Perspectives in Education 2014: 32(1)
ISSN 0258-2236

http://www.perspectives-in-education.com

Supporting transition or playing catch-up in Grade 4? Implications for standards in education and training

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This paper describes an intervention programme that was originally intended to support transition to English as language of learning and teaching (LoLT) in Grade 4 in a township school, using a pre- and post-test design. Because the pre-tests revealed very poor literacy levels in both Zulu home language and English, the intervention programme was modified in an attempt to fast-track the learners to literacy levels more appropriate to their grade. This paper outlines the intervention, presents the pre- and post-test results of the English literacy assessments, reflects on the effects of the intervention, and briefly considers some of the reasons for the initial poor literacy performance. Finally, a model for literacy development in high-poverty contexts is proposed to minimise the need to play catch-up in the Intermediate Phase.

Keywords: literacy, decoding, comprehension, Grade 4, Foundation Phase, Intermediate Phase, high-poverty schools

Introduction

'Our kids are struggling. Please can you help us help them?' These words were spoken in 2009 by the principal of a primary school in a Gauteng township who asked for literacy support to be given to the Grade 4 learners and teachers at the school. The school provided initial instruction in Zulu in the Foundation Phase, but the learners struggled when they changed to English as the language of learning and teaching (LoLT) in Grade 4 and the school was looking for ways to support this transition. This was a functional school in that it was well managed, the school grounds were neat and clean, school hours and the timetable were adhered to and the school had a good reputation in the community and the district office. Yet, despite its good governance,

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literacy levels were low and the school was underperforming academically. In 2008 the Grade 3 learners obtained 19% for Zulu literacy in the annual national assessment (ANA) and it was this poor performance that prompted the principal to find ways of supporting the learners' transition from the Foundation Phase to the Intermediate Phase.

It was in this context that a Grade 4 literacy intervention was planned and implemented, using a pre- and post-test design. The intervention at the school serves as a single case study. This paper addresses the following questions: *What was the nature of the intervention? Was it able to support the transition of learners in the Intermediate Phase? If not, why not? How was the intervention modified and did the modified intervention make a difference? What can be learned from this case study?*

The nature of the intervention programme is described at a broad school level as well as at Grade 4 level; the literacy results before and after the implementation of the intervention are examined and, in light of the results, the changes that were effected are briefly discussed. In conclusion, some pedagogical implications are considered, and a model for successful literacy development is proposed that identifies critical factors which need to be in place for successful literacy development to occur right from the start of primary schooling.

Before moving to details of the study itself, a brief discussion of the transitional nature of Grade 4 is given to situate the intervention case study within a broader theoretical context.

Why is Grade 4 important?

In most schools worldwide, foundational reading skills are supposedly developed in the first three years of schooling during which period there is generally a strong emphasis on teaching letter-sound relations and developing decoding skills (i.e. the bottom-up technical reading ability that converts print symbols into language). Grades 1-3 are the *learning to read* phase. During these years, children are typically given regular reading homework to practise their fledgling reading skills and the texts to which they are exposed are usually short narrative texts which fall within young children's frame of reference. During this phase, children's oral language proficiency can influence the ease and speed with which they learn to read (Snow & Dickinson, 1991; Tabors & Snow, 2001), which is why a strong case is made for early literacy instruction in the home language.

Once children have been taught to read (i.e. decode), reading as a language and information-processing skill is then largely presupposed, the assumption being that once children have 'cracked the code', they can use their decoding skills to make sense of the information that they read. This typically happens from Grade 4 onwards, when they move into the *reading to learn* phase.

In most schooling systems around the world, Grade 4 thus represents a transition where the instructional focus changes from *learning to read* to *reading to learn*. Learners continue to build on and extend their literacy skills, but these skills become increasingly academic in nature. There is a growing reliance on literate practices for transmitting, acquiring and transforming knowledge. Content subjects and accompanying textbooks become increasingly important. The nature of the texts that learners read changes from narrative to more expository text types which are often conceptually dense and abstract and, unlike narrative texts, tend to deal with topics that are unfamiliar to the readers' frames of reference (e.g. Chall, Jacobs & Baldwin, 1990).

Oral proficiency is no longer adequate for coping with school demands; children need to become competent in accessing and making meaning from written language with its vast range of vocabulary. The syntactic structures used in written language tend to be more complex than oral speech, with higher usage of passives, subordination and nominalisation. Understanding and constructing meaning from language undergoes a subtle cognitive shift and increasingly depends on the ability to use linguistic and textual clues in the text itself rather than the conversational context of oral speech (Reeder & Shapiro, 1993). In other words, learners must start learning the registers needed to understand and produce the language and discourse of their academic content subjects. Cummins (2000) terms this cognitive academic language proficiency (CALP). Ready access to print or electronic information and the ability to understand such information fast and accurately are critical factors in the early development of academic literacy. Academic literacy, thus, has its roots in *reading to learn* when learners transition from Grade 3 to 4.

An important skill in *reading to learn* is the ability to recognise high-frequency words automatically, rapidly and accurately. Automatic word recognition frees up attention resources so that the reader can pay attention to meaning (e.g. LaBerge & Samuels, 1974; Stanovich, 1986; Kuhn & Stahl, 2003). This makes reading faster, effortless, more meaningful and, hence, more pleasurable. In contrast, a learner who pays conscious attention to individual words in a text and tries to work out how to read them will not have attention resources for comprehension. Oral reading fluency, measured in terms of words read correctly per minute (wcpm), is seen as the bridge between decoding and comprehension. Research on norms for reading rate in English indicates that, by Grade 2, children should be able to read at 90 wcpm, while the average Grade 4 child (i.e. at the 50th percentile) should be able to read at 120 wcpm (Hasbrouck & Tindal, 2006: 639). Reading rate in English as L2 is estimated to be at about 70% of that of a L1 reader (Anderson, 1999).

The transition from *learning to read* to *reading to learn* does not automatically or easily take place with all children. This transition is especially challenging when (i) children have reading or learning difficulties, and when (ii) education is framed by disadvantage, i.e. when large numbers of learners come from high-poverty homes and attend low-income, poorly resourced schools. The transition is also challenging

(iii) within multilingual education contexts where learners are expected to be biliterate, and reading to learn is done in a language that is not the learners' home language.

