ORF EGRA benchmarks for multiple African languages (Ardington et al. 2020, 2021 and 2022; Mohohlwane et al., 2022, Wills et al., 2022b). Learners that reach these benchmarks at the recommended point, stand a greater chance of reading with comprehension in Grade 4. It is also notable that in South Africa, the large-scale interventions that have displayed the greatest promise (Early Grade Reading Study I and II and the Funda Wande interventions) have included explicit, systematic instruction in phonics (Spaull & Pretorius, 2022; Spaull & Taylor, 2022).

The methods used by WSS are based on the assumption that children develop their reading ability in stages and that children need to become fluent before they can comprehend. Specifically, the theory that informs their teaching is the developmental reading theory. Chall (1983, as cited in Parker, 2016) notes that there are five stages of learning to read. The first is the 'Awareness and Exploration of Reading' stage which typically occurs pre-kindergarten. The second is the 'Emergent Reading Stage' which typically occurs between prekindergarten and kindergarten. The third is the 'Early Reading Stage' which typically occurs between kindergarten to early Grade 1. The fourth is the 'Transitional Reading Stage' which typically occurs late Grade 1 to Grade 2. The last stage is the 'Fluent Reading Stage' which occurs in Grade 3 and higher. The time periods may give an indication of the stage a child may be at, however, due to the reality that children may be in a stage outside of one typical to their age group, the WSS makes use of assessments to determine which stage they are really in. The WSS curriculum is designed around the idea that children must first go through the process of learning how to read and reach the fluent stage before they can fully engage and extract meaning from text. In other words, children in the earlier grades are taught decoding tools (phonics, phonemic awareness, segmenting, blending) and older learners (who can read) are taught comprehension tools. While WSS supports the phonics approach, the teaching is purposefully designed to be contextualised and holistic. This suggests that the WSS is more aligned with a balanced approach of teaching children how to read.

In this section, the literature on the pull-out approach, teaching in small groups and the most effective way to teach reading were summarised. While each component of the WSS has value, it is the combination of all three that appears to provide the greatest promise. If teachers pull Grade 1 learners out in small groups but they do not teach them basic decoding skills in these sessions, it is unlikely that these children will learn how to read.

2. Research Aims

This research has two aims. Firstly, to determine whether and to what extent the WSS project has achieved its objectives. Secondly, to determine whether any implementation practices are particularly beneficial to the programme, whether any are hindering programme efficacy, and where new or different practices may be prudent.

To achieve these aims this evaluation used three evaluative branches. Firstly, the evaluation tookthe form of a quantitative impact evaluation. In this branch, the question of impact on learning outcomes was assessed statistically. Secondly, the evaluation took the form of a qualitative impact evaluation. Here, the focus was on the perceived benefits of the programme for children, teachers, families, and other stakeholders. Finally, the evaluation took the form of a process evaluation. Here, the main focus revolved around programme implementation and practices. Each evaluative branch had specific questions and related approaches. What follows is an outline of the specific approach and related research questions for each evaluative component.

2.1. Quantitative Impact Evaluation

A quantitative impact evaluation is the natural candidate wherever questions exist around impact and quantitative data is available or able to be collected. In WSS schools, DIBELS assessments are conducted with WSS participants in January, June, and November for multiple grades every year. In addition, DIBLES (Gr1 - 4) and comprehension assessments (Gr 3 - 7) are conducted annually with the full cohort of learners at both sites. Both partner schools also participated in a city-wide study in 2023 which tested all Grade 4 learners on comprehension as well as a subset of Grade 4s on ORF. There is therefore a wealth of data with which to quantitatively assess this programme. For the quantitative impact evaluation the primary research questions are:

a. Do learners who participate in the WSS programme reach national reading benchmarks and how does this compare to national outcomes?
b. Do learners who participate in the WSS programme have higher reading ability than their statistically equivalent peers?

2.2. Qualitative Impact Evaluation

While quantitative impact evaluations provide a statistical assessment of whether impact has been made, qualitative impact evaluations are necessary wherever impact is not quantitatively defined. For the qualitative impact evaluation, the primary research questions are:

a. What benefits do teachers/families/community stakeholders/partner organisations see from the WSS programme, for children, themselves, and for other groups?
b. Do teachers/families/community stakeholders/partner organisations see any negative effects of the WSS programme? What are these?

In addition, secondary questions include:

c. Does the presence of programme staff benefit the partner school? In what ways?
d. Do the programme staff benefit from being in the partner school? In what ways?

2.3. Process Evaluation

Process evaluations are used wherever questions exist around good practice, areas of concern, and potential for increased efficacy, relevance, sustainability, and impact. The process evaluation uses qualitative research techniques, but it is distinct from a qualitative impact evaluation in its scope. More specifically, while a qualitative impact evaluation focuses exclusively on the perceived benefits of a programme, a process evaluation focuses exclusively on the way in which the intervention is implemented. For the process component of the evaluation, the primary research questions are:

a. Do teachers/families/community stakeholders/partner organisations approve of the WSS programme? Why or why not?
b. What aspects of the WSS programme work well?
c. What aspects of the WSS programme can be improved?
d. How can WSS change its approach to better meet the needs of the school/teacher/family?

In addition, secondary questions will be probed by the researcher in the focus groups:

e. What is the opinion of various stakeholders on the quality of the WSS curricula?
f. What is the opinion of various stakeholders on the selection and training of WSS teachers?
g. Are the content, methods, and interaction of learners of WSS appropriate/optimal?

3. Methodology

3.1. Mixed Methods

The design of this study was mixed methods which included desktop analysis as well as both quantitative and qualitative research methods. Although three distinct evaluative branches were conducted, the outcomes of each will be presented in as integrative a manner as possible, where each draws on the others to create a holistic picture.

3.2. Quantitative Impact Evaluation

The quantitative impact analysis portion of the evaluation asks two primary research questions, which are (1) Do learners who participate in the WSS programme reach national reading benchmarks and how does this compare to national outcomes? And (2) Do learners who participate in the WSS programme have higher reading ability than their statistically equivalent peers?

The first question can be answered by analysing the available DIBELS assessments from each site and comparing them to national benchmarks. In St Mary's DIBELS was conducted in English in all grades and in Tantyi, Grade 1 and 2 learners were tested in isiXhosa (their LoLT) and Grade 3 and 4 learners were tested in English. The transition from testing in isiXhosa to English occurs in the third term of Grade 2 if the group of learners are reading at 40 words per minute or above in isiXhosa. National benchmarks are available for isiXhosa for Grades 1-3, and for EFAL for Grades 1-6. City-wide data on Grade 4 comprehension for both schools will also be used to compare learners to the DBE benchmarks.

It must be emphasised that any differences found in the proportion of children reaching national benchmarks between the two sites cannot be attributed to the effect of Straight-For-English versus home language LoLT in the early grades. With only two sites it is statistically impossible to draw this conclusion. Differences are equally likely to be due to other school or community effects, or to

random variation. In the same vein, while a large difference between the proportion of children in WSS schools reaching national benchmarks compared to national averages would indicate some effectiveness of the programme, this conclusion is speculative at best. Without a direct comparison group it is not valid to draw such a conclusion from this analysis.

The second evaluation question deals with impact more pointedly. This question asks whether WSS participants have higher reading ability than their peers and therefore requires a statistical comparison group. Unfortunately, with the available data it is not possible to answer this question for Tantyi because all learners participate in WSS and there is no learner-level group with which to compare outcomes.[5] Although we can statistically match this smaller school to another school with Grade 4 comprehension outcomes, the data would have had to be collected prior to the WSS programme. Furthermore, comparison between two schools is not useful due to the likelihood of random outcomes in such a small sample. It is far better to compare among many learners within the same school, as we do with St Mary's.

When designing our model estimating the impact of WSS on reading ability in St Mary's, the biggest concern we have is sample selection bias. Learners who partake in WSS already have higher reading ability than their peers not selected to participate. Therefore, any comparison between the two may overestimate programme effects since the higher performing learners selected for the program may have made larger gains than those not selected for the program without participating in the program. More generally it can be said that the presence of non-random selection will bias programme impact estimates upward.

At the outset of this project we planned to run a Regression Discontinuity Design (RDD) to mimic the effect of random selection. Unfortunately, this wasn't possible due to there being no clear cut-off point for inclusion in the WSS programme. The discussion in Appendix 1 details this and also provides justification for the standard regression model that we run instead.

We estimate the effect of WSS on ORF gains over a one-year period (with ORF measured as Words Correct Per Minute [WCPM]). The model is estimated separately for each grade, but pooled over years to increase sample size. The regression equation is presented below:

$$Y = WCPM\_change_i = \beta 0 + \beta 1 WSS_i + \beta 2\, WCPM\_initial_i + \beta 3 Year_i + \beta 4 (WCPM\_initial * WSS)_i + \epsilon_i$$

$where\ the\ level\ of\ observation,\ i,\ is\ the\ learner.$

$WCPM\_change = End\ of\ year\ WCPM\ score - WCPM\_initial$

$WSS = 1\ if\ learner\ i\ is\ in\ WSS\ program,\ 0\ if\ learner\ i\ is\ not\ in\ WSS\ program$

$WCPM\_intial_i = Learner\ i's\ WCPM\ score\ at\ the\ beginning\ of\ the\ year$

$Year_i\ is\ an\ indicator\ variable\ controlling\ for\ the\ year\ in\ which\ the\ learner\ participated\ in\ WSS$

[5] Although Tantyi does select learners in 2023, just one year of selection means the sample size is too small for statistical analysis.

In the equation, we control for initial WCPM so that we can compare the effect of the programme without the effect of the learner's reading level at the beginning of the year. We also allow for a relationship between initial WCPM and gain in WCPM for those in and out of WSS with the interaction term (*WCPM_intial*WSS*). While we pool over years, we include the *Year* dummy to control for differential year effects. The variable of interest is *WSS* as this indicates how much of the change in WCPM can be attributed to participation in the WSS programme.

In order to understand the robustness of our main results the model is also estimated for a restricted sample of similar learners. To calculate the restricted sample, we created a "centre point" - a point at which we have many WSS and non-WSS learners with similar initial WCPM scores. For each regression by grade, we restricted the sample size so that only learners who were within a certain range of the "centre point" were included. Restricting the analysis so that only those who were similar to each other in terms of initial WCPM served as a robustness check for our main results using the full sample because we are comparing learners in very similar positions before the start of the program. If we see a divergence in the performance of learners who perform similarly before the program we can more confidently attribute the gains in performance to the program. While using a center point is ideal, and the smaller the range around it the better, it must be noted that every restriction decreases the sample size available and limits our ability to detect significant effects.

In the case of Grade 2, we restricted the model so that only those who were 1, 2, 5 and then 10 WCPM away from the "centre point" were included in the analysis. In the case of Grades 3 and 4, we restricted it so that only those who were 5, 10, 20 and 25 WCPM from either direction of the "centre point" were included in the analysis.

3.3. Qualitative Impact Evaluation and Process Evaluation

The Qualitative impact analysis and process evaluation differs in scope but is aligned in method. Qualitative data collection involved semi-structured interviews and focus groups with current programme beneficiaries, programme staff, partner organisations, and community stakeholders. We also conducted classroom observations. Data collection was conducted independently for each site. The qualitative researcher spent two days collecting data on each site (four days total) between 19-22 February 2024.

The evaluation sample was purposefully chosen and consisted of four WSS teachers, one WSS classroom assistant, seven parents, two principals, and seven partner site school teachers. Participants were selected by the WSS programme staff according to availability. Four classroom observations were conducted, two at St. Mary's and two at Tantyi. The table below provides a summary of the data collection activities. The interview schedule is provided in Appendix 2, and the classroom observation tool is provided in Appendix 3. The report on actual fieldwork activities against the planned activities is included in Appendix 4. The report includes comment explanations for deviations from the data collection plan.

Table 1: Summary of fieldwork activities

Stakeholder	Method	No. Conducted	No. of Participants Tantyi	No. of Participants St. Mary's
WSS staff	Semi-structured Interview	2	2	1
WSS and site school staff	Focus Group	2	6	5
Partner school teachers (staff)	Semi-structured Interview	2	1	1
WSS classroom	Observation	4	2	2
Partner school principal	Semi-structured Interview	2	1	1
Parents/community member	Semi-structured Interview	3	2	1
	Focus Group	1	0	4
Partner organisation	WSS Program Manager	1	1	

Respondents were supportive of the qualitative evaluation. Fieldwork went smoothly, without any major challenges or changes to the data collection plan. The fieldwork activities were completed on schedule. Furthermore, Jayne Berriman the WSS principal, suggested that Kelly Long, former WSS programme principal, be included in the interviews. The data was analysed thematically according to the research questions posed at the inception of this project.

4. Programme Observations and Perceptions

4.1. Overview

It was observed that St. Mary's WSS teachers have one class assistant each, while the Tantyi teachers do not have class assistants.[6] Evidence from South Africa suggests that classroom assistants may be instrumental in achieving learning objectives in under-resourced settings (Ardington, 2023). However, we were not aware of the presence of class assistants before entering the schools and as such did not develop specific questions and instruments for this context.

While differences in the method of delivering the WSS reading literacy lesson activities were observed between the St. Mary's and Tantyi WSS classrooms during the lessons, we can only provide

[6] KNH funding as well as availability and willingness of DCC programme staff at St Mary's make this possible. Funding is not currently available for classroom assistants at Tantyi.

an illustration of what was observed rather than attributing differences in outcomes to these observations. This is because both stakeholder groups (for Tantyi and St. Mary's) were very positive about the programme and all its components (as will be discussed). Hence, the only differences in outcomes seen are in the quantitative impact evaluation (below). We cannot quantitatively attribute differences in outcomes to the qualitatively assessed activities since there are many more differences between the schools that the differences in outcomes may be due to.

During observation in the Tantyi classroom, the Grades 1 and 3 groups moved as a whole group between two activity centres. The first was the reading mat: the teacher started the settled group with a story recapping activity, some vocabulary, then moved to the reading aloud with the group, went through sight words, asked comprehension questions, learners asked questions in turn, and the teacher gave learners the opportunity to read sections of the storybook. The grade 3 learners were lively, excited, and engaged. The grade 1 learners had a focused phonemic lesson during this activity. Thereafter learners moved to the second activity centre, desk work: the learners sat in groups of 4 at the desk arrangement and completed the individual reading exercises using graded readers.

At St. Mary's Primary School, the grade 3 and 4 groups of 12 learners were pulled out of their classroom lesson and rotated between two learning activity centres in smaller groups of four. The activity centers were desk work and the comfortable reading mat. One group of four learners started at the story reading activity on the mat, while the other three groups of four learners had desk reading literacy activity until it was their turn at the story reading activity centre (one group at a time). The WSS teacher led the mat reading literacy activities, while the class assistant oversaw the desk-work activities, including assigning each learner a graded reading book. Splitting into even smaller groups means more individualised attention, however, the reading time seemed short for each of the groups, as it was shared in rotation and it also appeared process-oriented.

It was reported that WSS teachers use various methods to deliver reading literacy lessons and activities in their classrooms, such as multi-media presented lessons, change of environment to outdoors, including educational excursions to help learners remain engaged, interested, excited, fascinated, and looking forward to being part of WSS.

WSS classrooms were attractive and well-resourced with educational materials, including sizeable classroom libraries. The classrooms were colourful and vibrant with purposeful educational and craft decorations, and were furnished with educational posters. At St. Mary's one classroom had human-biology body mannequins. The reading area had mats and cushions for comfortable seating. The classroom observation tool and responses can be found in Appendix 3.

4.2. Curricula

It was generally agreed that the WSS programme curricula serve as the backbone of its success, providing a structured framework for improving reading literacy among learners. This structured approach is supplemented by small group instruction, which allows for personalised attention tailored to individual learners' needs. However, some stakeholders suggest enhancing the transparency of the curriculum, which may help parents and partner school teachers support learners in ways that are beneficial to the programme.

Flexibility and adaptability: The absence of a grade-aligned curriculum allows teachers to tailor instruction to meet the specific needs of learners. Stakeholders recognise and appreciate this flexibility.

Effective teaching methods: WSS teachers have praised the teaching methods they employ, noting that they have incorporated innovative strategies that make learning enjoyable for learners. This includes activities that encourage active participation and creative thinking, fostering an engaging and dynamic learning environment.

Reading improvement: The consensus among stakeholders is that the WSS programme has led to significant improvements in reading fluency, comprehension, vocabulary, and writing skills among participating learners. Children who were previously struggling with reading have shown marked progress, demonstrating the efficacy of the programme's literacy-focused approach.

Small group instruction: Parents and teachers appreciate the individualised attention given to learners in small groups, which allows for tailored support based on each child's learning needs. This personalised approach has contributed to the success of the programme in addressing the diverse needs of learners, fostering better engagement and understanding among learners.

Assessment and monitoring: Regular assessments help track learner progress and inform instructional decisions, ensuring targeted interventions and ongoing improvement.

Curriculum understanding: Some stakeholders express a lack of understanding regarding the specifics of the WSS curriculum. While they acknowledge its effectiveness based on observed outcomes, there is a desire for more clarity and transparency regarding curriculum content and methodologies.

Technological integration: Stakeholders identify a need for additional resources, particularly in terms of technology integration. While the curriculum covers essential areas, there is a desire for more technological support to prepare learners for the future.

WSS teacher: *"The main aspect being that we are teaching to the level and based on the needs of the learners. We therefore adapt and adjust what is needed year-on-year as well as day-to-day, as we see fit."*

WSS teachers: *"We need to remain being adaptable and creative and rethinking what and how we do."*

WSS teacher: *"I always think back to the 5 pillars of reading (phonemic awareness, phonics, fluency, comprehension, and vocabulary) to guide and anchor the programme reading literacy*

activities in the classroom. Where do I need to spend time with my learners, how can I make it relevant and fun. We need each pillar to be strong before building the following one."

WSS teacher: *"WSS curricula is responding to the children's needs because it is constantly being reviewed and developed. The only thing that's missing is technology incorporated especially for the future environment that the children are being prepared for. The school has received desktop computers recently from another program for Math literacy."*

4.3. Selection and Training of WSS Teachers

The selection and training of WSS teachers play a pivotal role in the programme's effectiveness. WSS advertises the vacancies through their networks in the Education faculty at Rhodes University to recruit desirable candidates to apply. Candidates must be qualified teachers to be eligible to apply. Short listed candidates are interviewed by a panel with representation from the partner organisation(s). In their selection, WSS has a particular focus on disposition and ensuring successful candidates are comfortable with upholding the ethos of WSS and of GADRA as a whole. They also prioritise candidates who have an interest in continued professional development and academic growth.

While stakeholders appreciate the programme's emphasis on hiring qualified teachers, some expressed the need for ongoing professional development. WSS teachers were lauded for their professionalism and effective teaching approaches, but concerns were raised regarding their capacity to address the diverse needs of learners. Despite these challenges, it was agreed that the programme's commitment to providing psychological support and resources underscores its holistic approach to learner development.

According to parents, school teachers, DCC, and the two partner schools principals, WSS has innovative, creative, loving, caring, concerned and dedicated teachers. The respondents have observed that the WSS teachers are good at connecting and building relationships with the children to understand each child's learning needs, they can detect when a child has an issue (learning or home) and intervene to address it. Children respect, trust and love the WSS teachers.

The interaction between WSS teachers and learners is considered pivotal by both the programme and school teachers. WSS teachers emphasise the importance of establishing a connection with learners, believing that effective teaching hinges upon this relationship. They value the opportunity to teach in small groups, enabling them to forge meaningful connections with each learner. Creating a vibrant and positive learning environment is emphasised as essential for building strong connections and fostering engagement among learners. This approach is supported by feedback from stakeholders and observations made during classroom observations, highlighting its effectiveness in practice.

School teacher: *"I have learned a lot from the WSS in terms of children's behaviour and development, it's easy to learn from the WSS staff because they are humble. Children are free to play with the teachers, they throw themselves at this teacher, they play with Justine's hair, children find them approachable."*

DCC staff: *"[With regard to WSS programme teachers' interactions with learners]: This is one of the most important aspects; I strongly believe that you cannot teach a child anything unless you have made a connection with them. We are fortunate that we teach small groups and therefore we can really build these connections and therefore we can cover so much in each class session. "*

Parent: *"WSS has improved my daughter's self-confidence…She was taught new ways to study by Jayne Berriman... She has developed a love for books. She even wrote a short story…"*

Principal: *"The interaction between the learners and WSS staff speaks volumes because these are the learners who are very excited to go to the WSS classes to learn, to use the WSS educational resources, to take out WSS library books.*

Professional qualifications: Stakeholders appreciate that WSS teachers possess professional qualifications and are effective in improving literacy levels. Their expertise, coupled with a passion for teaching, contributes to positive learning outcomes. The selection process for WSS teachers ensures that individuals share the same values as WSS/GADRA concerning teaching in the foundation phase and working with partner schools and teachers. This alignment of values fosters a cohesive and collaborative environment within the programme, enhancing its overall effectiveness.

Teacher training gap: Some WSS teachers express concerns about their own limitations in addressing the needs of learners with disabilities, learning difficulties or requiring remedial teaching. There is a perceived lack of training in diagnosing and supporting such learners, highlighting an area for improvement in teacher preparation. Addressing this gap in training could better equip teachers to meet the diverse learning needs of their learners effectively.

Psychological support: Participants discussed how WSS adopts a holistic approach to learner well-being by addressing not only academic needs but also psychological challenges faced by learners. The programme provides interventions and support where necessary, contributing to a nurturing environment for children from difficult backgrounds. The presence of a psychologist within the programme at Tantyi further enhances the support system available to learners, ensuring that their emotional and psychological needs are met alongside their academic requirements. Stakeholders expressed a strong interest in having someone with psychology training in the program following the departure of the previous incumbent in 2019.

Principal: "Not sure how the teachers are selected for the WSS programme, but they are effective and interact with the learners with empathy and support. They are positive, passionate, supportive, and patient when they work with the children. It impacts the children's behaviour, the children are more respectful, and have a positive attitude about reading and learning."

Principal: "Having seen Kelly Long, Jayne and Demi working with the children, it's rewarding for me to have these teachers working with my learners, seeing that they show such empathy to the learners because it can be frustrating to work with our learners if you don't understand their background. If they had no understanding of the learners' behavioural issues, they would have been disheartened and despondent, however they are always positive both to the learners and the staff."

5. Impact Evaluation

5.1. Perceived Impact

Across focus groups and individual interviews with various stakeholders, there was agreement that the benefits brought about by the WSS programme are manifold and far-reaching. Improved reading literacy was highlighted as a primary outcome, accompanied by small group instruction that fosters better engagement and understanding among learners. Infrastructure investment and material support provided by the programme was also seen to contribute to the overall enhancement of the school environment, benefiting not only participating learners but the entire school community. Furthermore, the encouragement of parental involvement through various initiatives was thought to strengthen the partnership between parents and the school. Professional development opportunities for teachers and customised learning approaches were stated as mechanisms through which each child receives the support they need to thrive academically and personally.

5.1.1. Impact on Learners

Learners enrolled in the WSS programme are the primary beneficiaries, with the perception that they experience substantial improvements in reading literacy and overall academic performance. The structured approach to literacy instruction has been touted as leading to marked advancements in reading fluency and comprehension. Small group instruction was consistently praised for allowing personalised attention, fostering better engagement and understanding among learners, and enabling learners to progress at their own pace to reach their full potential. This personalised approach was seen to not only enhance learners' academic abilities but also contribute to a love of reading as well as their personal growth, including increased confidence, resilience, and independence. Children were observed to be excited to participate in the program, and it was highlighted that their improved literacy skills contribute to the overall academic performance of the partner schools.

School Principal: *"WSS learners learn discipline, are disciplined, learn values such as respect for themselves and others, how to work collaboratively with other children…"*

Principal: ***"****The learners' sense of self-worth, belonging, and worthiness improves because of the relationships that developed with the WSS teachers who show care, support, and actively listen and provide the necessary attention to learners."*

Parent: *"As a parent, I've witnessed firsthand the tremendous impact of the WSS programme on my child's academic development. Not only have my child's literacy skills improved significantly, but they've also become more confident and enthusiastic about reading. The programme focuses on making learning fun and engaging and has sparked a love for reading in my child, leading to remarkable progress in spelling, vocabulary, and comprehension. I'm truly grateful for the positive influence the WSS programme has had on my child's educational journey."*

In Terms 2 and 4 of 2022 and Term 2 of 2023, student interns conducted brief telephonic interviews with parents of WSS-participating learners (Grades 1-3) to gauge their feelings about WSS. Interviews were conducted in English or isiXhosa depending on the language the parents felt most comfortable with. Approximately half of the parents who were contacted in 2022 answered their phones and the feedback in both years was largely positive. Many of the parents were impressed with the WSS programme and noted that they had observed improvements in their child's reading and English as well as a general improvement in their attitude towards reading and school more generally.

Table 2 below presents the number of parents that answered the phone during the telephonic interviews in each period of the year for each grade. The figures that follow display the parents' responses.

Table 2: Parents per grade and year, St Mary's telephonic interview

	Grade 2	Grade 3	Grade 4
Term 2 2022	17	12	28
Term 4 2022	14	17	19
Term 2 2023	15	23	16

In Term 2 of 2022 and 2023, both sets of parents were asked if they were aware that their child had a WSS library book to read at home. In 2022, 86 percent of parents were aware that their child had a WSS library book and in 2023, 89 percent of parents were aware of this. These parents were also asked whether they had noticed a change in either their child's attitude toward their school work or their ability to do it since starting at the WSS. In 2022, 86 percent of parents had noticed a change and in 2023, 93 percent had noticed a change. In Term 4 of 2022, parents were asked if their child

reads for pleasure. Every parent reported that their child does read for pleasure. These results indicate that on the whole, parents are aware of the programme and they have observed positive changes in their children because of it.

Figure 1: Percentage of parents who were aware that their child has a WSS library book to read at home , 2022 and 2023 Term 2

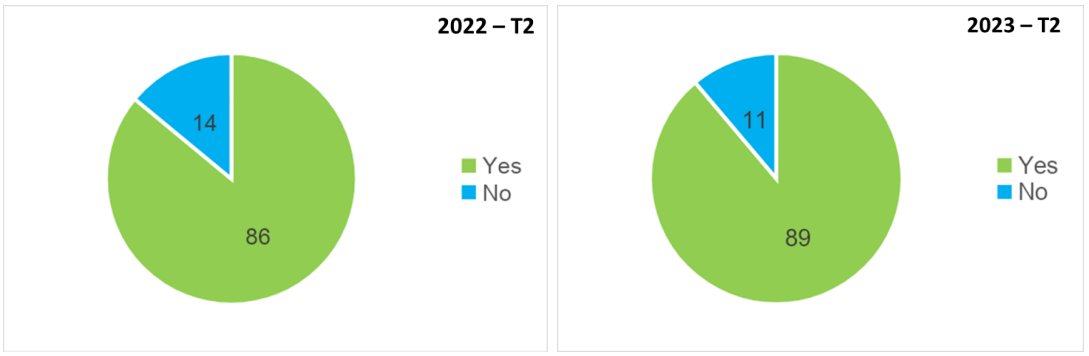
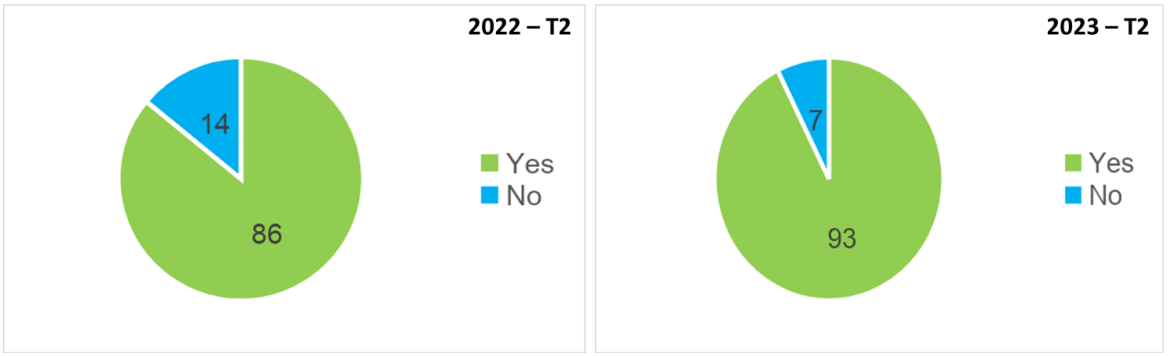


Figure 2: Percentage of parents who noticed a change in either their child's attitude toward their school work or in their ability to do their school work since starting at the WSS, 2022 and 2023, Term 2



5.1.2. Impact on WSS Teachers

WSS teachers benefit from the programme through professional development opportunities and support for effective teaching practices. The programme provides capacity-building in literacy teaching methods, equipping teachers with the skills and resources needed to address learners' diverse learning needs effectively.[7] Teachers appreciate the collaborative approach fostered by the programme, allowing them to share insights and strategies for improving literacy instruction. Moreover, the availability of resources such as books and multimedia equipment enhances the learning environment and supports teachers in delivering engaging and effective lessons. Overall,

[7] Note that while we believe teachers have been well-equipped to address diverse learning needs, there is still a gap between what can be considered effective training and what may be needed for learners with relatively severe circumstances. The latter is almost always present in the South African context. It is therefore the case that we see both effective and well-trained teachers, as well as potential for improvement with psychosocial and learning impairment specific training.

WSS teachers feel empowered and enthusiastic about their roles, leading to a positive impact on learning outcomes.

> ***WSS class assistant:*** *"Personally, I have gained a lot of experience from being a class assistant in the programme to becoming one of the teachers to implement the programme."*
>
> ***WSS teacher:*** *"I have been able to continue to study while teaching in the WSS programme. For example, I am using this as my data collection site. The organisation [GADRA] has encouraged my growth. This has made me more aware of the needs of the community. I also met incredible teachers with many years of experience as educators, while working for in the WSS programme."*
>
> ***DCC staff:*** *"The WSS programme has developed an independent reader in me, which has improved my reading interest horizon to science, nature, current affairs, fiction and non-fiction books."*
>
> ***WSS class assistant:*** *"[I] Feel much more enthusiastic regarding teaching, feel eager, feel positive; the classroom is vibrant during the reader literacy activity because of the material, equipment and professional support provided by WSS staff.'*

5.1.3. Impact on St Mary's, Tantyi, and their teachers

St. Mary's School and its teachers appear to reap numerous benefits from the WSS programme, contributing to the overall improvement of the school environment and educational outcomes. Infrastructure investments and material support provided by the programme, such as classroom renovations and educational resources, benefit not only WSS participants but the entire school community. Partner school teachers appreciate the programme's focus on professional development, which enhances their teaching skills and contributes to the overall quality of education at the school. Teachers expressed enhanced teaching skills through capacity building and sharing of knowledge with WSS educators and access to innovative teaching methods and resources provided by the WSS programme. They also mentioned improved understanding of individual learner needs and learning styles. Finally, teachers expressed a positive impact on their morale and job satisfaction due to seeing tangible improvements in learning outcomes.

Furthermore, the positive school culture fostered by the programme, centred around learning and growth, creates a supportive environment where both learners and educators thrive. The program is reported to have caused increased engagement and participation in various school activities from both learners and parents. The programme's emphasis on community outreach and engagement also strengthens the school's ties with the broader community, enhancing its reputation and impact.

Beyond literacy instruction, the WSS program has invested in the school's infrastructure. For example, they have renovated classrooms and provided resources that benefit the entire school community, not just those directly involved in the program. The WSS programme provides resources

such as educational packs which are distributed to learners by the partner school during school holidays, and have made reading books available through its library on loan to learners who are not targeted in the programme. For the plug-in reading literacy roll-out pilot, the WSS programme has provided multimedia equipment and materials to St Mary's, Tantyi and other 3 other no-fee schools in Makhanda. These resources enhance the learning environment and support the school's educational goals.

Principal: *"It is rewarding for me to work with and see the WSS programme staff's empathy and understanding and how they look positive all the time working with the learners and our teachers. The interaction between the learners and excitable for the learners, they love the programme and have benefitted from the WSS library they love the loaning out of the books."*

School teacher: *"Yes, I have learned from the WSS literacy programme and use their method to improve children's reading during reading time for my class. I have adopted the learner-focused approach to literacy support for my students during the reading period in grade 4. I read more because my children are reading and are eager to get more books to read from WSS Library."*

School teacher: *"I have been able to increase the reading scope of my classroom because of the WSS library and books provided to my class."*

5.1.4. Impact on Families, Community, and Other Stakeholders

Families, community members, and other stakeholders play a crucial role in supporting the success of the WSS programme. Parents express satisfaction with the programme's impact on their children's reading abilities and overall academic development. Their involvement in parent meetings, workshops, and activities increases awareness of the importance of reading and literacy, fostering a supportive learning environment at home. Community stakeholders and other partners appreciate the collaborative efforts of the programme in improving educational outcomes and promoting literacy within the broader community. The programme's positive impact is seen to extend beyond the school walls, enriching the lives of learners and stakeholders alike.