In schools in South Africa where children are taught in an African language in Foundation Phase, Grade 4 is particularly challenging because this is when English becomes the LoLT. Not only do learners need to develop adequate oral communication skills in English, they also need to develop the more book-oriented academic literacy skills in the LoLT to cope with the increasing literacy challenges of the Intermediate Phase. If they have developed good reading skills in their primary language, then this should form a sound basis for developing reading skills in English. Bilingual reading research has found that decoding skills can transfer across languages with an alphabetic written code (e.g. Geva & Zadeh, 2006; Lipka & Siegel, 2007). Reading comprehension skills can also be transferred across languages, such as the ability to identify setting, main characters, problems and resolution in narratives, or the ability to identify main ideas, make inferences and predictions, use linguistic or text clues to construct meaning when reading expository texts. The transfer of such skills forms the basis of Cummins' Interdependence Hypothesis, namely that there is a common underlying proficiency relating to academic literacy that is shared across languages (e.g. Cummins, 2000). In bilingual education systems it is, thus, important for learners to develop strong literacy skills in their home language as a basis for building academic literacy proficiency that can be shared across languages.

Grade 4 in South African schools

If Grade 4 is generally recognised as an important transition year in schooling systems, how is this reflected in policy and performance in South Africa? Although the Curriculum and Assessment Policy Statement (CAPS) has replaced the former OBE assessment standards since 2011 (Department of Basic Education, 2011), at the time that the intervention started in 2010, CAPS was not yet in place, and the assessment standards for Reading and Viewing in Grade 4 in a First Additional language (FAL) expected Grade 4 learners, inter alia, to do the following:

- Understand elements of a story (title, characters, point of view, role of pictures in making meaning)
- Read for information (e.g. in a recipe, map, timetable)
- Understand design and layout of print material
- Read for pleasure at an appropriate level
- Use reference books and develop vocabulary
- Demonstrate a reading vocabulary of between 1 000 and 2 500 words (DoE, 2002: 62-67).

Vague as the above assessment standards are, they depict a 10-year-old child who is expected to read both narrative and informational genres of text and make meaning from them, a child who reads beyond classroom demands (i.e. for pleasure), and has

developed some visual literacy. If such literacy skills are expected in the FAL, then the same applies even more so to literacy in the home language. Yet, how well did these literacy standards match literacy accomplishment in schools before and during the intervention period of 2010-2011?

The various national and international large-scale literacy assessments undertaken in South Africa during the past decade consistently paint a bleak picture of literacy achievement in our schools, irrespective of the language of testing. South Africa's involvement for the second time in the Progress in International Reading Literacy (PIRLS) in 2011 show very low literacy levels compared to other participating countries (South Africa participated for the first time in 2006). In 2011 Grade 4 learners (n=15 744) in 341 schools across all the provinces participated in the pre-PIRLS assessments, in the language which had been their LoLT during the Foundation Phase. Pre-PIRLS makes use of shorter, easier texts (on par with Grade 3 texts) than the international PIRLS assessments intended for Grade 4; yet, the mean score of 461 was well below the international centre point of 500. (Columbia, another developing country, had a mean of 576.) Grade 4s who did pre-PIRLS in English and Afrikaans scored the highest, at 530 and 525 respectively, while those tested in the African languages performed very poorly, ranging from the highest mean of 451 in Swazi to the lowest in Northern Sotho at 388 (Howie, van Staden, Tshele, Dowse & Zimmerman, 2012: 27-29). Performance was poor even at the most basic level of reading comprehension, i.e. the ability to retrieve explicitly stated information in a text (answering literal questions). Results such as these indicate that reading is more than simply a language issue; even when the LoLT is the home language, reading does not just happen, it needs to be explicitly taught and nurtured. The poor performance of our Grade 4 learners in pre-PIRLS clearly indicates that they are not well prepared for the literacy challenges of the Intermediate Phase.

There are many contributing factors that have an impact on formal schooled literacy. A great many learners in South Africa come from low socio-economic backgrounds, and many adults in these households have low literacy levels. Children from such homes are seldom exposed to books or regular literacy practices in the home, and home storybook reading in the pre-school years may be entirely absent. Such children have very little experience of making meaning from the printed word before they start school. In such cases, schools should play a compensatory role, providing a print-rich and stimulating environment that develops strong literacy skills and is conducive to teaching and learning.

Yet, in reality, many children from poor homes attend poorly resourced schools where classrooms are by no means print-rich environments and where reading plays a peripheral role (DoE, 2005; Pretorius & Mampuru, 2007; Pretorius & Mokhwesana, 2009). When they start their schooling, they may start to read in their primary language, but once they can decode words, very little sustained effort goes into helping them make the transition from decoding to comprehension, and from the

simple familiar narrative texts to the more complicated and unfamiliar expository texts. The genre of expository text hardly exists in the African languages, so there are few opportunities for *reading to learn* from home language expository texts. Even though many book resources have been put in poor schools in the past decade, these are often poorly managed or locked away in storerooms (NEEDU National Report, 2012).

Even if some learners manage to overcome the odds and become good readers in this print-poor context, when they change to English as LoLT they move from a relatively sparse L1 narrative text base to an extensive L2 expository text base. Appropriate language and literacy support is critical. If learners start falling behind in Grade 4, it is very difficult to catch up later. And if learners come into this transition phase with poorly developed reading skills, the challenges are all the greater.

The need to develop strong language and literacy skills in the Foundation Phase is critical for supporting the transition to Grade 4, even in homogeneous, well-resourced schooling systems where the LoLT is the home language. In multilingual school contexts when children also have to switch to another language as LoLT, a strong language and literacy foundation in the home language and in the FAL becomes critical in the early years. When much of this early schooling is characterised by high-poverty contexts, the probability of success is even more challenging.

The research questions in this paper are:

- What kind of literacy skills did the Grade 4 learners have at the start of the project?
- How was the intervention adapted to meet their literacy levels?
- Did the intervention make a difference and, if so, how?

In conclusion, we consider how the lessons learned from this single case study can help inform standards in education and training.

Methodology

The school context

The school, in a township in Gauteng, accommodates about 600 children per year, drawing learners locally from the township, as well as from informal settlements in and around the township. There is a feeding scheme where approximately half the children receive one warm meal a day.