DCC staff: *"As a DCC staff, the WSS programme has helped me with facilitating skills and knowing what to look out for when working with children. As DCC staff, WSS assisted me in observational skills, teaching sounds (phonics), and sight words as well as new ways to assist the children we work with their learning."*

School teacher: *"WSS has an ?open-door policy that assists anyone on personal and professional levels. WSS when asked, provides advice on educational methods to teachers. WSS encourage people to make use of the community libraries."*

School teacher: *"Having the WSS program has helped with more and quicker detecting and identifying learning or life problems and challenges since the WSS teachers work very closely with their learners. For learning challenges the information helps both the class and WSS teacher to work together to support the learner."*

Parent: *"Events and outreach to parents and community increasingly improves parent participation and confidence in the school*"

a.

5.2. Observed Impact: St Mary's

In this section, we analyse how Grades 2-4 St Mary's learners performed in 2018 and 2023 in relation to the DBE national EFAL ORF benchmarks. In the majority of the years, WSS and non-WSS learners were tested internally in English at the beginning as well as the end of the year, and so we were able to calculate an initial ORF score (measured in WCPM) as well as a change in score over the space of a year. We start by presenting the average gain in WCPM for learners in each year and grade as well as the percentage of learners at each of the DBE benchmarks. In September 2023, Grade 4 learners in Makhanda participated in a reading assessment, a sample of which was tested in ORF. We go on to compare how learners in St Mary's performed in ORF compared to those in other Quintile 1-3 schools. Differences in WSS and non-WSS learners' performance and gains in our descriptive statistics cannot be causally attributed to the program given that the learners participating in the program and not participating are already at different levels of achievement and cannot be directly compared. However, we try to address this confounding factor in our regression analysis in the penultimate subsection (4.1.6) by directly controlling for initial WCPM of each learner.

5.2.1. Summary of the data

We start by presenting the St Mary's data that was used in our analysis. Every year, learners in Grades 2-4 were tested on ORF at the beginning and end of the year. Tables 3-5 present the sample sizes for initial WCPM score (January of the current year or November of the previous year) as well as the end of year WCPM score (November). In our analysis, we use the January score as our initial score, except when it is missing for a learner. In this case, we replace their missing score with the November score from the previous year.

Table 3: DIBELS sample size by year, St Mary's Grade 2

	WSS		Non-WSS	
	Initial WCPM	**End WCPM**	**Initial WCPM**	**End WCPM**
2018	Nov 2017: 47	46	Nov 2017: 46	47
2019	Nov 2018: 36	35	Nov 2018: 31	33
2020	Nov 2019: 36 Jan 2020: 36	34	Nov 2019: 30	30
2021	Jan 2020: 32	38	Jan 2021: 20	25
2022	Nov 2021: 36 Jan 2022: 34	36	Nov 2021: 30	32
2023	Nov 2022: 39 Jan 2023: 36	36	Nov 2023: 62	67

Table 4: DIBELS sample size by year, St Mary's Grade 3

	WSS		Non-WSS	
	Initial WCPM	**End WCPM**	**Initial WCPM**	**End WCPM**
2017	Jan 2017: 47	47	-	53
2018	Apr 2018: 12	12	Apr 2018: 58	60
2019	Nov 2018: 11	12	Nov 2018: 49	59
2020	Nov 2019: 60	59	-	-
2021	Jan 2021: 35	37	Jan 2021: 31	31
2022	Jan 2022: 32	32	-	31
2023	Nov 2022: 35 Jan 2023: 36	36	Jan 2023: 22	53

Table 5: DIBELS sample size by year, St Mary's Grade 4

	WSS		Non-WSS	
	Initial WCPM	**End WCPM**	**Initial WCPM**	**End WCPM**
2017	Jun 2017: 36	36	Jun 2017: 70	70
2018	Nov 2017: 38 Jan 2018: 38	38	Nov 2017: 59	65
2019	Nov 2018: 46 Jan 2019: 46	46	Nov 2018: 52	57
2020	Nov 2019: 46	46	Nov 2019: 22	23
2021	Nov 2020: 43 Jan 2021: 47	48	Nov 2020: 14 Jan 2021: 19	19
2022	Nov 2021: 47 Jan 2022: 47	45	Nov 2022: 17	24
2023	Nov 2022: 52 Jan 2023: 48	47	Nov 2022: 17	17

Below we present the sample sizes for the Quintile 1-3 English schools that participated in the Makhanda citywide test. These sample sizes refer to the number of learners that participated in the ORF test.

Table 6: ORF tests per school, citywide Makhanda reading test in English schools

School	Sample Size
E	18
I (St Mary's)	19
S	23
T	9

5.2.2. *Descriptive findings*

In the next three subsections, we compare the average ORF gain for learners who participated in the WSS and those who did not. We also compare the percentage of learners in each of these groups reaching the DBE benchmarks.

Grade 2

Figure 3 displays the average gain in ORF scores each year over 2018 to 2023. We used the WCPM at the beginning of the year and the end of the year for each learner to calculate how many words they gained that year, and then we averaged this over all learners. Learners who attended the WSS consistently showed higher gains in ORF scores than those who did not attend. The greatest difference between the two groups was in 2018 when non-WSS learners gained an additional 2

WCPM by the end of the year compared to WSS learners who gained an impressive 50 WCPM. Non-WSS learners made the greatest gains in 2019 with 16 WCPM, but this was still substantially below the gains made by WSS learners (42 WCPM). In 2020 and 2021 learners in the WSS made much smaller gains in scores, likely due to Covid-19. In fact, in 2021, the difference in average scores between the two groups was only 10 WCPM. In 2022 and 2023, however, WSS learners recovered, and were gaining over 40 WCPM per year once again. This is approximately 30 WCPM above those who were not in the WSS.

Figure 3: Average ORF gain by year, St Mary's Grade 2

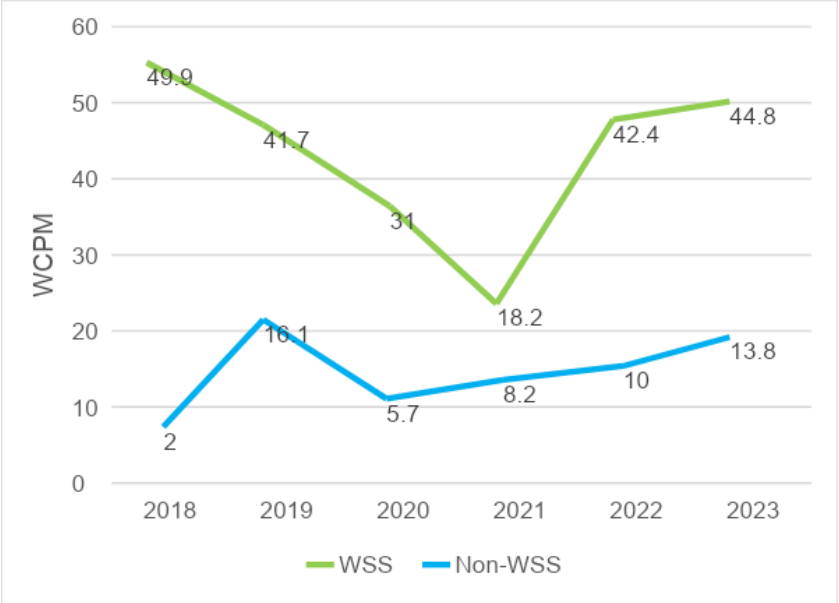


Table 7: Percentage of St. Mary's learners reaching DBE EFAL benchmarks (2018-2023), Grade 2

	WSS (%)		Non-WSS (%)	
	Initial WCPM	**End WCPM**	**Initial WCPM**	**End WCPM**
Non-reader	41,3	3,7	95,8	51
Read at least one word but below Grade 2 benchmark	52,3	28,4	4,2	40,1
Reached Grade 2 benchmark but not Grade 3	3,7	22,9	0	6,8
Reached Grade 3 benchmark and higher	2,8	45	0	2,1
Total (N)	218	218	192	192

In Table 7, we pooled together the data across the different years (2018-2023) to calculate the percentage of learners reaching each of the DBE benchmarks. At the beginning of each year, approximately 41 percent of WSS Grade 2 learners were non-readers and 52 percent could read at least one word but were below the Grade 2 DBE benchmark. The remaining few learners had reached the Grade 2 or 3 benchmark. By the end of the year, only 4 percent of learners were non-readers, 29 percent could read at least one word but were below the Grade 2 benchmark, 23 percent reached the Grade 2 benchmark but not the Grade 3 one and an impressive 45 percent could reach the Grade 3 benchmark. ***This means that over the course of a year nearly half of the WSS learners were exceeding expectations and performing at a grade level above where they should be, despite the vast majority being below grade-level to start.*** In contrast, nearly all (96%) non-WSS learners were non-readers at the beginning of the year and just over half (51%) were non-readers at the end of the year. This vast difference in achievement at the beginning of the year is expected given the selection of higher performing learners into the programme. By the end of the year, 40 percent of non-WSS learners could read at least 1 word but were below the Grade 2 benchmark, and less than 10 percent were reaching the Grade 2 or 3 benchmark.

Grade 3

Grade 3 learners who participated in WSS gained between 30 and 40 WCPM over the space of a year in 2019, 2021 and 2023. While these gains are smaller than those made by the Grade 2s, they are still large. Gains were close to 40 WCPM in 2019, however, likely due to Covid-19, they dropped by nearly

10 WCPM in 2021. In 2023, learners started to recover and were gaining 34 words. The difference between the WSS and non-WSS learners was a lot smaller for the Grade 3s than for the Grade 2s. The non-WSS learners gained approximately 25 words in 2019 and 2021. In 2021, this was only 6 words below those in WSS. Unexpectedly, the performance gains of non-WSS learners dropped substantially in 2023 to 6 words. In this year, their gains are nearly 30 words below those in WSS. This result may be a reflection of the fact that a large percentage of non-WSS learners were not tested at the beginning of the year. (22 learners have an initial score and 53 learners have an end score). It is also necessary to note that in 2023, ten of the top performers were taken out of WSS and attended a reading lesson which included independent reading and library once a week. These learners were excluded in the sample below.

Figure 4: Average ORF gain by year, St Mary's Grade 3

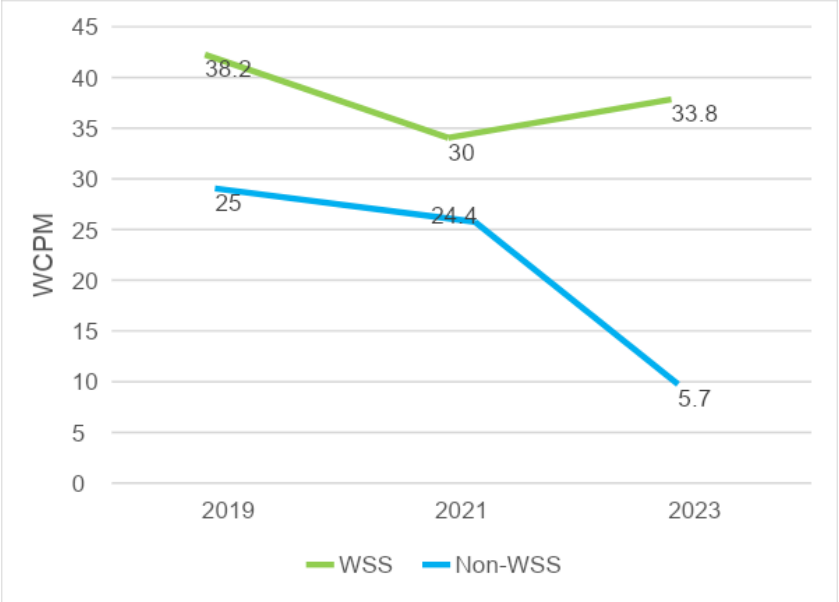


Table 8: Percentage of St Mary's learners reaching DBE EFAL benchmarks (2019, 2021, 2023), Grade 3

	WSS (%)		Non-WSS (%)	
	Initial WCPM	**End WCPM**	**Initial WCPM**	**End WCPM**
Non-reader	1,2	0	40	16
Read at least one word but below Grade 2 benchmark	39	3,7	26	26
Reached Grade 2 benchmark but not Grade 3	23,2	9,8	10	18
Reached Grade 3 benchmark but not Grade 4	29,3	31,7	7	9
Reached Grade 4 benchmark and higher	7,3	54,9	17	31
Total (N)	82	82	100	100

At the beginning of 2019, 2021, and 2023, only 1 percent of WSS learners were non-readers, 39 percent could read at least one word but were below the Grade 2 benchmark, 23 percent had reached the Grade 2 benchmark but not the Grade 3 benchmark, 29 percent had reached the Grade 3 benchmark but not the Grade 4 benchmark and 7 percent had reached the Grade 4 benchmark. By the end of the year, none of these learners were non-readers, only 4 percent could read at least one word but were below the Grade 2 benchmark, 10 percent had reached the Grade 2 benchmark but not the Grade 3 benchmark, 32 percent had reached the Grade 3 benchmark and not the Grade 4 benchmark and 55 percent had reached the Grade 4 benchmark. ***Similar to the Grade 2s, approximately half of the Grade 3s were performing above their expected reading level by the end of the year and over 85% were on track, despite the majority starting out below grade-level***. In contrast, a large 40 percent of non-WSS learners were non-readers at the beginning of the year and this only decreased to 16 percent by the end of the year. At the beginning of the year, 26 percent could read at least one word but had not reached the Grade 2 benchmark, 10 percent had reached the Grade 2 benchmark and not the Grade 3 benchmark, 7 percent could reach the Grade 3 benchmark but not the Grade 4 benchmark, and a surprisingly higher 17 percent reached the Grade 4 benchmark. By the end of the year, 26 percent of learners could read but had not reached the

Grade 2 benchmark, 18 percent reached the Grade 2 benchmark but not the Grade 3 benchmark, 9 percent had reached the Grade 3 benchmark but not the Grade 4 benchmark and 31 percent reached the Grade 4 benchmark. This means that by the end of the year 40 percent of non-WSS learners were on track compared to 87 percent of WSS learners.

Grade 4

With the exception of 2020, there are large differences in WCPM gains for WSS and non-WSS Grade 4 learners. In 2020, again, likely due to Covid-19, WSS learners only gained 9 words whereas non-WSS learners gained 6 words. In 2018, 2019, 2022, and 2023, WSS learners gained approximately 30 words. The gains for non-WSS learners in these years ranged from 5 words to 17 words. On the whole, differences between WSS and non-WSS ranged between 10 and 20 words. The largest difference between the two groups was 25 words in 2018. It is encouraging that even when WSS only ran for half a year in 2017, WSS learners gained 17 words which was 11 words higher than the non-WSS learners.

Figure 5: Average ORF gain by year, St Mary's Grade 4

Table 9: Percentage of St Mary's learners reaching DBE EFAL benchmarks (2018-2023), Grade 4

	WSS (%)		Non-WSS (%)	
	Initial WCPM	**End WCPM**	**Initial WCPM**	**End WCPM**
Non-reader	0	0	30,8	24,7
Read at least one word but below Grade 2 benchmark	6,3	0	32,4	25,8
Reached Grade 2 benchmark but not Grade 3	15,6	5,9	17	17,6
Reached Grade 3 benchmark but not Grade 4	36,1	13,8	14,8	16,5
Reached Grade 4 benchmark and higher	42	80,3	4,9	15,4
Total (N)	269	269	182	182

At the beginning of the year, there were no non-readers who participated in WSS and only 6 percent could read at least one word but had not reached the Grade 2 benchmark. 16 percent had reached the Grade 2 benchmark but not the Grade 3 benchmark, 36 percent had reached the Grade 3 benchmark but not the Grade 4 benchmark and 42 percent were already on track and had reached the Grade 4 benchmark. By the end of the year, the percentage of learners who were on track doubled. Only 14 percent of learners had reached the Grade 3 benchmark but not the Grade 4 benchmark and an even lower 6 percent had reached the Grade 2 benchmark but not the Grade 3 benchmark. In contrast, a large percentage of non-WSS learners were non-readers at the beginning (31 percent) and the end of the year (25 percent). At the beginning of the year, 32 percent could read but were below the Grade 2 benchmark and this was 26 percent by the end of the year. Approximately 17 percent of learners had reached the Grade 2 but not the Grade 3 benchmark at both periods. This figure was approximately 15 percent for those who reached the Grade 3 benchmark but not the Grade 4 benchmark. Only 5 percent of learners were on track at the beginning of the year and this increased to 15 percent by the end of the year. On the whole, progress for non-WSS learners was slow.