The school has a policy of providing initial schooling in an African language in the Foundation Phase, with English becoming the LoLT in Grade 4, while the African languages continue being taught as a subject to Grade 7. Originally, the school only offered Zulu, but it has recently also included Northern Sotho (henceforth N Sotho). At the start of the project there were two Grade R classes (one Zulu, one N Sotho),

three Grade 1 classes (two Zulu and one N Sotho) and then two classes at each further grade level. In 2010 only Zulu was offered in Grade 4.

Owing to good governance, the school afforded a stable and functional site for a literacy intervention.

Features of the *Literacy coaching* project

The project comprised a university-based team as well as an externally appointed project co-ordinator. The project team had been involved previously in a five-year multi-level literacy project at two primary schools in the same township. That project was premised on two principles underlying literacy development in high-poverty contexts, viz. *capacity building* (improving the literacy levels of the learners and the literacy instructional capacity of the teachers) and *resource building* (making books easily accessible to learners). The project had helped each school establish a functioning and computerised school library and encouraged teachers to create print-rich environments in their classrooms. Workshops on reading (what it involves, how to teach it, how to assess it, etc.) were also held regularly, to help build teacher capacity, on the assumption that teachers would take on board what they learned at the workshops and incorporate it into their classrooms (cf. Pretorius & Mokhwesana, 2009). However, it was found that the teachers needed more hands-on support than what the workshop approach allowed (e.g. Currin & Pretorius, 2010). Based on the lessons learned from the limitations of the workshop approach, the multilevel intervention model was modified and extended, and became an embedded, coaching model.

Although the project officially started in January 2010, initial project planning, discussions and school visits took place during the last quarter of 2009 in order to become better acquainted with the school. In order to get an idea of Grade 4 literacy performance before the project started, baseline tests were administered to the 2009 Grade 4 cohort towards the end of the year, and these results were compared with the 2010 intervention Grade 4 cohort a year later (see tables 2-4 below). In the first year of project implementation, the following procedures were put in place:

- The project appointed and paid an experienced Foundation Phase teacher as a literacy coach to work full time (from 07:00-15:00) four days a week with the Grade 4 teacher.
- The literacy coach functioned as a literacy role model and helped with lesson planning, resource development, literacy assessment and record keeping, daily teaching tasks and classroom management. This was extended to the Foundation Phase teachers, but to a lesser extent, since the primary focus of the project in the first year was to assist with the transition into the Intermediate Phase. During the second year of the project, far more literacy support was given to the Foundation Phase.

- The project co-ordinator did weekly classroom observations to see how project ideas were being implemented in classroom practice and to give supportive feedback and encouragement to teachers.
- Project members held regular meetings, interviews and workshops with the literacy coach, teachers and principal to discuss project progress, to address potential problems and to keep the stakeholders motivated and on target.
- The project helped the school build up and manage its library, and appointed, paid and trained a young woman from the community as school librarian. The library system was fully computerised.

Regarding literacy focus and content, a literacy programme which articulated with the Grade 4 curriculum was envisaged, the aim of which was to strengthen the learners' reading and writing skills in English so that they could cope with the increased literacy demands of the Grade 4 curriculum. The original focus was intended to be on introducing learners to extended narrative and informational texts on a daily basis and gradually increasing their length and cognitive challenge, in line with the textbooks that the learners used in their content subjects. Following Block and Pressley's (2007: 225-226) instructional principles, the planned reading activities included the following:

1. showing learners how to attend to words and derive meanings from new words using clues in the text and morphological clues;
2. teaching strategies for learning new words;
3. teaching pre-reading, reading and post-reading strategies;
4. asking questions, making inferences and predictions while reading and looking for evidence in the text to support reasoning;
5. noticing when comprehension breaks down and doing something about it (e.g. re-reading sections of text);
6. using story grammar elements (e.g. setting, characters, problems and resolution) to comprehend narrative texts;
7. using text features and genre conventions (e.g. headings, diagrams, tables, font size) to help understand informational texts;
8. identifying main and supporting ideas in informational texts; following sequence and arguments;
9. connecting ideas in a text to personal experience, background knowledge and other text information;
10. summarising a text afterwards; and
11. reflecting on a text after reading and discussing it.

The participants

A Grade 4 cohort (n=31) were administered baseline tests (see below) towards the end of 2009. This cohort did not form part of the intervention, but their results were used as a yardstick by which to measure project effects. In the first year of project implementation (2010), there was only one Grade 4 class comprising 44 learners (16 girls and 28 boys). This class formed the intervention group. Their ages ranged from 9-13 years, with an average age of 10.2 years. The Grade 4 class teacher taught both English and Zulu.

Assessment instruments

Using a pre- and post-test quasi-experimental design (cf. Dörnyei, 2007: 117) with the 2009 Grade 4 cohort as a baseline control group, a battery of literacy tests was administered to the 2010 Grade 4 intervention class to monitor literacy performance. These tests administered at the beginning of the year (pre-tests) and again at the end of the year (post-tests) to measure progress, included group-administered as well as individual, one-on-one tests. In addition to the pre- and post-tests, the baseline tests were also given to the intervention Grade 4 cohort at the end of 2010. Owing to space constraints, only brief outlines of all the tests are provided.

Baseline tests (end 2009/2010)*:* Two baseline tests (tests A and B, group administered) were given to the 2009 cohort of Grade 4 learners at the end of 2009, before the project started. The same tests were also administered a year later to the 2010 intervention Grade 4 cohort so as to compare project progress.

Test A was a literacy test assessing learners' knowledge of alphabetic sequence (in letters and words), word structure, word recognition, plural formation and spelling of high frequency words (e.g. *sister, school, bread*). It assessed basic English literacy skills; learners coming out of Foundation Phase should demonstrate fairly sound mastery in these skills.

Test B consisted of one of the 2006 PIRLS comprehension passages (informational) on Antarctica, with a combination of literal and inferential questions. Although this comprehension test is intended for learners who have done their initial literacy instruction in English, it was decided to give the test at the end of the Grade 4 year to see to what extent learners who have switched to English as LoLT can understand an informational text in English.

Pre- and post-tests (Feb 2010 to Nov 2010)*:* In addition to the baseline tests above, the intervention cohort of 2010 was also administered a battery of pre- and post-tests during 2010. A group-administered language dictation test (test C) and a reading comprehension test (Test D) were given to the intervention cohort at the beginning and end of 2010 (pre- and post-tests).

Dictation test (test C)*:* Because there are no easily accessible, standardised language tests in all official languages in South Africa for different age groups, it was felt that

a dictation test would tap into 'school' English proficiency without requiring the learners to read. English language proficiency was, thus, operationally defined as language proficiency obtained in a dictation test. To ensure that the level of difficulty of the dictation test was in line with the age group, the dictation passage of 24 words (about 'my house') was adapted from an approved Grade 4 textbook. The learners first listened to a reading of the passage and the dictation began on the second reading.

Reading comprehension test (test D): English reading proficiency was operationally defined as proficiency obtained in a reading comprehension test where a combination of multiple-choice and open, fill-in question test items were used, based on a text taken from an existing Grade 4 English textbook. The text was 172 words long, comprising six paragraphs, with an accompanying picture and eight questions (literal and inferential). A map was included relating to information in the text and three questions dealt with identifying relevant information from the map. The same dictation passage and comprehension test were used for the pre- and post-tests as it was held that the intervening eight months between test times would neutralise memory effects.

Decoding test (test E)*:* Although the initial literacy coaching programme intended to focus primarily on developing comprehension skills and strategies, it was important to assess decoding skills since decoding is necessary (albeit not sufficient) for comprehension; it enables comprehension.

The decoding test consisted of four subtests. The learners were tested individually in a quiet corner in the library. The test was first administered in English around March and then again in October; the Zulu version was administered mid-year.

Syllable identification: In this subtest the child is asked how many syllables (or claps) there are in the word. Three words were given beforehand for practice. In all, 10 common, high-frequency words were selected as test items.

Phonemic awareness: Phonemic awareness refers to the ability to distinguish sounds within words. The testee does not read the words, but listens to them, repeating them and then stating what is left of the word when a sound is removed. This subtest involved only the segmentation and deletion of sounds or syllables in words. The test determines whether the learner can recognise what part of a word is left if a syllable or sound is taken away, e.g. *book* without /b/ is *ook*. This subtest contained 18 items.

Word recognition: This test contains words in isolation to see how well the learner has developed automaticity in reading without using other clues in a sentence to work out how to read a word. In this subtest the Burt word recognition test (1974) was used. It comprises 110 words arranged in groups of ten. It starts with two- and three-letter words of high frequency (e.g. *to, up, sun*) and they become longer and less common.

***Oral reading fluency** (ORF):* ORF focuses on two components of fluency, viz. rate and accuracy, comprising a score obtained for the number of words read correctly in one minute (=wcpm) from an unseen passage. For this subtest, the English and Zulu passages were selected from Grade 4 textbooks. The English passage was about elephants (144 words).

The scores for all the tests were captured and the results analysed on SPSS, Version 20.

Results of 2009 baseline tests and 2010 pre-tests

We turn now to the first research question: *What kind of literacy skills did the Grade 4 learners have at the school at the start of the project?*

The 2009 baseline tests alerted us to the low Grade 4 literacy levels at the school before the project started. These were confirmed by the results of the initial Grade 4 pre-tests at the start of 2010 when the project commenced, as shown in table 1 below.

Table 1: Grade 4 test A and B baseline performance (2009)

	2009 Gr.4 cohort End 2009 Test A Literacy test	*2009 Gr. 4 cohort End 2009 Test B PIRLS Comprehension*	*2010 Gr. 4 cohort Pre-test 2010 Test C (FAL) Dictation*	*2010 Gr. 4 cohort Pre-test 2010 Test D (FAL) Comprehension*
Grade 4 cohort				
Mean %	44.3	18.6	22	27.5
(Std.Dev.)	(14.1)	(15.5)	(22.2)	(19.4)

When the literacy coach started working with the Grade 4s early in 2010, she quickly noted that their language and literacy skills were far below what was assumed by the Grade 4 curriculum. The decoding subtests confirmed very poor reading ability. Many learners could barely read Grade 1 texts, and the mean ORF score was 16 wcpm, reflecting a floor effect. According to English ORF scores, Grade 1s who read below 40 wpm are regarded as having reading problems (Hasbrouck & Tindal, 2006). Although the Zulu results are not dealt with in this article, it should be noted that similar poor word recognition and ORF scores were obtained in the Zulu decoding results later in the year.

Changes in programme

In light of these poor results, the intervention programme needed to be revised. The second research question is as follows: *How was the intervention tailored to address the Grade 4 literacy levels?*

The literacy coach and the teacher decided to 'go back to basics' to establish foundational reading skills. The revised aim was to increase the learners' literacy levels to a more maturationally appropriate level within an academic year. The focus changed to teaching phonics (e.g. letter-sound relationships, blends, word attack skills), developing phonemic awareness, strengthening word recognition, practising reading fluency, and building vocabulary. Although many of the comprehension strategies listed previously were integrated into lessons, some of them were not introduced (e.g. identifying main ideas) as the learners still struggled with basic reading.

The language and texts used for classroom activities were simpler and shorter. An awareness of books and an orientation to reading was strongly promoted: stories were read daily, reading homework was given daily, a reading corner was created in the classroom, reading for pleasure was encouraged, and learners were encouraged to use the school library. The very weak learners were also paid attention, and during the holidays attended a supplementary programme which included phonics work, since their grasp of these basic sound-letter relationships was still tenuous.

Classroom observations also revealed a common tendency in the school to teach in a fairly ad hoc manner, at quite a slow pace, and with a strong oral orientation. Although teachers were required to show their lesson plans in their files, there seemed to be a disjunction between the lesson plans and what actually happened in the classrooms. The literacy coach emphasised the importance of sound and practical lesson planning in the two-week cycle, integrating activities that complemented one another, checking that learning was occurring and consolidating it, creating flashcards relevant to the week's phonics and vocabulary focus, and preparing classroom and homework activities that related to the current teaching focus.