Tables 7-9 show marked improvements in the proportion of learners reaching DBE benchmarks over the course of a year across Grades 2-4 with WSS learners making substantially bigger gains than non-WSS learners. As already discussed, causal inferences cannot be drawn from descriptive statistics. Furthermore, it is clear from this analysis that WSS learners start out ahead of non-WSS learners, indicating a substantial selection bias into the program. However, ***the magnitude of the gains seen in WSS participants are so substantial that even with these caveats we can say that this descriptive analysis lends evidence to the efficacy of the WSS programme.***

5.2.3. *Citywide test results*

In 2023, Grade 4 learners in different schools in Makhanda participated in a reading test. A sample of these learners was tested in ORF. Figure 6 compares the average ORF score for each of the fee-exempt Quintile 1-3 schools that participated in the test, of which one is St Mary's. The results indicate that St Mary's learners outperformed the learners at two of the schools (S and E), and are only 2 decimal points behind the learners at School T. Figure 7 displays the distribution of scores for each of the four schools. A larger percentage of St Mary's learners achieved higher WCPM scores than the other schools and none of them were non-readers. School T had one learner that achieved a WCPM score of 160 which would explain their higher mean score. In contrast, the highest performer in St Mary's was reading 139 WCPM. In terms of the percentage of learners reaching the Grade 3 and 4 DBE benchmarks, St Mary's outperformed the other schools: 74 percent of learners reached the Grade 3 benchmark and 63 percent reached the Grade 4 benchmark. While a similar percentage (73) of learners in School E reached the Grade 3 benchmark, a lower percentage (44) reached the Grade 4 benchmark. We do not test whether St Mary's is statistically different to these schools given the small sample size of four.

Figure 6: Average ORF score in Q1-3 English schools, Makhanda citywide reading test

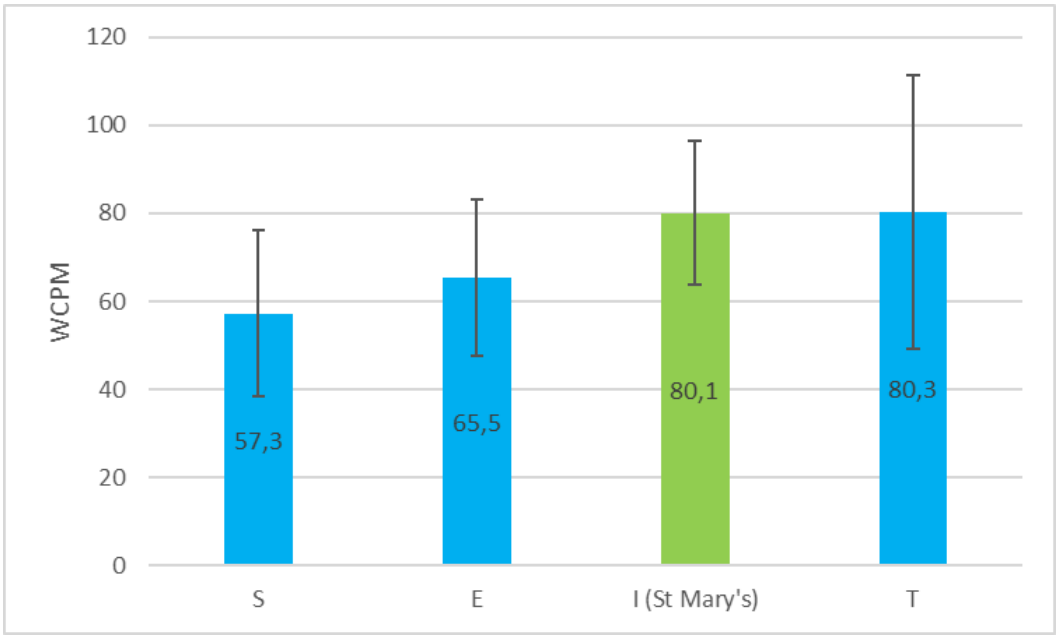


Figure 7: Kernel density of ORF scores in Q1-3 English schools, Makhanda citywide reading test

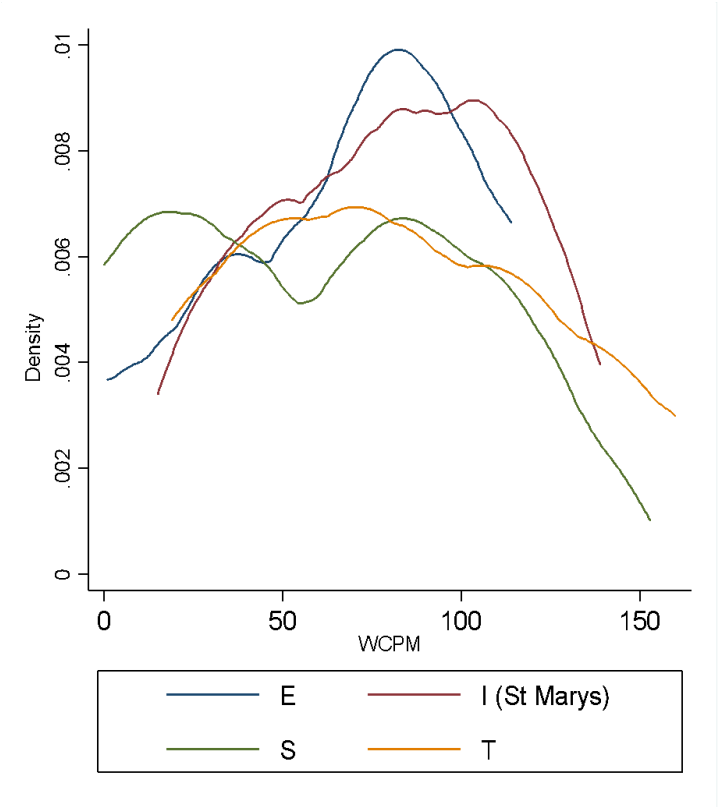
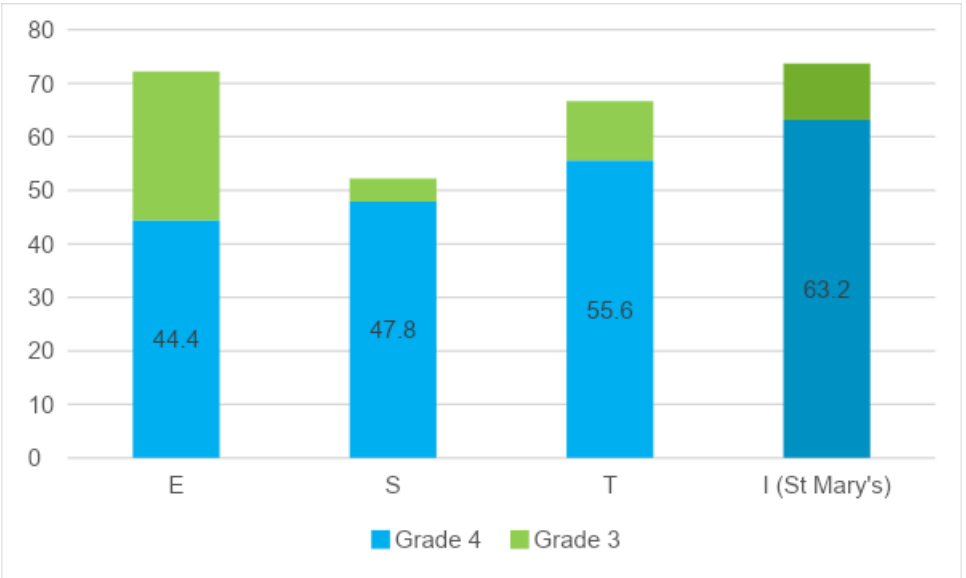


Figure 8: Percentage of learners reaching Grade 3 and 4 DBE benchmarks in Q1-3 English schools, Makhanda citywide reading test



While the DIBELS descriptive analysis showed large learning gains for WSS participants, the comparison to similar schools in Makhanda suggests that St Mary's is not unique. The lack of stand-out results in contrast to that seen in DIBELS may be due to the fact that the average St Mary's results pertain to all learners in the Grade, not just WSS participants.

5.2.4. Regression Analysis

We ran standard regression models to predict yearly changes in WCPM against participation in the WSS programme. We controlled for initial WCPM and made allowance for a different relationship between initial WCPM and gains in WCPM between programme participants or not with the use of an interaction term. We ran the full model including all programme participants and non-participants, as well as restricted models only including learners with similar initial WCPM scores.

In the case of Grade 2, we restricted the model so that only those who were 1, 2, 5 and then 10 WCPM away from the "centre point" were included in the analysis. In the case of Grades 3 and 4, we restricted it so that only those who were 5, 10, 20 and 25 WCPM from either direction of the "centre point" were included in the analysis. While using a center point is ideal, and the smaller the range around it the better, it must be noted that every restriction decreases the sample size available and limits our ability to detect significant effects. The results of the analysis are displayed in Table 10 with the full models available in Appendix 5.

The model predicts that after controlling for a learner's WCPM at the start of the academic year Grade 2 learners who do not participate in the program gain 11 words per year. Grade 2 learners who participated in the WSS gained 28 *more* words within a year, for a total gain of 39 words per year. This difference is statistically significant at a 99% level. When the sample is restricted to similar learners, the difference is slightly smaller (23-25 more words gained) but remains statistically significant at a 99% level. ***The results show that participation in WSS statistically significantly increases the learning gains a Grade 2 learner makes within a year.***

The model predicts that after controlling initial WCPM Grade 3 learners who do not participate in the program gain 22 words per year. Grade 3 learners who participated in the WSS gained 19 *more* words within a year, for a total gain of 41 words per year. This difference is also statistically significant at a 99% level. However, when the analysis is restricted, the differences are no longer statistically significant, even at a 90% level.

The model predicts that after controlling for initial WCPM Grade 4 learners who do not participate in the program gain 11 words per year. Grade 4 learners who participated in the WSS gained 20 *more* words within a year, for a total gain of 31 words per year. This difference was also statistically significant at a 99% level. When the analysis was restricted to those that were 25 WCPM away from the "centre point" in either direction, WSS learners outperformed non-WSS learners by an average of 16 words. This difference was statistically significant at a 95% level. When the analysis was restricted to those that were 5, 10 or 20 WCPM away from the "centre point" in either direction, the differences were no longer statistically significant, even at a 90% level.

Overall, the results show that participation in WSS statistically significantly increases the learning gains a learner makes within a year. While we have slightly less stability in this result for Grade 3 and 4 as the robustness checks for Grade 3 and Grade 4 are not as consistent with the main results, this could be due to smaller sample sizes of learners with similar initial WCPM compared to Grade 2.

Table 10: Impact of WSS program in St Mary's by grade: Change in WCPM by program status

	All learners	±1 WCPM (Gr 2) ±5 WCPM (Gr 3,4)	±2 WCPM (Gr 2) ±10 WCPM (Gr 3,4)	±5 WCPM (Gr 2) ±20 WCPM (Gr 3,4)	±1 WCPM (Gr 2) ±5 WCPM (Gr 3,4)
	β (se)	β (se)	β (se)	β (se)	β (se)
Grade 2	27.98*** (2.12)	23.28*** (2.32)	23.10*** (2.32)	23.92*** (2.32)	24.85*** (2.28)
Grade 3	19.30*** (4.90)	-17.38 (49.18)	-17.75 (20.37)	-3.03 (9.64)	7.67 (7.78)
Grade 4	20.35*** (3.84)	11.46 (11.13)	3.93 (10.08)	12.88 (8.25)	15.74*** (5.89)

5.3. Observed Impact: Tantyi

In Tantyi, all learners in Grades 2-4 participated in WSS. The exception is the Grade 3 group in 2023 as learners had to be selected to participate in WSS this year due to larger class sizes. Similar to St Mary's, Tantyi learners are also tested in ORF at the beginning and end of the year. In Grade 2, learners are tested in isiXhosa (in some cases a few learners are tested in English, but we only looked at isiXhosa scores) and in Grades 3 and 4 they are tested in English. In this section, we will only present the descriptive statistics as we do not have a comparable group that did not participate in WSS for regression analysis.

5.3.1. *Summary of the data*

In this subsection, we present the Tantyi data that was used in our analysis. Every year, learners in Grades 2-4 were tested on ORF at the beginning and end of the year. Tables 11-13 present the sample sizes for the initial WCPM score (January of the current year) as well as the end WCPM score (November).

Table 11: DIBELS sample size by year, Tantyi Grade 2

	Initial WCPM	End WCPM
2018	July: 23	22
2020	22	19
2021	29	28
2022	26	27
2023	26	25

Table 12: DIBELS sample size by year, Tantyi Grade 3

	Initial WCPM	End WCPM
2020	19	18
2021	25	24
2022	24	23
2023	WSS: 20 Non-WSS: 11	WSS: 19

Table 13: DIBELS sample size by year, Tantyi Grade 4

	Initial WCPM	End WCPM
2020	9	7
2022	24	22
2023	24	-

We also present the sample sizes for the isiXhosa LoLT schools that participated in the Makhanda citywide test. These sample sizes refer to the number of learners that participated in the ORF test in isiXhosa.

Table 14: ORF tests per school, citywide Makhanda reading test in isiXhosa LoLT schools

School	Sample Size
B	9
D	18
F	31
G	17
J	19
K	9
L (Tantyi)	9
P	19
Q	27

5.3.2. *Descriptive findings*

In the next few subsections, we will explore how Tantyi learners progressed in average gain in ORF across the years, and we will also compare the percentage reaching each of the isiXhosa or EFAL benchmarks at the beginning and the end of the year.

Grade 2 - isiXhosa

From Figure 9 we can see that in 2018, Grade 2 learners gained 7 isiXhosa words between June and November. In 2020, when learners participated in WSS for the full year, this rose to 11 words. This doubled in 2021 to 23 words and then dropped again to 17 words in 2022.

Figure 10 illustrates that on average, half of the learners were non-readers at the beginning of 2020, 2021, and 2022. This dropped to 16% by the end of each of those years. At the beginning of the year, 30 percent of learners could read at least one word but they were below the DBE isiXhosa benchmark. 15 percent could reach the Grade 2 benchmark but not the Grade 3 benchmark and only 6 percent could reach the Grade 3 benchmark. By the end of the year, 27 percent of learners reached the Grade 2 benchmark but not the Grade 3 benchmark and 36 percent of learners reached the Grade 3 benchmark. ***This means a third of the learners were exceeding expectations at the end of the year and another third was on track, despite most starting as non-readers.***

Figure 9: Average ORF gain by year, Tantyi Grade 2 (isiXhosa)

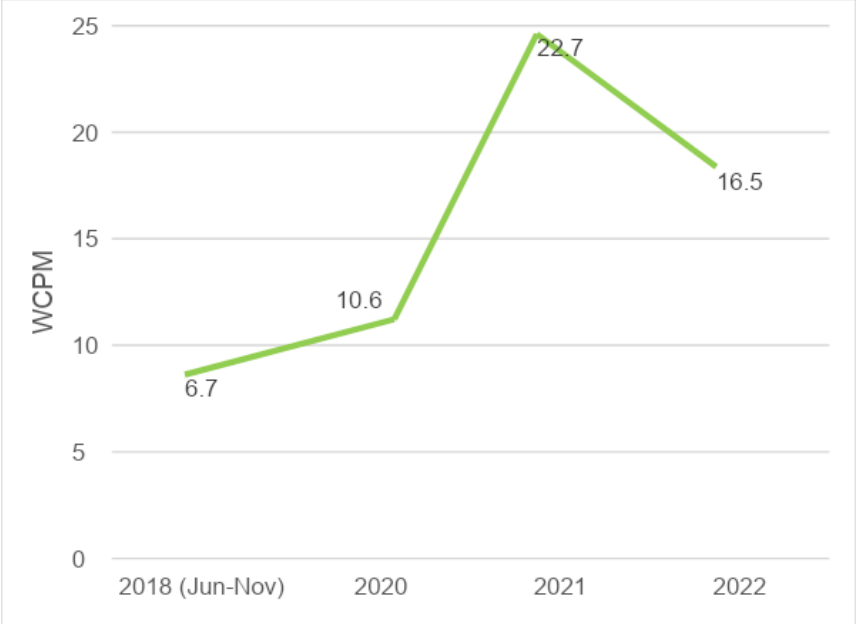
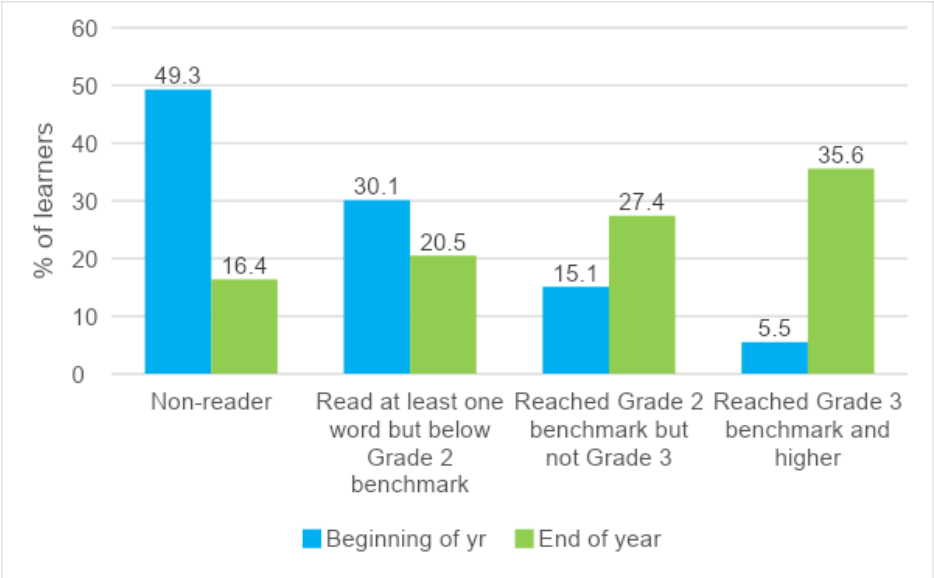