Besides the literacy nature of the programme, there were also two aspects of classroom life that received attention, viz. classroom appearance and class management. The literacy coach worked closely with the teacher to create an interesting, print-rich environment in the classroom. Care and time was also given to establishing better classroom management routines in order to create a classroom atmosphere conducive to learning. The literacy coach and the teacher were both warm and nurturing adults, but clear boundaries for classroom behaviour were established. Initially, the children waited for the teacher to give basic instructions. Learners were encouraged to become more autonomous, e.g. taking out books relevant to the timetable at the start of a period instead of waiting to be told to do so and always having a pencil, eraser and ruler on hand. Resource management was

also streamlined. Several plastic tubs were organised for colouring pencils, scissors, glue sticks, etc., and handed out when needed so that groups of learners had easy access to such resources without wasting time waiting to use them or squabbling over limited resources. A theme was also introduced each week, awareness raised about it through discussion, and the children reminded of it constantly through the week. For example, one of the learners had a physical disability and was initially bullied and made fun of, so the first theme was Tolerance. The learners were encouraged to think of ways in which they could show tolerance towards one another through their words and actions. Such occasions also became occasions for learning language in action.

Main results

To what extent was the intervention able to improve the literacy levels of the Grade 4 learners? This brings us to the central research question: *Did the intervention make a difference and, if so, how?*

Baseline results: We first turn to the overall differences in the baseline tests between the 2009 (pre-intervention) and 2010 (intervention) Grade 4 cohorts. Table 2 shows test A results, reflecting the differences in overall mean percentage, as well as differences in mean percentage at the 25th, 50th and 75th percentiles.

Table 2: Test A performance – end 2009 and 2010

	End 2009 *(pre-intervention Grade 4 cohort)*	**End 2010** *(intervention Grade 4 cohort)*
Test A (Literacy test)		
Mean	44.3	65.9
(Std Dev.)	(14.1)	(15.3)
Gains		+21.6
25th	36.2	52.6
50th	42.5	68.7
75th	52.8	79.5

As can be seen, there was an overall gain of 21.6% in performance in 2010 compared to 2009. This general improvement in basic literacy skills was reflected across the range of learners in 2010. Particularly noteworthy was the more 'normal' distribution of scores across the percentile groups: at the end of 2010 the weaker students at the 25th percentile (i.e. 25% of learners in a given group who perform most poorly), performed at the same level as the learners at the 75th percentile (25% of learners

who perform most strongly) in 2009, while in 2010 those at the 75th percentile were approaching mastery levels.

Table 3 shows test B results (the PIRLS comprehension passage), reflecting the differences in overall mean percentage in 2009 and 2010, as well as percentile differences. This was the most challenging test and reflects the level of reading ability expected at Grade 4 internationally. Although there was a 12% increase in overall performance in 2010, performance even at the 75th percentile shows that the learners found this kind of informational text very challenging.

Table 3: Test B performance 2009 and 2010

	2009 *(pre-intervention cohort)*	**2010** *(intervention cohort)*
Test B: PIRLS comprehension		
Mean	18.6	30.4
(Std Dev.)	(15.5)	(19.9)
Gains		+11.8
25th	5.8	13.1
50th	14.7	27.7
75th	29.4	42.3

Test B comprised literal and inferential questions; it is especially the latter types of questions that reflect real understanding and higher-order thinking skills. The disaggregation of results for literal and inferential questions is shown in table 4. The area where the learners improved the most was in answering literal questions.

Table 4: Test B literal and inferential questions 2009 and 2010

	2009		*2010*	
Test B (PIRLS)	Literal	Inferential	Literal	Inferential
Mean	26.6	20.7	40.9	26.4

Figure 1 shows how performance in literal and inferential comprehension changed from 2009 to 2010 across the percentile groups. It is interesting to note that, while all the learners coped better with the easier literal questions, engaging with the text at a higher level and being able to answer reasoning types of questions remained a challenge, even for learners at the 75th percentile.

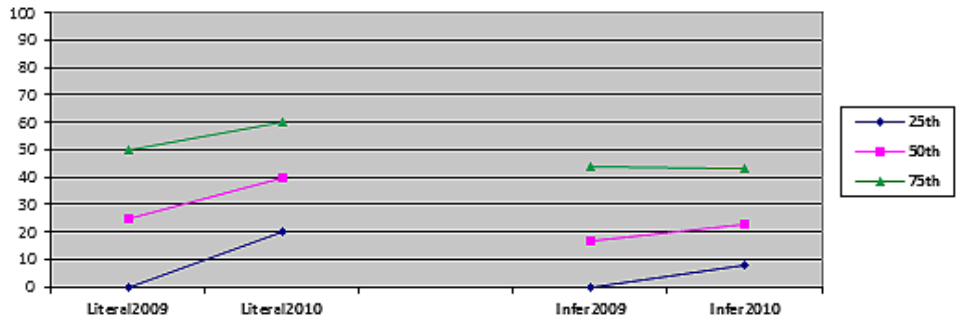

Figure 1: Performance in literal and inferential questions – 2009 and 2010

***Internal progress (pre- and post-tests)*:** In order to examine more closely the intervention learners' progress, three sets of tests (group tests C and D and individual test E) were administered in February 2010 and again in October/ November 2010. To recap, **test C** comprised a dictation passage and **test D** a comprehension test, with literal, inferential and visual literacy questions. Table 5 shows test C and D results. Although test D comprehension was shorter and easier than the PIRLS passage, there was a strong correlation of .67 (Spearman's rho, p< .001) between the two tests. Although the learners show improvements in both tests, the overall comprehension levels were still far too low for learners who were expected to be able to read to learn from their content subject textbooks.

Table 5: Test C and D Grade 4 pre- and post-test results 2010

	Test C Dictation %		*Test D Comprehension %*	
	Pre	*Post*	*Pre*	*Post*
Overall mean	24	44.3	27.5	45.3
(Std dev.)	(22.2)	(26.9)	(19.4)	(22.7)
Gains		+20.3		+17.8
Percentile 25%	3.5	22.7	8.3	26.7
50%	17.8	43.1	25	42.8
75%	42.8	71.5	41.6	67.8

Performance in decoding skills (**test E**) provides greater insight into why comprehension remained a challenge. Table 6 shows mean results for the various decoding subtests from pre-test (Feb) to post-test (Nov) as well as differential performance within the cohort.