Figure 10: Percentage of Tantyi learners reaching DBE isiXhosa benchmarks (2020-2022), Grade 2

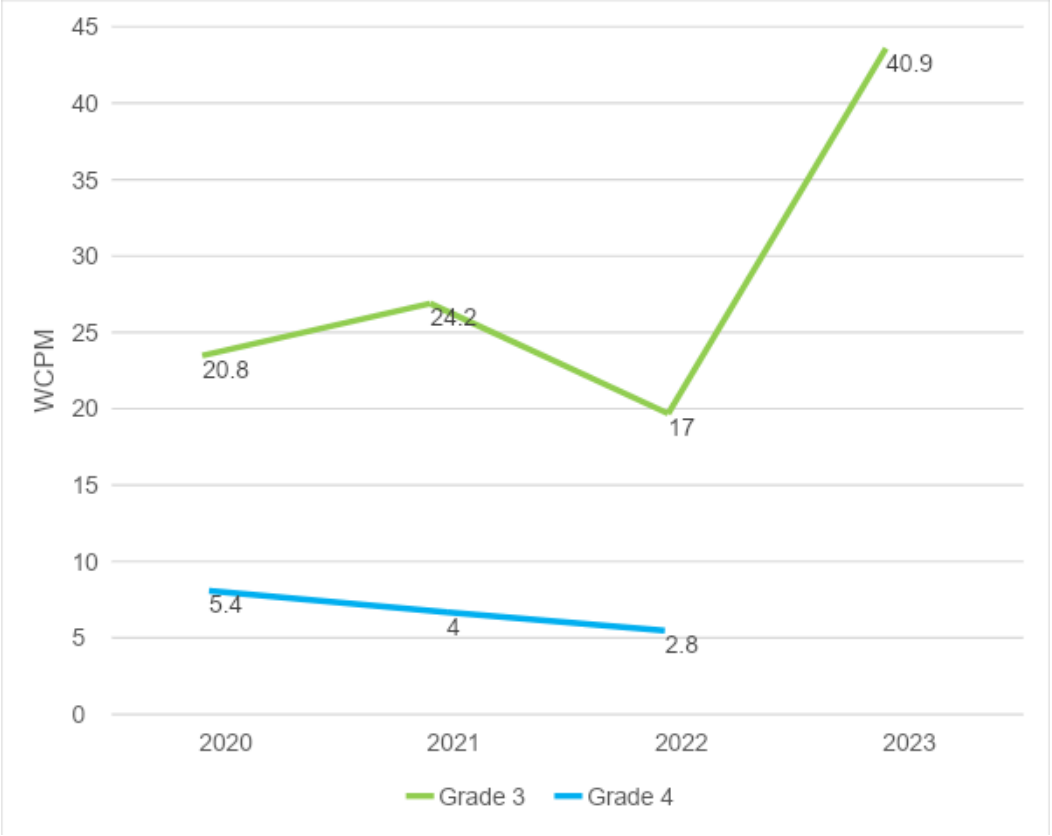


Grades 3 and 4 – EFAL

Figure 11 illustrates that between 2020 and 2022, Grade 3 learners gained more WCPM a year than Grade 4 learners. This may be due to diminishing returns in reading improvement as learners progress through grades, rather than the quality of WSS instruction. In the early grades, learners typically experience rapid growth in reading skills as they learn fundamental decoding and comprehension strategies. However, as they advance to higher grades, the rate of improvement may slow down if they reach a level of proficiency where further gains become more incremental. In 2020, Grade 4 learners gained 5 words, in 2021 they gained 4 words and in 2022, they gained 3 words. In contrast, Grade 3 learners gained 21 words in 2020, 24 words in 2021, and 17 words in

2022. A huge jump occurred in 2023 with learners gaining an average of 41 words over the space of a year. This jump is likely due to selection bias (as only the top learners were selected for WSS in this year).

Figure 11: Average ORF gain by year, Grade 3 and 4 (EFAL)



When we calculated the percentage of Grade 3 learners reaching each of the benchmarks, we separated learners who participated in 2020-2022 from those who participated in 2023. Between 2020 and 2022, all learners participated in WSS but in 2023, only learners that were selected into the programme participated in WSS. This means that the 2023 learners differ systematically from the 2020-2022 learners. As we observed, the 2023 learners gained double the amount of words that the 2020-2022 learners gained, and this is because there was a smaller percentage of non-readers that were selected into the programme in 2023.

Figures 12 and 13 show the percentage of Grade 3 learners who are reaching each of the DBE EFAL benchmarks. On average at the beginning of the years 2020-2022, 53 percent of Grade 3s were non-readers, 34 percent could read at least one word but they were below the Grade 2 benchmark, 8 percent had reached the Grade 2 benchmark but not the Grade 3 benchmark, 3 percent had reached the Grade 3 benchmark but not the Grade 4 benchmark and 2 percent had reached the Grade 4 benchmark. At the end of the year, only 14 percent of learners were non-readers, 38 percent could read at least one word but were below the Grade 2 benchmark, 23 percent had reached the Grade 2 benchmark but not the Grade 3 benchmark, 16 percent had reached the Grade 3 benchmark but not

the Grade 4 benchmark and 9 percent had reached the Grade 4 benchmark. This means that ***by the end of Grade 3, only one-quarter of learners were on track***. In 2023, however, when learners were selected into the programme, the results were more positive. At the beginning of the year, 37 percent of the learners were non-readers, but by the end of the year, all learners could read at least one word. Moreover, at the beginning of the year, only 16 percent of learners could reach the Grade 2 benchmark and 5 percent could reach the Grade 3 benchmark, yet by the end of the year, nearly half the learners could reach the Grade 4 benchmark, 60 percent could reach the Grade 3 benchmark, and 80 percent could reach the Grade 2 benchmark. As noted already, this improvement is likely due to the decision to select learners to form part of WSS in 2023 and may highlight the difficulty of teaching learners at the tail of the distribution, and equally, the dire need for remediation in schools.

Figure 12: Percentage of Tantyi learners reaching DBE EFAL benchmarks (2020-2022), Grade 3 full participation

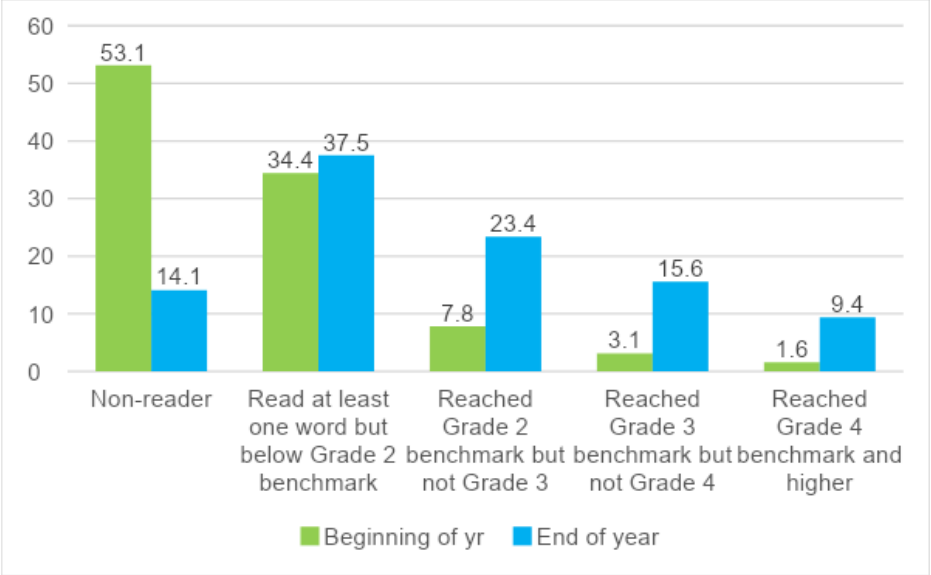
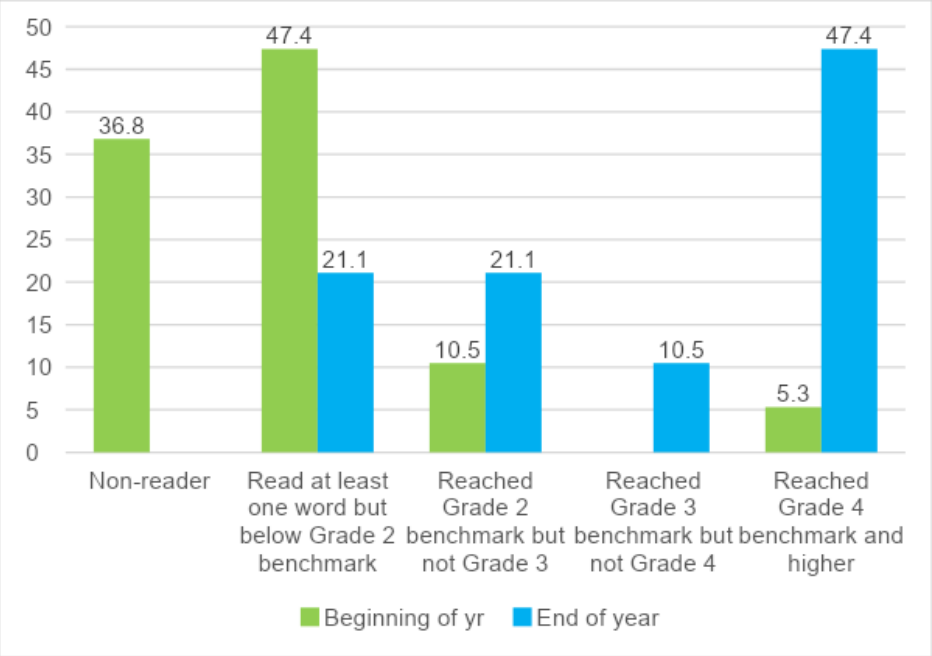
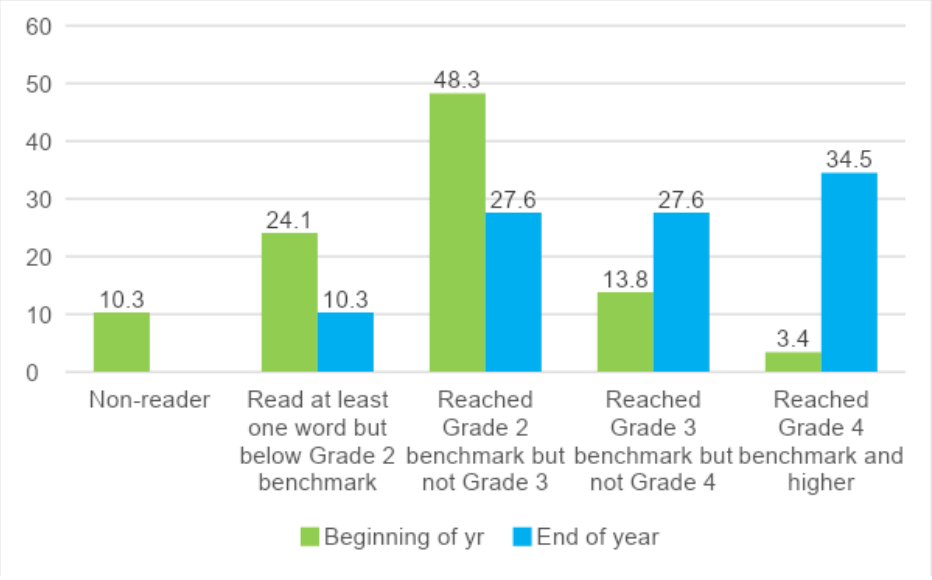


Figure 13: Percentage of Tantyi learners reaching DBE EFAL benchmarks (2023), Grade 3 with selection



In Grade 4, 10 percent of learners were non-readers at the beginning of 2020 and 2022 but by the end of the year, every learner could read. This is shown in Figure 14. At the beginning of the year, 24 percent could read at least one word but were below the Grade 2 benchmark, 48 percent had reached the Grade 2 benchmark but not the Grade 3 benchmark, 14 percent could reach the Grade 3 benchmark and not the Grade 4 benchmark, and 3 percent could reach the Grade 4 benchmark. At the end of the year, only 10 percent had not reached the Grade 2 benchmark, 28 percent had reached the Grade 2 benchmark but not the Grade 3 benchmark and another 28 percent could reach the Grade 3 benchmark but not the Grade 4 benchmark. ***By the end of the year, only 35 percent had reached the Grade 4 benchmark and were on track.***

Figure 14: Percentage of Tantyi learners reaching DBE EFAL benchmarks (2020 and 2022), Grade 4



Figures 12-14 show marked improvements in the proportion of learners reaching DBE benchmarks over the course of a year. Without a comparison group it is difficult to attribute this learning to the WSS program but results show that learners are making considerable gains each year. However, these gains are not as stark as those seen in St Mary's, with many Tantyi learners still falling behind. We cannot know why the results in Tantyi are different to those in St Mary's - there is no way to statistically answer this question. It may be a language effect, an individual school effect, or it may be due to the practice of selecting certain learners for the programme. The latter hypothesis is supported by the higher average gains made by Grade 3 learners when only the top are selected in 2023.

5.3.3. *Citywide test results*

In 2023, Tantyi also participated in the citywide Makhanda reading test for Grade 4 learners. Compared to the other isiXhosa schools, Tantyi performed the best with a mean score of 37,6 WCPM. There are no statistically significant differences between schools at a 95 or 90 percent level, however. Tantyi was the only school where every learner could reach the Grade 2 benchmark. The next best school only had 79 percent of its learners reaching this benchmark. A lower 44 percent of Tantyi learners reached the Grade 3 benchmark which means a substantial portion of learners are off track. Compared to the other schools, however, they are one of the top performers in this regard. Only two schools have a larger percentage of on-track learners.