Table 6: Test E Grade 4 pre- and post-decoding skills 2010

		Syllable identification		*Phonemic Awareness*		*Word recognition*		*ORF (wcpm)*	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
Mean		70.1	90.1	53.6	74.7	18	34	16	43
Percentile 25th		70	80.7	26.6	60	6	23	1	8
	50th	80	100	60	76.6	20	37	10	48
	75th	80	100	80	93.3	28	46	28	61

At the beginning of the year most of the children could recognise syllables, but performance dropped considerably when it came to phonemic awareness (the ability to distinguish sounds within words). This was especially noticeable with weaker readers. They also struggled to recognise common English words[1] or read extended English texts. According to ORF norms, at the start of the year *all* the Grade 4 learners were reading 4 years below their grade level (i.e. at about mid-Grade 1 level). The post-tests show a steady improvement in decoding at the 50th and 75th percentiles. Some of the stronger readers at the 75th percentile were now reading at about Grade 3 level, but many were still at Grade 2 level. Although the weak children (25th percentile) showed some improvement and could now, on average, recognise about 23 words on the Burt word analysis, after four years of schooling, they really grappled to decode words, especially in extended text. Their decoding performance in Zulu was equally poor, both in conventional reading assessments and eye tracking (Van Rooy & Pretorius, in press).

High correlations (Spearman's rho) of .82, .66 and .82, all $p < 0.001$, were found between ORF and performance on test A (literacy test), test C (dictation) and word recognition (in test E). What these correlations suggest is that basic literacy knowledge, the ability to recognise words in print, and the ability to hear words in oral language are interrelated. In other words, learners who had difficulty hearing words (and sounds in words) also had difficulty recognising and reading words in print (i.e. written words).

Table 7 shows mean gains across all 8 subtests according to percentiles. The weaker learners made fewer gains and, although not reflected in the quantitative results, these gains were made slowly; both the literacy coach and the teacher attested to the extremely slow pace of learning of these learners. One aspect where they made the most gains was in phonemic awareness, doubling their performance on this test from 26-60%. But this only meant that at *the end* of Grade 4 they were performing at the level where the learners at the 50th percentile performed at the beginning of the year. These learners were, only at the *end* of Grade 4, starting to grasp basic literacy concepts that should have been acquired during the Foundation Phase. They were improving slowly, but not catching up. In fact, they were slipping

further away from their peers. This is typical of Matthew effects in reading[1], where the poor get poorer, relative to their peers, the further they go up the educational ladder.

Table 7: Mean increases across all tests

	Gains	
Percentile	**Total gain in raw scores**	**Mean gains**
25%	128.7	16
50%	173.9	21.7
	178.8	22.3

In sum, although at all percentile levels the learners improved their performance from pre- to post-test time and, even though some made quite dramatic progress, the sad reality was that, at the *end* of Grade 4, they were starting to master basic literacy skills that should have been in place when they started Grade 4.

Discussion

In its conception and early planning stages the *Literacy Coaching Project* was intended to support the transition of Grade 4 learners into the more demanding requirements of the Intermediate Phase and the challenging transition to English as LoLT. This was never realised. Instead, a catch-up programme was put in place. The poor language and literacy levels of the learners reflected in the baseline and pre-test results necessitated a change to the programme, a 'back-to-basics' approach with a strong focus on phonics principles and the daily practising of reading words, sentences and short extended texts to develop more automaticity and fluency. Attention was also paid to meaning, vocabulary building, comprehension, writing activities and storybook reading. The basic literacy skills that were supposed to have developed during the Foundation Phase were instead crammed into the Grade 4 year. To what extent did the learners catch up and how did this play out?

What did catching up mean? The term 'catching up' is a relative one. In the context of this study, the catching up that was attempted during Grade 4 was not catching up so as to keep abreast with the Grade 4 syllabus, but catching up on basic skills that should have been developed during the Foundation Phase. There was definite improvement in some of these foundational skills at *the end* of Grade 4. But, as the literacy coach remarked, these were the kinds of skills that should already be demonstrated in Grades 2 and 3. Even with their improvements during the catch-up year, most of the learners in the cohort were still lagging behind by about one to two years with regard to literacy skills. For example, in terms of ORF norms, they were approximating Grade 2 level while some of the better readers were now reading at Grade 3 level. The gap between where they were at the start of Grade 4 and where

they should have been was so great that, after a year of intervention, they had not yet caught up.

Where did catching up first take place? Basic decoding skills responded quite well to the intervention. Although syllable identification is regarded as important in early reading, in this study performance on the syllable subtest did not correlate with other literacy skills. Even when the weaker children improved on syllable identification, they did not necessarily improve in phonemic awareness and word recognition. When phonemic awareness improved, children could recognise more words more quickly and their oral reading fluency improved. Improvement on the post dictation test suggested that learners could now distinguish common English words in the flow of speech and use their phonics and spelling knowledge to write these words correctly.

Improved decoding skills helped to support the learners' basic, literal understanding of texts. Performance in answering literal questions improved first, but the more open-ended inferential questions remained a challenge. These types of questions require learners to make connections in the text and to process information at a deeper level. These higher-order comprehension skills seem to take longer to develop. The results from this study show how vital decoding is for comprehension; unless learners can read with some degree of automaticity and accuracy, they are unlikely to comprehend texts even at a basic literal level.

Who was catching up? While literacy improved, in some individual cases quite dramatically, disaggregation of the results across the cohort shows that performance at the 50th and 75th percentiles showed similar increases (about 21 and 22 points respectively), while the weaker learners at the 25th percentile improved to a lesser extent, and slowly. These results suggest that the catch-up programme seemed to speak to the weaker and average learners. Much energy went into going back to basics for the whole class, and extra attention was paid to the very weak learners because the class as a whole had such a literacy backlog to catch up on. Even though the stronger learners made the most gains, they would have benefitted from an enrichment programme to stimulate deeper reading. This showed up particularly in the inferential questions; they were not yet processing texts at a deeper level, primarily because classroom instruction was still focusing on basics. To counteract the bleaching effect that whole class underperformance has on the potential for academic excellence, this outcome serves as a reminder that a catch-up programme needs to be differentiated for learners at the top end too, to develop their academic potential even further.

Why was so much catching up needed?

Given the amount of time and effort that went into trying to catch up on basic literacy skills in Grade 4, in terms of standards in education and training, it is important to understand how and why these learners got off to such a bad start in the first place. This is a single case study involving one primary school in one township, so

generalisations cannot be made. However, it is a fairly typical primary school in a common township context, and pedagogical implications can be drawn from it.

Despite three years of schooling, these learners started Grade 4 with minimal literacy skills; they could barely read English FAL texts at Grade 1 level, yet their reading in Zulu, the LoLT of their Foundation Phase, was similarly dismal. What went so badly wrong at the start of their schooling that necessitated a literacy cram course in Grade 4?

There are multiple reasons why children get off to a bad start on their early reading trajectories, especially in high-poverty contexts. Worldwide research shows that it is not easy educating children from poor homes and schools, especially if the language of schooling is not aligned with the home language. The reasons lie not with the intellectual potential of the children themselves but with the barriers to learning that poverty conditions impose. However, if schools are well managed, well resourced and provide quality teaching, then schools can play a compensatory role in overcoming the constraints that poverty imposes on learning.

Based on our classroom observations, interactions with teachers and the profile of poor literacy performance, three interrelated factors are identified as contributing to this situation:

1. An oral orientation to schooling/education:

One of the strongest contributory factors to the low literacy levels was the fact that much of the teaching and learning that occurred in Foundation Phase was oral based. Although oral interactions are held to be important for language and literacy development in the early years, this was not counterbalanced by early literate practices. There was much talk in the classrooms, and much oral chorusing of things learned, but far less reading and writing, even in the home language. Strongly related to the oral orientation was the fact that books hardly featured as learning tools and resources in the FP classrooms. The children had very little exposure to reading or writing extended texts in Zulu. There was virtually no whole class storybook reading on a daily basis, let alone on a weekly one; there were no book corners, no books for learners to practise their fledgling reading skills; no reading homework given; and very few written exercises to reinforce newly acquired reading knowledge. When print-based activities are peripheral, learners may unconsciously acquire the perception that books are not really important and that listening in class and chorusing answers is what counts as learning.

There was also an assumption that children could not be expected to read and write in English as FAL until they had acquired some oral proficiency. English was only introduced in Grade 2 and the lessons were oral based. This early dominance of oral teaching and learning orientates learners to an oral mode of learning, relying on memory and fragments of information gleaned from

auditory input, with little reinforcement from visual or print-based input.

Although it is generally recognised that oral language proficiency helps children learn to read, research in the past four decades has consistently shown that it is through reading that children acquire a wide vocabulary, increase their general knowledge, acquire more complex syntactic structures and become familiar with the conventions of various genres of text. The same applies equally to learning an L2: a great deal of language learning occurs through reading (Feitelson, Goldstein, Iraqi & Share, 1993; Vivas, 1996; Cunningham & Stanovich, 2001). Exposure to written language forms helps to reinforce oral proficiency.

2. Absence of systematic teaching of phonics and ad hoc development of decoding skills:

Related to the oral orientation of teaching/learning was a lackadaisical approach to reading instruction. Although phonics principles were taught (such as letter-sound relations), these were not taught systematically. A list of syllables encountered in the African languages such as ba- be- bi- bo- bu- were chanted in chorus from the chalkboard with little connection between these syllables and their occurrence in words and in sentences of extended texts. The pace of teaching was slow, with learners still being taught sounds in Grade 2 and 3 that could very well have been taught in Grade 1 already. There was no appropriate assessment of decoding skills, so children with problems were not identified and remediated. The chorusing of answers gave the impression of learning, but when learners were assessed individually it became readily apparent that they had problems.

3. Absence of meaning making:

The oral orientation of teaching/learning and the whole class chorusing of answers meant that little attention was paid to discussion and meaning making. Information was transmitted orally and the whole class chorusing the information back reinforced memory of the information, but with gross imprecision, a lack of accuracy and no possibility of feedback loops for correction (e.g. Mai haus i snot ver bek could be chorused orally several times without a learner being exposed to the correct version My house is not very big or the chance of discussing the significance of such a statement). Because books hardly featured as learning tools and resources, there were few opportunities to look at words, explain their meanings, analyse their forms, read stories, talk about the characters and events, talk about the pictures, make predictions, and draw inferences. Children were seldom given opportunities to go beyond the immediate, literal meaning of information or shown how to do this when they read.

The consequences of this teaching approach are disastrous from a literacy perspective as learners are neither properly taught how to read nor given opportunities to practise their reading skills so that they can read fast and accurately and engage their reading skills in meaningful ways with texts. Low literacy levels will continue in South Africa unless we get things right in the Foundation Phase.

It is important to get learners onto a strong literacy trajectory from the beginning of Grade 1 and to sustain and build it up throughout the Foundation Phase, in the home language as well as English as LoLT. In this way, learners coming into the Intermediate Phase are better equipped to cope with the curriculum demands of Grade 4. Playing catch-up is very difficult, and it reduces the chances for success.

CAPS (Department of Basic Education, 2011) provides a far more detailed and systematic framework for teaching language and literacy content and strategies than has been the case in the past. Phonics is reintroduced, and comprehension strategies are also emphasised. The new vocabulary levels for English FAL have also been set more realistically at 2 000 to 3 500 words for Grade 4 (Department of Basic Education, 2011: 30). Hopefully, these measures will help to address some of the gaps in the system and help to put learners on firmer literacy trajectories from Grade 1 onwards.

How can we prevent falling behind? Integrated model for literacy development

According to Tabors and Snow (2001), there are different pathways to literacy development. Children who first acquire literacy in the home language have a considerable advantage, since it is easier to learn to read and write in a familiar language. Although the language factor is an important facilitating factor in literacy development, simply having home language policies in place during the early years does not guarantee literacy development; only *reading* develops reading. From a literacy point of view, the children in this study did not benefit in the Foundation Phase from home language LoLT for Zulu reading simply because reading was such a marginal activity in the classrooms.

Although it is often believed that young children should first acquire oral proficiency in a language before they begin to read or write in it, this approach in the Foundation Phase did not serve the children well in this study. In fact, it brought about an adverse delay in their English literacy development. There is a large body of research that consistently shows that early exposure to reading and writing in the L2 helps children acquire literacy in the L2 and enhances their language development (Vivas, 1996; Jordan, Snow & Porche, 2000). As this intervention study shows, the children made gains in both English language and literacy when reading and writing activities became the focus of classroom teaching.