Figure 15: Average ORF score in Q1-3 isiXhosa schools, Makhanda citywide reading test

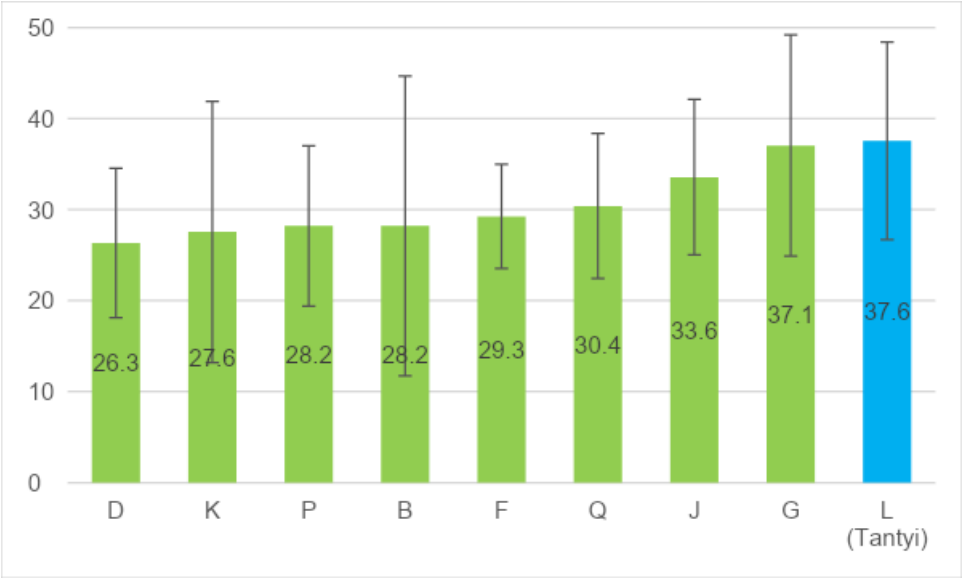
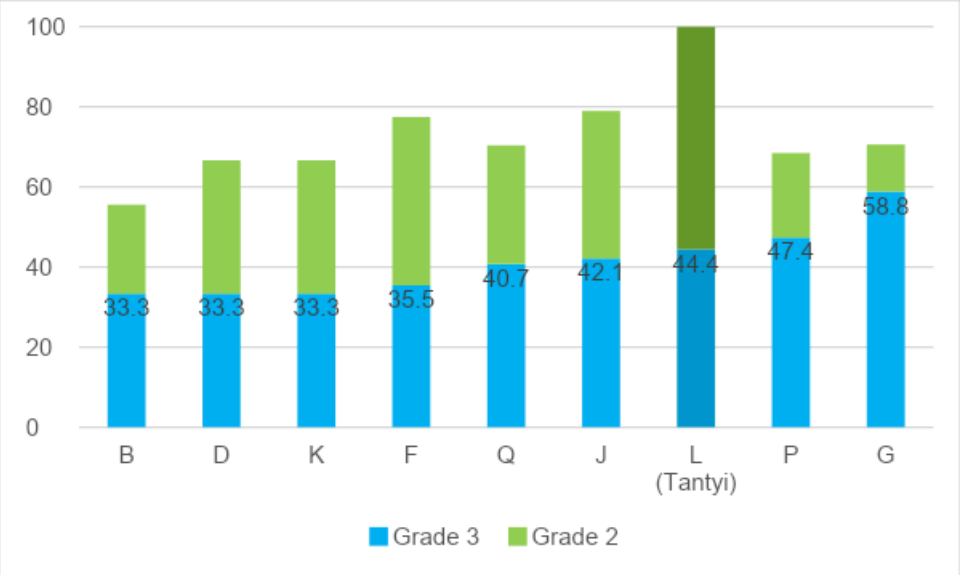


Figure 16: Percentage of learners reaching Grade 2 and 3 isiXhosa DBE benchmarks in Q1-3 isiXhosa school, Mahkanda citywide reading test



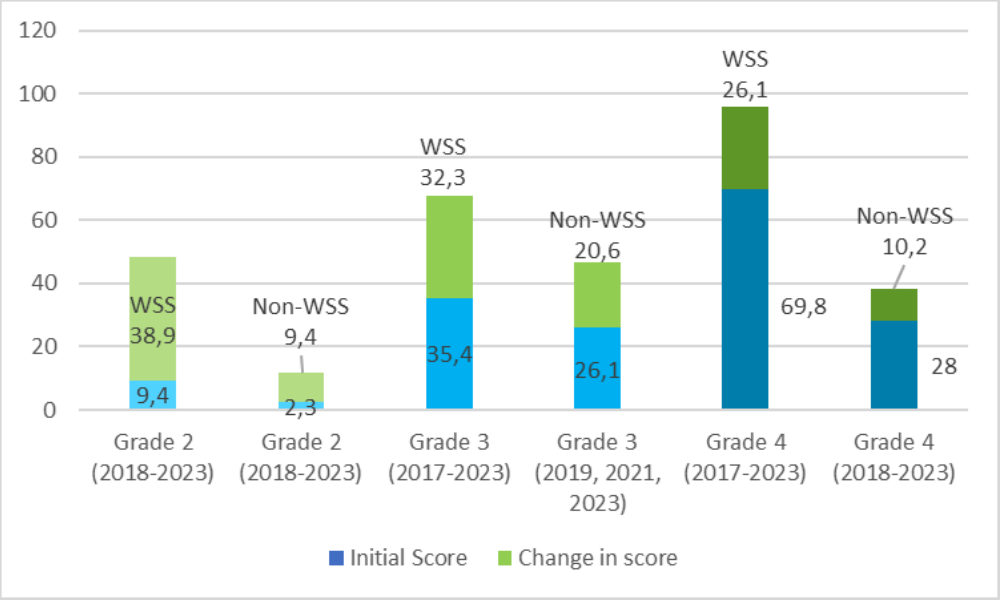
5.4. Summary of quantitative results

In St Mary's, WSS learners outperformed non-WSS learners in all three grades. Normal development of learners usually shows diminishing returns over time as learners reach proficiency, with Grade 1 and 2 seeing the largest gains in reading achievement. This normal phenomenon is observed in WSS learners. In Grade 2, WSS learners gained approximately 40 words in a year, in Grade 3, they gained approximately 30 words and in Grade 4 they gained in the 20s or 30s. These results are summarised in Figure 17 below. During Covid, gains were smaller for Grade 2 and 4 learners, however, post-covid, average scores have returned to previous levels. Overall the program meets its goal of a gain of 25 words in a year across all grades.

In terms of the percentage of WSS learners reaching the DBE EFAL benchmarks, two-third of the Grade 2s reached the Grade 2 benchmark, over 85 percent of Grade 3s reached the Grade 3 benchmark and approximately 80 percent of Grade 4s reached the Grade 4 benchmark. Compared to other Q1-3 schools, St Mary's as a whole is the second-best average performer and they have the largest percentage of Grade 4 learners reaching the Grade 3 (74%) and 4 (63%) benchmarks. St Mary's has no non-readers. The findings of the descriptive statistics suggest that the impact of WSS is positive, and the regression results confirm this.

The regression results show that WSS Grade 2 learners *gain* an average of 28 *more* words than non-WSS Grade 2 learners over a year, WSS Grade 3 learners *gain* an average of 19 *more* words than non-WSS Grade 3 learners over a year, and WSS Grade 4 learners *gain* an average of 20 *more* words than non-WSS Grade 4 learners. Robustness checks consistently confirm this result for Grade 2 learners. Robustness checks for Grade 3 learners did not detect significant results, however, this may be because there was no clear centre point in this grade and the checks reduced sample size. Robustness checks for Grade 4 learners were mixed.

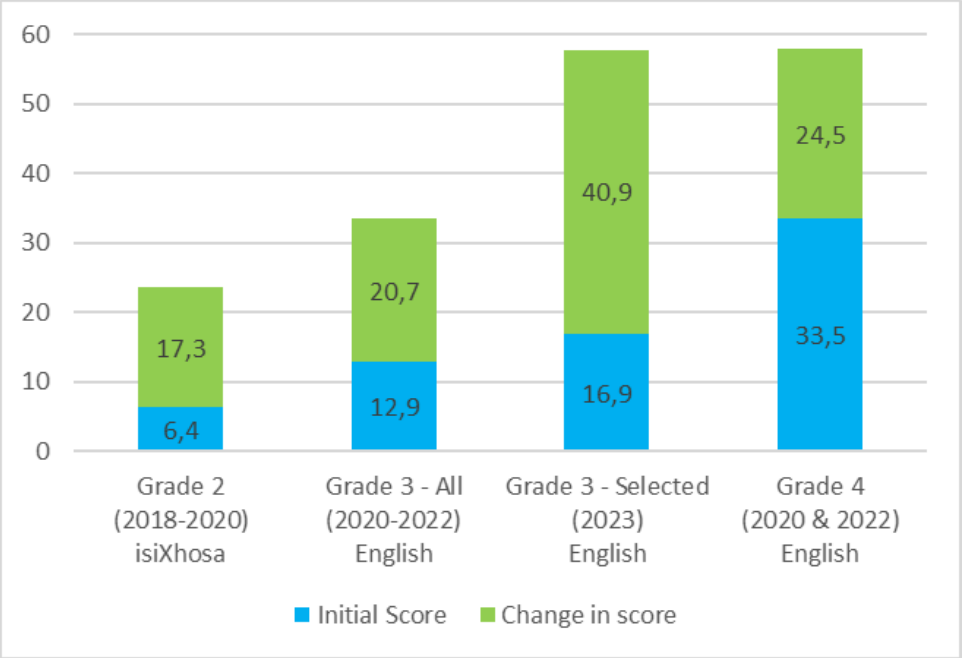
Figure 17: Average initial and change in WCPM for WSS and non-WSS learners by grade



In Tantyi, all learners participated in WSS with the exception of the Grade 3s in 2023 which used selection. Unlike St Mary's, this means that we cannot compare learners. When averaging across 2020-2023 we see that Grade 2 learners gain on average 17 isiXhosa words. This is above the program goal of 12 isiXhosa words indicating success of the program by this measure. Due to the different nature of the WSS programme in 2023 for Grade 3 learners, we separated the average score in this year from the other years. Grade 3 learners gained on average 21 EFAL words when all learners participated in the programme (2020-2022) and on average 41 EFAL words when learners were selected into the programme (2023). Grade 4 learners gained on average 25 EFAL words (2020 and 2022). Performance in both of these grades meet the program goal of 25 English words, indicating success of the program in Grades 3 and 4. These results are summarised in Figure 18 below.

In terms of isiXhosa and EFAL DBE benchmarks, two thirds of the Grade 2s reached the isiXhosa Grade 2 benchmark. In Grade 3, one quarter of the learners reached the Grade 3 EFAL benchmark between 2020 and 2022 and 60% of the learners reached it in 2023. In Grade 4, 35 percent of the Grade 4 learners reached the Grade 3 benchmark. Compared to the eight other isiXhosa schools, Tantyi has the highest average score. It is the only school where all Grade 4 learners reached the Grade 2 benchmark (the next best school had 79% of learners reaching it) and it was the third best school in terms of percentage of learners reaching the Grade 3 benchmark (44%). Overall, the results reveal that while Tantyi learners are performing well in comparison to similarly-resourced schools, there is still potential for growth. One third of learners in Grade 2 are not reaching the isiXhosa Grade 2 benchmark, three-quarters of Grade 3s are not reaching the Grade 3 EFAL benchmark and 65% of Grade 4s are not reaching the Grade 4 EFAL benchmark.

Figure 18: Average initial and change in WCPM for all learners by grade



5.5. Data Collection Considerations

Going forward, it is recommended that all WSS and non-WSS learners in both schools are tested in ORF at the beginning and the end of the school year. While a significant portion of learners were tested during this time period, the validity of the results would be improved if all learners were tested. For example, for Grade 3 in St Marys, we could only include the years 2019, 2021, and 2023 in the analysis because non-WSS learners were not tested at the beginning of 2017 and 2022. In Tantyi, non-WSS Grade 3 learners and all Grade 4 learners were not tested at the end of 2023.

We have taken every measure to limit selection bias in the statistical analysis above and believe that there is demonstrated evidence that the WSS programme leads to better learning outcomes for participants. However, if WSS wishes to strengthen the evidence for this programme and more accurately gauge the magnitude of impact, they will need to design it in such a way as to remove selection bias from the intervention. This means either introducing random selection into the programme or consulting an evaluation specialist to advise on designing a phased-in approach.

Random selection would eliminate the selection bias due to intentional selection of higher-performing learners. Of course, the programme selects higher-performing learners intentionally for what is believed to be more effective and suitable for the intervention, and this may be deemed to be more important than increasing statistical rigour.

Note that selecting higher-performing learners will always lead to a higher magnitude of impact than random selection, due to the inherent potential of higher-performing learners. However, lower magnitude of impact is not necessarily the same as less efficacy. In general, lower magnitude of impact on learners at the tail of the distribution could be argued to be as or more effective than a higher magnitude of impact with higher-performing learners, since the former are often overlooked

by the school and learner programmes alike. However, in WSS's case concerns have been raised about the suitability of the program for learners at the tail end of the distribution.

Phased-in participation can be a compromise between random selection and intentional selection, and it can allow evaluation in cases where all learners are programme participants, such as in Tantyi. However, phased-in participation has important programmatic and ethical considerations. Phased-in participation is when learners begin participation at different stages, such as in different school terms, which allows the timing of participation to become the random variable. Unfortunately, this means that some learners will get less time with the programme than others, and this can make the programme less beneficial overall.

6. Process Evaluation

6.1. Key Areas of Success

Overall, from the qualitative data gathered, it can be said that the WSS programme effectively addresses the literacy needs of learners, fosters a supportive learning environment, and engages stakeholders to ensure holistic development. Its success lies in its tailored approach, focus on data-driven decision-making, and commitment to collaboration and innovation. The following are key aspects of the programme that work:

Structured approach: The programme's structured approach to teaching is seen to be effective and successful at ensuring that children can read fluently.

Small group instruction: Working with small groups of learners (12 learners per group) allows for personalised attention, real connection with teachers and tailored instruction based on individual learning needs. This setup enables teachers to effectively address each learner's abilities and challenges. In addition, learners who are slower readers are not pressured to work at the level of top readers, and fast readers are not held back by slower readers.

Assessment and selection process: The programme uses assessments, such as ORF (Oral Reading Fluency) assessments, to select learners and measure progress. This data-driven approach helps identify areas for improvement and ensures that interventions are targeted and effective.

Reflective approach: WSS practices continuous reflection during program implementation to understand what is working well, and what is not working, and to change or stop what is not working.

Teacher support and involvement: WSS teachers actively assist learners with both isiXhosa and English reading literacy, engaging them in interactive and creative teaching methods. They also involve parents through home visits and encourage participation in their children's education.

Infrastructure support: Beyond literacy instruction, WSS invests in school infrastructure, such as renovating classrooms, which benefits the entire school community even after the programme ends.

Flexibility and creativity: Teachers have the freedom to adapt teaching methods and activities to suit learners' needs, ensuring engagement and effective learning. This flexibility allows for innovative approaches tailored to individual learners.

Parental involvement and satisfaction: Parents report observable improvements in their children's literacy skills and express appreciation for the programme's impact on their children's confidence and academic performance. Their involvement in parent meetings and events reflects their support for and satisfaction with the programme.

Capacity building and collaboration: The programme provides capacity-building opportunities for both teachers and volunteers, fostering personal and professional growth. Collaboration with partner schools and stakeholders enhances the programme's effectiveness and sustainability.

6.2. Areas for improvement

Despite its successes, the WSS programme faces certain limitations that warrant attention. Inclusivity emerges as a key concern, as the programme's selective nature leaves out struggling learners who may also benefit from the program. Additionally, disruptions in classrooms when learners return from WSS sessions pose challenges to maintaining a conducive learning environment for non-selected learners. Capacity constraints, adaptation to changing circumstances, and access for vulnerable learners are other areas where the programme can improve to better meet the needs of the school community.

Stability and continuity: At Tantyi, the programme faces challenges related to fluctuations in the number of learners enrolled year-to-year and concerning learner turnover due to family relocation, affecting the continuity of participation, and potentially hindering long-term progress. Moreover, fluctuations in enrolment numbers impact the configuration of groups, affecting the ideal composition of reading ability groups. At St. Mary's, the learner enrolled numbers are stable with minimal attrition.

Selection process challenges: At St Mary's, challenges arise from the selection process, including the potential for children not selected to feel left out. Concerns about, and criticism regarding WSS learner selection process and criterion is that it focuses on and leads to the selection of learners who are already good at reading at the expense of learners whose reading skills are poor. Interviewed parents and the two site schools' staff have made the argument that WSS needs to revise their model selection criteria or reach all the children in the grades to not disadvantage the learners in the low-set results. Stakeholders were however pleased with how transparent WSS is in their selection criteria.

Disruption and adjustment: There were initial disruption challenges caused by classroom pull-outs, especially for Grade 1 learners. However, over time, children adjust to these activities, suggesting that while initial adjustment may be challenging, it becomes less disruptive with time. The program has adapted to minimise disruption. For example, at St. Mary's, the WSS programme decided not to include Grade 1 learners in the programme seeing that it was too much of an adjustment for the Grade 1 learners to move between two classroom environments.

Congested site: St. Mary's is regarded as a learner programme congested site, meaning that there are multiple learner programmes in the same school. Apart from the WSS program there's another reading literacy intervention called Reading Eggs at St. Mary's. All learners in the school (grades R to 7), participate in the Reading Eggs program. This has led to the WSS program conceding some of its time with the learners. Since the implementation of the Reading Eggs program in 2022, WSS teachers see the learner groups on Monday - Thursday; four (4) instead of five (5) days a week as was the case before. The Reading Eggs programme may fill the technological gap, since learners use tablets to do phonics and comprehension activities. However, the costs and benefits of replacing intervention time between Reading Eggs and WSS has not been evaluated.

Special needs: There is potential to better support the needs of learners with special conditions, such as disabilities, learning difficulties, and Fetal Alcohol Syndrome. Stakeholders requested that WSS consider integrating specialised support within the program, providing teachers with training or collaborating with other resources to ensure these learners receive the assistance they require. This will also enhance WSS's ability to include poorer-performing learners in the program. However, stakeholders were pleased that learners with visual impairments are not excluded from the program. These learners are identified and assistance is arranged by WSS.

Psychological support: Stakeholders express a strong interest in having someone with psychology training in the program.