For an education system to deliver academic results and produce learners who can maintain a livelihood in the knowledge economy of the 21st century, it needs to

produce learners who are fully literate. Academic performance depends on literacy development. There are several factors that contribute to the successful development of reading skills and that need to be in place for learners to be launched on successful reading trajectories right from the start of schooling. An integrated model of literacy development is outlined below that identifies critical factors in literacy development

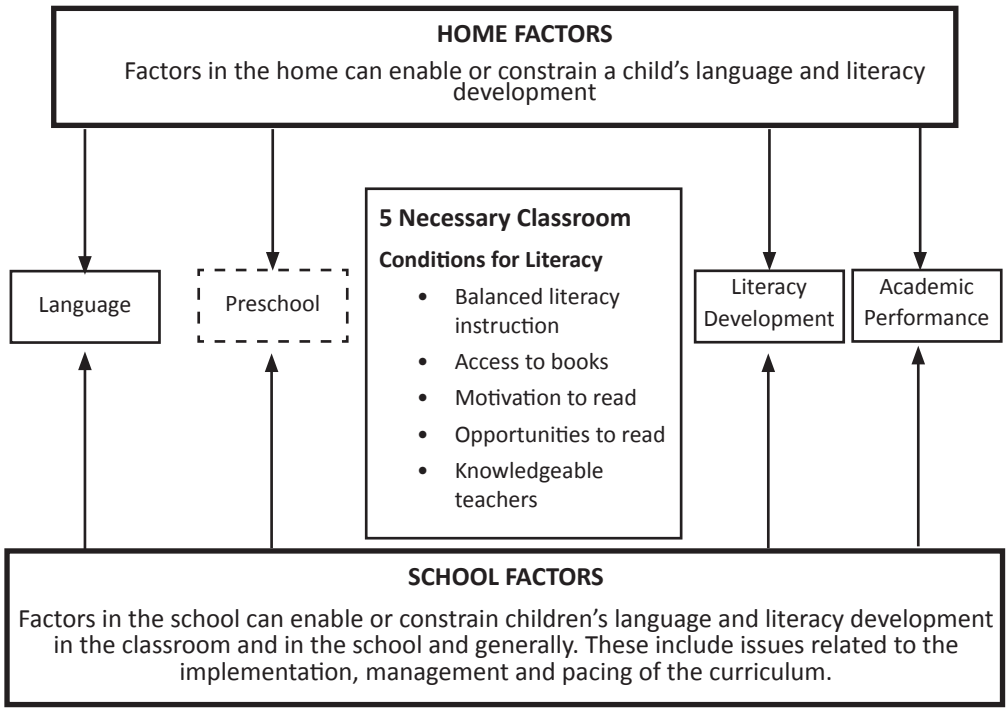

Figure 2: An integrated model of literacy development

Irrespective of the language in which early schooling is done, all children need to be explicitly taught to read, and *what happens in the classroom* has critical consequences for how well children learn to read. In order to meet minimum standards in literacy education and training, there are five necessary conditions that need to be obtained in classrooms in order for literacy to develop:

- Phonics needs to be taught systematically; automaticity in decoding needs to be developed. This can only be achieved through an understanding of the alphabetic principle which underlies our written language systems, and through constant and regular reading practice. At the same time, attention also needs to be paid to meaning making. Reading is, after all, about comprehension. We read to comprehend, and through comprehending we empower ourselves by learning, by being entertained, enchanted, or transported through reading (National Reading Panel, 2000).

- Children need easy access to books. Children need to see books in their lives on a daily basis; there should be books in the classrooms, books to read for leisure and to take home to read.
- Children need to be constantly motivated to read. A culture of reading needs to be cultivated in the classroom, with reading perceived to be a pleasurable activity and teachers showing enthusiasm for reading on a daily basis.
- Children need to be given plenty of opportunities to read, in and outside the classroom.
- Classrooms need knowledgeable teachers. Teachers need to understand the different components of reading and how they develop, and know how to assess decoding and comprehension so that they can identify where problems lie and take appropriate action.

Besides the above five classroom conditions for literacy, there are also enabling or inhibiting factors in the *home environments* that have an impact on literacy development, such as socio-economic factors, parental literacy levels, the amount and kind of literacy practices in the home, the amount and kind of extended discourse that parents engage in with their children, storybook reading in the home, the support given to children after school for homework activities, and the values that parents assign to literacy practices. Children who are exposed to storybook reading in the preschool years tend to have larger vocabularies, greater background knowledge, and better language and conceptual development than their peers who have not been exposed to books or storybook reading, and they also learn to read and write more easily and quickly (Wells, 1986; Feitelson *et al.,* 1993; Jordan *et al.,* 2000; Vivas, 1996).

Children who attend *preschools* usually find it easier to adapt to the classroom routine of Grade 1. If the children at such preschools are taught the letters of the alphabet and basic literacy skills such as drawing and writing their name, and if they are exposed to storybook reading, then they learn to read and write with greater ease when they start school. This is especially true if the language of the preschool is the same as the language of Foundation Phase (Neuman, 1999; Ntuli & Pretorius, 2005).

Although schools have little control over the socio-economic status of their learners, a range of *factors at school* also play a vital role in effective schooling. These include basic organisational functionality and good governance; appropriate authority relations and discipline; safety and security; resources (including time for instruction and reading, teacher qualification and language competence); focus on teaching and learning and academic achievement; focus on learner needs; teacher professionalism, commitment, accountability and high expectations; manageable class sizes; effective implementation of the curriculum, its pacing and management

as well as monitoring and evaluation (homework and testing) (Christie, 1998; Muller & Roberts, 2000; Harber & Muthukrishna, 2000; Scheerens, 2001; DoE, 2005).

The five classroom conditions for literacy above are critical and can go a long way in launching children on sound literacy trajectories. If these conditions are not present in classrooms, then literacy development will not take place, irrespective of other favourable factors in the home or school environment that support learning.

Acknowledgements

Funding for the project was made possible by the DG Murray Trust. The views expressed here are not necessarily those of the funders. Sincere thanks to the principal, all the learners and staff for participating so generously and willingly in the project. A special thanks to Lee Anne Walter and Virginia Mahlane who put so much heart and soul into their lessons. All five factors for successful literacy development joyfully converged in their Grade 4 classrooms.

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Footnotes

In the Burt word analysis test (1974) this mean post-test score reflects a mean reading age of about 7½ years for an English L1 reader. The mean age of the Grade 4 readers in this study was 10.2 years.