Expand capacity: It was suggested that the programme explore options for expanding capacity by hiring more teachers and acquiring additional classrooms or space. This would allow the program to reach more children and provide support to a larger number of learners in need.

St Mary's Principal: *"There's a need to really consider that most of the children who need the WSS programme reading literacy support are not getting the intervention. Some motivation must be made to the funders to consider the lower bracket and design it to accommodate such learners in a programme."*

Parent: *"I'd like to include more learners and have more learners benefit from the programme albeit that the selection approach is justified. Need more learners to benefit from the programme knowing the school situation."*

WSS teachers: "*Getting a 3rd teacher is a matter of funding, appointing a 3rd teacher at Tantyi would mean participation of most, if not all, children in the grades which would close the gap that the programme creates for the unselected learners, which has a knock-on effect into the community, where parents become concerned that their children are not selected into the programme."*

Teacher: *"There's nothing I don't like, I am satisfied with the WSS programme. I Don't have anything that I dislike but if the WSS can also assist children with Alcohol Fetal Syndrome, I am the only remedial teacher I can't reach them all. The DBE doesn't help all the learners with this problem in terms of receiving specialised support."*

Principal: *"The top achievers were benefiting more from the programme than the learners whose reading fluency was poor because the WSS program was not and didn't want to be seen as a remedial programme but as an enhancement and accelerated program. However, the bulk of St. Mary's learners would be deemed to be in the remedial basket. The challenge is that funders want to see stats that show progress and that the intervention is yielding results. This influenced the design approach the WSS program took, which meant that learners from the top to medium scores of the reading fluency assessments are selected for the programme. "*

Principal: *"The disruption of taking learners from the classroom for the WSS learning activities. When there's more than 1 group of learners pulled out for the day in the grade it can be disruptive nearly the whole day - the silver lining is that this negative is compensated for by the fact that the reading literacy skills are greatly improved by the program."*

Teacher: *"The WSS teacher who was also a psychologist also assisted in cases where psychological, and psychosocial support was needed. This great resource and benefit to the learners and school was lost when she left; it needs to be taken up again by having a person with psychology training in the program."*

WSS teachers: *"The aspect of psychosocial and psychological in the programme was lost when the psychologist WSS staff and teacher left the program, they played a critical role in arranging scholastic assessments for some of the learners and understood how to work with DSD regarding psychosocial support for the learners who face many challenges due to poor socio-economic conditions for families in the area. DSD processes have a lot of paperwork that the current teachers don't have time to attend to when learners need to be supported through this channel. [The WSS teacher trained in psychology] knew the admirative aspects of psychosocial support, and what is required by the Department of Social Development. The admin can be a lot to handle."*

7. Conclusion

The findings from both the quantitative and qualitative analyses provide a comprehensive understanding of the impact and effectiveness of the WSS programme at St. Mary's SC School and Tantyi Primary School.

Quantitatively, the data reveals that WSS learners at St. Mary's consistently outperformed non-WSS learners across all three grades in terms of ORF improvement. Despite variations in gains during the COVID-19 period, the programme has generally met its goal of a 25-word gain per year across all grades. Additionally, a substantial percentage of WSS learners at St. Mary's reached or exceeded the DBE EFAL benchmarks, positioning the school as one of the top performers among similar schools.

At Tantyi, the programme has also demonstrated success, with learners achieving gains in isiXhosa and EFAL that surpass programme goals. However, while these learners perform well compared to similarly-resourced schools, there is still room for improvement, as evidenced by the percentage of learners not reaching certain benchmarks. It is worth noting that when Grade 3 learners were selected into the programme in 2023, the average gains as well as the percentage of learners reaching benchmarks were higher than when all learners participated in the programme in 2020-2022. This is likely due to a selection bias.

Qualitatively, it is evident that the WSS programme has yielded substantial benefits for both schools, particularly in enhancing reading literacy, creating a supportive learning environment, and fostering stakeholder engagement for holistic development. Stakeholders across both schools recognise and appreciate the positive impact of the programme. Successful elements of the programme include infrastructure investment, parental involvement, professional development opportunities, teacher selection, curricula, teaching methods, improvements in literacy and small group instruction. Concerns that were raised include filling the psychologist's role (at Tantyi), expanding capacity to make the programme more inclusive (especially in St Mary's), providing greater support to those with special needs, and learner turnover issues at Tantyi. In addition, WSS has to compete with two other interventions at St Mary's, and this has resulted in the programme losing time with children.

Overall, both quantitative and qualitative findings affirm the positive impact of the WSS programme on learning and development at St. Mary's SC School and Tantyi Primary School. While successes are celebrated, the identified areas for improvement provide valuable insights for further enhancing the programme's effectiveness and ensuring continued positive outcomes for all learners involved.

8. Recommendations

We are pleased to present the results of this evaluation, as positive impact is rarely seen in this sector. We congratulate the WSS programme for their successes. For further development, WSS could consider the following recommendations:

- Ensure that all learners are tested twice annually to optimise future quantitative outcome

analysis

- Recruit teachers with a psychology background, or recruit a psychologist directly to support psychosocial development
- Provide additional training to teachers in how to deal with special needs, or recruit specialised teachers for this purpose
- Consider making the WSS curriculum transparent to partner school teachers and parents. However, note that the flexibility of the curriculum is consistently identified as a benefit, and transparency should not occur at the cost of this.
- Consider including technological aspects to the intervention if appropriate.
- Consider providing additional staff to include as many learners in the intervention as possible, with all learners participating as the ideal scenario for impact. However, note that this would limit the ability to pick up impact in future quantitative impact evaluations.
- Alternatively, in cases of partial participation, consider introducing random selection to limit selection bias in future impact evaluations. This would optimise evidence toward programme impact, but may have implications for programme efficacy if intentional selection of higher-performing learners is seen as an integral part of the programme.

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Appendix 1: Regression Analysis Method Change

Given that WSS intentionally selects higher performing learners, we are concerned about non-random selection biasing estimates of programme effectiveness upwards. We initially planned to implement a Regression Discontinuity Design (RDD) to more accurately discern the impact of the WSS programme. A RDD is a quasi-experimental research method used to evaluate the causal impact of an intervention or treatment. It leverages a naturally occurring cutoff point, such as a threshold score or eligibility criterion, to create a comparison group on either side of the cutoff. By comparing outcomes just above and below the threshold, researchers can estimate the causal effect of the intervention, assuming that individuals on either side of the cutoff are similar except for their treatment status. This design helps to minimise selection bias and provides more credible causal inferences compared to traditional observational studies.

We assessed the distribution of initial Oral Reading Fluency (ORF) scores for both groups (WSS and non-WSS) in each Grade and for each year. Unfortunately, we found no distinct cutoff point in the majority of cases.

Figure 19 below displays initial WCPM for Grade 4 learners in 2021. This is a good representation of an ideal case for an RDD. In this year, all learners in the programme could read more than 21 WCPM and every learner who was not in the programme read less than 21 WCPM. As one can see from Figures 20 and 21, this situation was not common. In some years and grades, distributions overlapped, and it was difficult to determine what the cutoff into the programme was. Consequently, we were unable to employ the RDD due to the absence of a clear threshold for comparison. One advantage of this is that we have an overlap in WSS and non-WSS initial WCPM scores, making learners more comparable.

Figure 19: An ideal case for RDD: Distribution of initial WCPM, Grade 4 2021

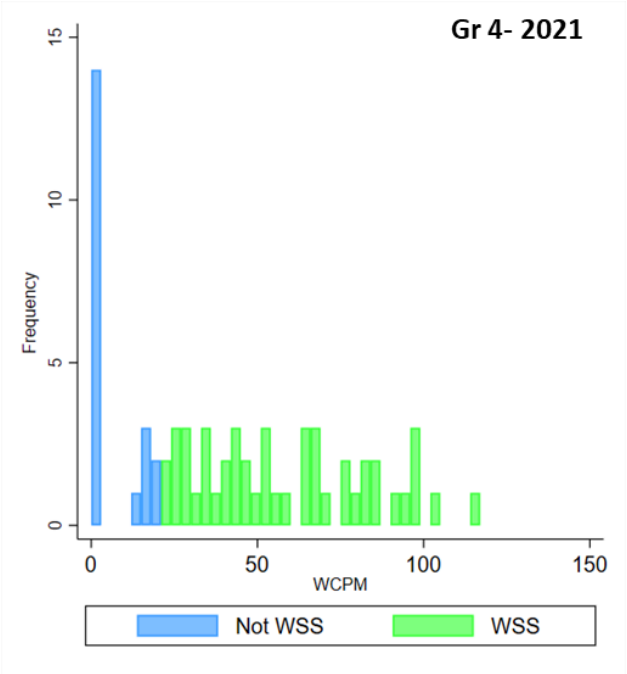


Figure 20: A nonideal case for RDD: Distribution of initial WCPM, Grade 3 2019 and 2021

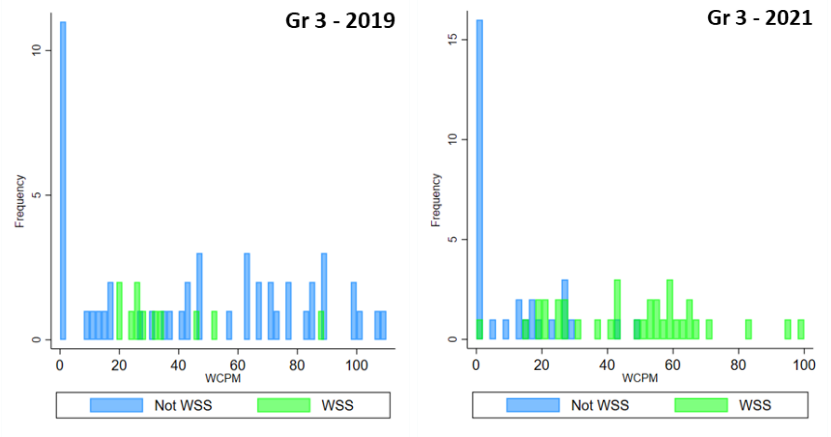
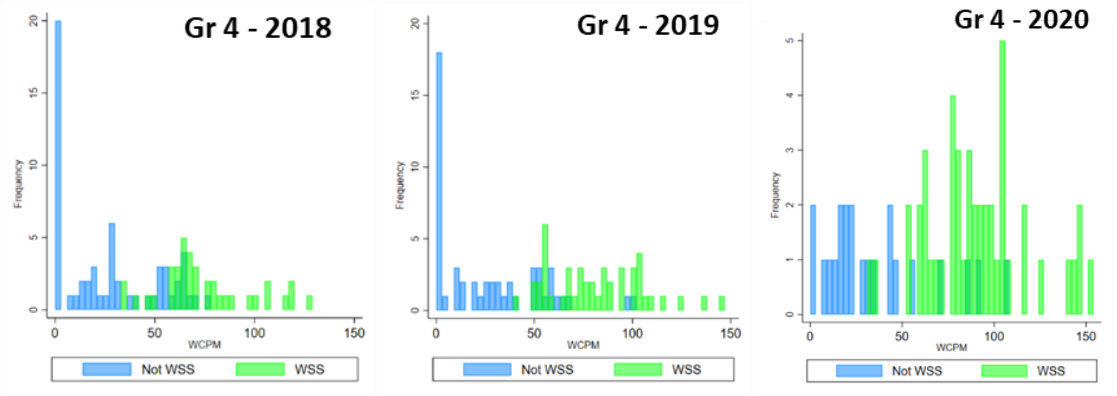
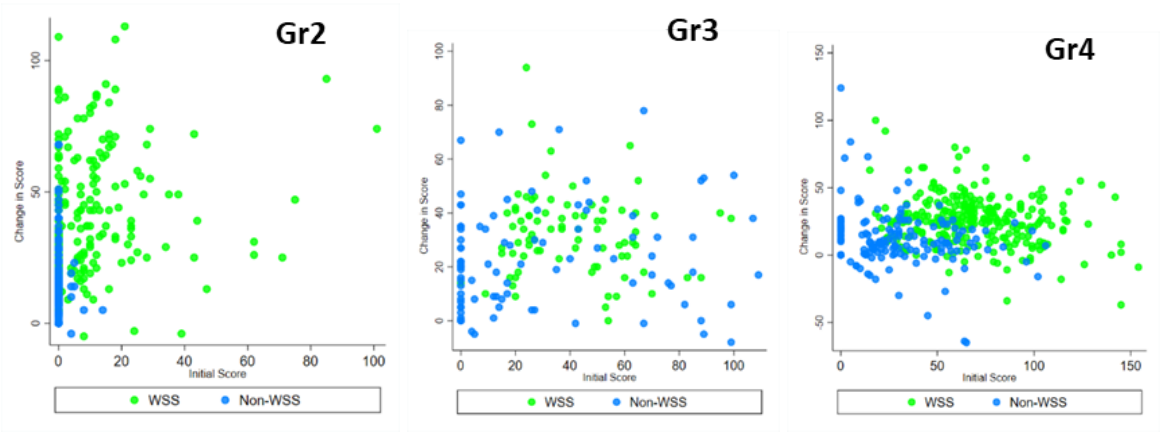


Figure 21: A nonideal case for RDD: Distribution of initial WCPM, Grade 4 2018-2020



Our main concern in detecting a causal impact of the programme is in misattributing gains to WSS instruction due to differences in where learners start. To investigate this, we first looked at the relationship between initial WCPM and gains in WCPM over a year for each grade in each year. The summary of these results is displayed in Figure 22. Despite a clear theoretical basis for a relationship between initial WCPM and gains in WCPM, we found no clear relationship in this sample. This is evidenced from the scatter plots below but also from Pearson correlations which were generally below 0.2 and always below 0.4.

Figure 22: Initial WCPM against gains in WCPM over one year for Grades 2, 3 and 4



This lends confidence to the assumption that the initial WCPM score of the learner is not highly predictive of their gain over the year, whether they are in the program or not. We therefore estimate programme effects with a standard regression. However, we still control for initial WCPM. We also allow for a different relationship between initial WCPM and gain in WCPM for those in and out of WSS with an interaction term.

Appendix 2: Semi-Structured Interview guide

Aim 1: Assess perceived impact of the WSS programme on learner literacy levels.
Aim 2: Assess mechanisms by which outcomes are achieved and/or barriers to impact.

Informed Consent

Explain to the interviewee that the purpose of this interview is to find out as much as possible about the WSS programme. Tell them we are interested in the positive things but also the negative things. Assure the respondent that their name will not be given in the final report. Ask them whether they consent to being interviewed. Make sure they know that they can stop the interview at any time.

Please indicate whether the respondent gives their consent to being interviewed (circle):

Yes No

*Ask the respondent if they are comfortable being recorded - explain that the recordings **WILL NOT** be shared with the school, the WSS programme staff, or anyone affiliated with either. The recordings are only for your own notes and that of your colleagues. Let them know that they can continue with the interview even if they choose to say no to being recorded.*

Please indicate whether the respondent gives their consent to being recorded (circle):

Yes No

Interview Questions

Note that many of the questions are open ended at first in order not to lead the teachers.

1. Tell me about the WSS programme?
2. How long has the programme been in this school?
3. What do you like about the programme?

4. What do you dislike about the programme?

5. Have there been any major changes to the programme over time that you know about?

   Probe around the way learners are pulled out of the classroom, the way they are taught, the people involved

6. Can you explain how you believe the programme impacts learners?

   Probe around both positive and negative impacts

7. Do you think the programme is helping learners learn to read?

   Probe around why they think yes or no, what changes they may have seen in the learners

8. Is the programme having benefits for learners other than helping them learn to read?

   Probe for details if yes

   Ask about learners not partaking in the programme in St Mary's school

9. Are there any disadvantages for the learners who partake in the programme?

   Probe for details if yes

   Ask about learners not partaking in the programme in St Mary's school

10. What is the most effective aspect of the programme in your opinion?

11. Can you tell me more about which parts of the programme work well?

    Probe around the content of the programme, its methods, interactions with learners

12. Is there any part of the programme that could improve?

13. Can you tell me more about how the programme could work better?

    Probe around the content of the programme, its methods, interactions with learners

14. What is your opinion of the programme's curricula?

    Probe around the curricula in the different grades

15. What is your opinion about the selection and training of the programme's teachers?

Probe for negatives as well as positives

16. How has it been for you as a *[teacher/parent/community member/organisational partner]* to have this programme in this school?

17. Have you personally benefited from this programme in any way?

18. Have there been any difficulties for you personally from this programme?

19. Do you believe the school has benefitted from this programme?

20. Do you believe there have been difficulties for the school because of this programme?

21. Do you see any benefits of this programme for anyone else?

    Probe around benefits for teachers/parents/community members

22. Do you see any difficulties for anyone else?

    Probe around difficulties for teachers/parents/community members

23. Does the programme benefit the community surrounding the school in any way?

24. Do you think the programme causes any difficulties in the school community?

25. Is there anything else you'd like to share about your experience with the WSS programme?

Additional questions for host school teachers:

1. Does the programme influence the way you teach at all?

   Probe for details if yes

Additional questions for WSS teachers:

1. Have you benefited from being situated at this school?

   Probe for details if yes

2. Has the programme benefited from being held within this school?

   Probe for details if yes

3. Are there any difficulties associated with the programme being held within this school?

Probe for details if yes

Additional questions for partner organisation representative:

2. How has it been for you to be involved in this programme?

   Probe for details if yes

3. Has the programme benefited from being held within this school?

   Probe for details if yes

4. Are there any difficulties associated with the programme being held within this school?

   Probe for details if yes

Appendix 3: Classroom Observation Checklist

Explain to the WSS teacher that you are just there to watch them teach and that you are not assessing them. Tell them that their name will not be recorded anywhere and that they should just teach as usual.

School:		**Tantyi**	**St. Mary's**
Grade:		**1 and 4**	**3 and 4**
Indicator	**Rationale**	**FINDING**	**Finding**
How many learners are in this group?	Assess the compliance with 'small-group' teaching	Both WSS class centers compliant; a small group size of 12 learners per pull-out was the case for both teachers.	Both WSS classes compliant for small group size
How long did the lesson take?	Child needs adequate time to engage with teacher and materials	Lesson period close to 45 minutes, 2-3 minutes accounts for movement to and out of WSS	Lesson period close to 45 minutes, 2-3 minutes accounts for movement to and out of WSS

Did each child in the group get a chance to participate?	Small groups are only effective for all children if each child gets individual attention	In Teacher 2's Gr. 4 class, 10 out 12 were very engaged and participated fully in the group learning activity, 2 boys at the back of the group were distracted - possibly due being at the back of the group and the activity being between Teacher 2 and the whole group. In the individual reading and reporting activity all 12 learners were fully engaged. In Teacher 1's Gr. 1 class some children were quiet. Teacher 1 followed the same format as Teacher 2 for the 1st and 2nd activity.	St. Mary's class format is more attune to individual attention, since learners enter the teacher facilitated book reading activities as groups of 4, and each learner has the opportunity to read a portion of the story book, while the 8 other learners are attended to by the assistant teacher as they tackle the desk reading and report writing - waiting for their group of 4's turn to be called for the group reading activity.
Do the teachers read to the group?	Do teachers generate interest by reading aloud, get learners excited by new books, and provide opportunities for learners to learn the sounds of words.	Teacher 2 made the Gr. 4 group story reading activity very engaging, exciting and used humor while moving seamlessly between comprehension, sound and sight words, and group reading. Teacher 1 group activity with the Gr. 1 learners had a formal and teacher directed engagement with learners engaging only when prompted.	Both Teacher 3 and Teacher 4 read a portion of the story book to each turn of 4 groups coming into the reading activity. Jenny made some effort to make the book reading across her 4 groups taking turns for the activity. Teacher 4's group reading activities were more matter-of-task. The groups of 4 learners rotation format is very time conscious for all the groups get their turn in the group reading task.

Do teachers ask learners questions about text being read? (note whether the questions are open-ended or close-ended)	Open-ended questions give learners an opportunity to practice vocabulary but also provide critical thinking skills. This also assesses the level of classroom engagement and the type of environment that the teacher creates	Teacher 3 asked very engaging open and close-ended question in both the story previous reading recall and the comprehension exercise. Learners were animated and participative with good exchanges from their own input and questions.	Both teachers asked learners questions, but very few. The group of 4 reading cycle time is short because the groups take turns.
What does the teacher do when there is free-reading time? (if applicable)	Does the teacher model to the learners that reading is an engaging, enjoyable activity?	Both Teacher 2 and Teacher 1 interacted with the learners during the reading time. Teacher 2 made the story reading enjoyable by asking funny questions, animating the story and reading portions of the story with the Group. The energy and engagement buzz from the group reading activity in Teacher 2's class transferred to the individual task, while in Teacher 1's class it was a matter-of-task focus to complete the activity.	Free-reading was quite limited in both Teacher 3's and none in Teacher 4's class. The teachers somewhat succeeded in modeling that reading is engaging activity but didn't demonstrated that it is enjoyable.
Do the learners read together? Do they read aloud to each other?	Learners who read together or share books are able to influence each other's interest in new topics and new books. This also assesses whether children are comprehending and therefore measures their level of literacy.	For the Gr 4's 1st activity learners read portions of the story book with Teacher 2 aloud (sound, sight and vocabulary words) and some read to each other in in the second activity. In the 2nd activity learners discussed the books of choice with each other and were influencing each other as to what was exciting to read. Teacher 1 read the story in isiXhosa for the Gr. 1's and they read the phonics words.	All learners enjoyed taking turns reading aloud to the group of 4 learners per turn. In the 2nd activity learners discussed the books of choice with each other and were influencing each other as to what was exciting to read.

Do teachers use books to start discussions?	Talking about the books gives learners a chance to practice new vocabulary, engage with the content of the books, and ask questions about things they found interesting. Teachers should be encouraging this as part of the learning process.	Both classes used a story book to initiate interactive reading and discussion. With Teacher 2 Gr. 4 the discussion was vibrant and learners engaged freely and expressed different ideas. In Teacher 1's Gr. 1 class learner participation was limited to responding to the teachers questions and prompts to repeat what's read to the group	Both classes had an interesting book for group reading, new words were defined and the teacher asked questions for comprehension and very limited general knowledge.
Do learners discuss things with each other?	This assesses the learners' level of engagement with and interest in the books. Discussing books is a way of practicing vocabulary and topics learned and sharing their interests with their peers. This will also assess the learners' ability to construct meaning from the texts they read.	For the Gr 4's 1st activity learners freely asked all sorts of questions. For Gr. 1 only the teacher asked questions.	Very limited discussion among learners in both classes in both activities; learners in Teacher 4's class were expected and asked to lower the noise when talking across to each other.
Do learners ask the teacher questions?	This is to assess the level of classroom engagement and the type of environment that the teacher creates. Ideally the teacher would encourage questions and allow the learners to be curious and inquisitive.	Gr 4 class were freer to engage the teacher with question since her group activity method was more interactive. For the Gr. 1s the interaction was only teacher directed.	Learners didn't ask question relating to content of both activities.

How much do the learners talk in general?	This shows the level of engagement in the classroom and the opportunities that are available to learners to engage with and process what they are learning	Gr.4s were confident, freer to engaged, talked a lot and not reserved to share their thought. Gr. 1 talked in response to questions and prompts from the teacher.	No talking in both groups, except when asked to read a story portion aloud in turns.
Is there a general interactive mood within the group?	This will also assess the type of learning environment created by the teacher and the degree to which engagement is encouraged.	Teacher 2 Gr.4 higher interactive mood was excellent and aided by her humor and less rigid way of conducting activities. Where Teacher 1's Gr. 1 activities were somewhat teacher directed and task focused. Teacher 2 made the story reading enjoyable by asking funny questions, animating the story and reading portions of the story with the Group. After the group story activity, the learners moved from the story area to their desk activity. Teacher 2 assisted the learners during the desk activity, answered their questions and checked with all the learners whether they were on the right track with the activity.	Interactive mood was medium to low between Teacher 3 and Teacher 4's classes. Class are task focuses as group of 4s take turns from the desk to the group reading activity sitting on the floor. In Teacher 4 class the mood even further subdued due to the expectation for the learners to be quieter.
Are there enough books? Is there a variety of books? Are there both fiction and non-fiction books?	A wide variety of books is important. Learners need books that are appropriate for a range of reading levels and interests. Children need to have a good chance of finding something that interests	Both Gr.4 and 1 classes had a great supply of fictional and non-fictional books, with a variety of other learning materials including wall posters in vibrant colors. For example, for the desk activities, learners could select a book of their interest to read and report on.	Both WSS class centers had more than an adequate number and variety of books for learners to choose from and book for home reading.

	them.		
Does reading appear fun/boring/hard/ tiring/exciting/funny to the learners?	This will assess if the reading material available to the learners is of the correct reading level and if the books are interesting to the learners. If the books available are too hard or not varied enough to be of interest to the learners they are likely to find reading boring or frustrating.	Gr 4 class was more interactive, fun, funny from humor and learners were excited. For the Gr. 1s the interaction was only teacher directed, somewhat formal and interacted as matter of task.	Group reading activity in both WSS classroom centers was more matter of task, more so in Teacher 4's class.

Appendix 4: Fieldwork schedule

Fieldwork schedule: Qualitative Evaluation Data Collection					
LOCATION	**DAY**	**TIME**	**ACTIVITY:**	**STAKEHOLDER**	**COMMENTS**
School 1	Day 1 19/02/24	7:45 – 8:15	Introductions: Introduced to the WSS programme staff at DCC and travel to Tantyi Primary School site.		
Tantyi Primary School		8:15 - 9:00	Classroom observation	- 45 min Justine Classroom (WSS staff)	Conducted an observation of the grade 3 English reading literacy lesson
		9:00 - 9:45	Classroom observation	- 45 min Neo Classroom (WSS staff)	Conducted an observation of the grade 1 isiXhosa reading literacy lesson
		9:45 - 10:30	Interview with one programme staff member	1hr15 (WSS teacher)	Conducted and completed the interview with Justine and Neo (WSS teachers)
		14:30 - 15:30	Interview with one host school staff member	- Mrs. Peter 55 min (School teacher(	Conducted and completed the interview with Mrs Peters

School 1	Day 2	9:00 - 9:45	Focus group (FGD) with family and community members	55 min Parent	Conducted and completed the interview with Parent 1. Parents invited for the FGD did not arrive.
Tantyi Primary School		10:00 - 10:45	Interview with one family member	1:06 min Parent	Conducted and completed the interview with Parent 2.
		11:00 - 11:45	Interview with one community member	Not arranged	Not arranged: WSS may have not been able to secure a respondent.
		12:00 - 12:45	Interview with one partner organisation representative	01:14 min Mrs. Priscilla Glover (School principal)	Conducted and completed the interview with Tantyi principal)
		14:30 - 15:15	Focus group	School and WSS staff members: Justine, Neo, Jayne, Demi - Mrs. Glover, Mrs. Peter, Ms. Vabaza	Conducted and completed the FGD with school and WSS staff (1:09 min)
School 2	Day 3	7:45 - 8:15	Introductions		

St. Mary's SC School		8:30 – 10:00	Classroom observation	45min Jayne (WSS staff)	Conducted an observation of the grade 4 English reading literacy lesson
			Classroom observation	45min Demi (WSS staff)	Conducted an observation of the grade 3 English reading literacy lesson
		10:00 - 10:45	Interview with one programme staff member	Demi (WSS staff): 52 min	Conducted and completed the interview with WSS staff
		13:30-14:15	Interview with one programme staff manager	Kelly Long (programme manager) : 45 min	Conducted and completed the interview with WSS staff
		14:30 - 15:30	Interview with one host school staff member	Mrs. Wegner: 1:00 hrs.	Conducted and completed the interview with schoolteacher
School 2	Day 4	9:00 - 9:45	Focus group with family and community members		
St. Mary's SC School		10:00 - 10:45	Interview with one family member	Mrs Evon (36 min) – couldn't complete last 3	Conducted the interview with community member and parent

				questions, had to be back at work.	
		11:00 - 11:45	Interview with one community member	Interview was conducted with Blane Classroom Assistant in Demi's WSS classroom (59 min)	Conducted and completed the interview with WSS staff
		12:00 - 12:45	Interview with one partner organisation representative	- Mr. Jacobs (48 min)	Conducted and completed the interview with St. Mary's SC school principal
		14:30 - 15:15	Focus group with staff member:	Mrs Wambi Mrs Carron May, Brendan, Williams, Jayne Berriman (1.05 hrs.)	Focused group conducted and completed with St/ Mary's school and WSS staff
•	Day 4	16:00 - 19:00	Qualitative researcher travels home		

Appendix 5: Full Regression Tables

Table 15: Impact of WSS program in St Mary's: Change in WCPM by program status, Grade 2

	All learners	±1 WCPM	±2 WCPM	±5 WCPM	±10 WCPM
	β (se)	β (se)	β (se)	β (se)	β (se)
WSS	27.98*** (2.12)	23.28*** (2.32)	23.10*** (2.32)	23.92*** (2.32)	24.85*** (2.28)
2019	2.39 (3.12)	4.37 (3.47)	4.33 (3.48)	3.37 (3.50)	3.32 (3.33)
2020	-10.08*** (3.31)	-8.75** (4.08)	-8.77** (4.10)	-9.34** (4.06)	-7.09* (3.72)
2021	-16.08*** (3.37)	-9.70*** (3.34)	-9.67*** (3.35)	-9.80*** (3.39)	-9.49*** (3.39)
2022	0.15 (3.23)	-2.00 (3.22)	-1.45 (3.22)	-1.41 (3.25)	-1.57 (3.26)
2023	2.24 (2.84)	3.58 (2.99)	3.15 (2.99)	4.89 (2.96)	5.46* (2.88)
Initial WCPM	1.41 (1.03)	- -	0.05 (10.05)	2.49 (2.26)	1.84 (1.41)
WSS*Initial WCPM	1.07 (1.03)	- -	- -	0.28 (2.96)	-1.77 (1.48)
Constant	10.78*** (2.22)	9.49*** (2.14)	9.56*** (2.14)	9.24*** (2.17)	8.92*** (2.17)
N	410	274	277	293	327

Note: Base categories are 2018; non-WSS; non-WSS interacted with initial WCPM

** Significant at the 90% level, ** Significant at the 95% level, *** Significant at the 99% level.*

Table 16: Impact of WSS program in St Mary's: Change in WCPM by program status, Grade 3

	All learners	±5 WCPM	±10 WCPM	±20 WCPM	±25 WCPM
	β (se)	β (se)	β (se)	β (se)	β (se)
WSS	19.30*** (4.90)	-17.38 (49.18)	-17.75 (20.37)	-3.03 (9.64)	7.67 (7.78)
2021	-3.96 (3.64)	-4.07 (8.71)	0.98 (6.52)	1.64 (4.01)	-1.13 (3.83)
2023	-9.24** (3.76)	-16.27* (9.24)	-4.91 (6.78)	-8.49** (4.13)	-9.73** (4.01)
Initial WCPM	0.06 (0.06)	-0.72 (2.06)	0.19 (0.61)	0.46** (0.20)	0.32** (0.16)
WSS*Initial WCPM	-0.14 (0.11)	1.50 (2.79)	1.36 (0.99)	0.61 (0.43)	0.21 (0.31)
Constant	22.13*** (3.32)	40.22 (33.53)	20.06* (10.86)	16.77*** (3.62)	18.81*** (3.54)
N	182	25	52	108	120

Note: Base categories are 2019; non-WSS; non-WSS interacted with initial WCPM
** Significant at the 90% level, ** Significant at the 95% level, *** Significant at the 99% level.*

Table 17: Impact of WSS program in St Mary's: Change in WCPM by program status, Grade 4

	All learners	±5 WCPM	±10 WCPM	±20 WCPM	±25 WCPM
	β (se)	β (se)	β (se)	β (se)	β (se)
WSS	20.35*** (3.84)	11.46 (11.13)	3.93 (10.08)	12.88 (8.25)	15.74*** (5.89)
2019	7.22*** (2.56)	-2.81 (7.35)	3.59 (4.71)	3.45 (3.82)	3.72 (3.54)
2020	-10.18*** (2.91)	-23.28*** (6.91)	-16.07** (6.19)	-10.86** (4.98)	-12.19*** (4.10)
2021	-1.55 (2.96)	-14.85 (28.09)	-15.95 (12.48)	-11.16 (6.75)	-11.74** (5.30)
2022	7.21** (2.99)	12.00 (12.87)	11.22 (7.11)	10.89** (4.50)	10.72*** (3.77)
2023	5.06 (3.07)	-3.40 (18.83)	-3.51 (9.38)	-0.67 (5.47)	-1.50 (4.30)
Initial WCPM	-0.09 (0.05)	-0.06 (0.74)	-0.47 (0.31)	-0.28 (0.17)	-0.30** (0.12)
WSS*Initial WCPM	-0.00 (0.07)	0.14 (0.22)	0.41** (0.20)	0.18 (0.16)	0.14 (0.12)
Constant	10.73*** (2.37)	19.62 (42.23)	30.36* (17.72)	19.90** (9.58)	21.32*** (6.32)
N	451	52	107	188	237

Note: Base categories are 2018; non-WSS; non-WSS interacted with initial WCPM
** Significant at the 90% level, ** Significant at the 95% level, *** Significant at the 99% level.*