Fit for Purpose: Using a Distance Education Approach to Support Underperforming Schools in South Africa

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Abstract

This article explores the South African Department of Basic Education's national school workbook intervention aimed at addressing poor learner performance in the context of teacher under-preparedness and curriculum reform. It shows how the workbooks use a distance education approach to provide pedagogical and content support for teachers, albeit in the context of classroom teaching, to compensate for teachers' challenges. This article uses a mixed methods research approach to explore how teachers, learners and parents used the workbooks and shows that while the distance educational design scaffolded teaching, additional support is necessary to enable the intervention to be more impactful.

Keywords: workbooks; resource-based learning; distance education; underperforming schools; teacher competence

Introduction

The learners in my school performed badly in the ANA exams. Less than one third of the learners passed. ... The curriculum keeps changing—just as we start to understand one curriculum the next one pops up.

We don't have resources like the schools in town. We don't have books. ... I want to do my best but I have many challenges. (Primary School Principal, Eastern Cape, 2010)

The ANA exams are the Annual National Assessment tests administered in 2011–2015 to all schools nationally, testing learners in grades 1–6 and Grade 9 in mathematics and language.



The above quotations refer to some of the many problems South African schools grapple with, more especially those in rural areas. It was in response to these kinds of problems that an injunction by the presidency required the South African Department of Basic Education (DBE) to develop and provide resources (specifically workbooks) that would assist teachers in the critical areas of literacy and numeracy from Grade R² to Grade 9 as the poor performance of learners was a major concern (DBE 2011a).

Despite a number of endeavours to universalise education after apartheid ended, South Africa is still left with the legacy of poor learner performance—a problem especially acute among learners in low-quintile schools, especially those in rural areas. The unequal achievement of learning outcomes across a range of standardised tests showed that most primary school learners performed at unacceptably low levels.³

The poor learner performance seemed to be a reflection of teachers' inadequate abilities, as shown in the 2007 SACMEQ III assessment which showed that approximately 25 per cent of South African teachers had only primary-level schooling, with correspondingly low reading skills and mathematical literacy when compared with the other 14 SACMEQ education systems (Makuwa 2011, 3).

Taylor (2009) attributed the poor learner performance to, inter alia, inappropriate curriculum coverage, poor pacing of and insufficient homework, limited written activities per term and teachers' poor subject and pedagogical content knowledge.

Shortage of Learning Materials in Schools

Compounding the problems of poor teaching and learning is the lack of resources, specifically textbooks (DBE 2011a; Howie et al. 2008; Moloi and Chetty 2010; Rosenberg 2000; Spaull 2012; 2013; Taylor 2009). Classroom observations conducted by the DBE in 43 schools prior to the start of the workbook development confirmed the need for workbooks and other materials. It was found that teachers tried to remedy the lack of resources by writing exercises on the board or by using photocopied or homemade

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Grade R is the Reception year before formal schooling begins in Grade 1.

The standardised tests include the following: the Progress in International Reading Literacy Study (Howie et al. 2008; Spaull 2013); The National School Effectiveness Study (2007–2009; Grades 3–5) that tested the literacy competences of learners in 266 schools—Grade 3 in 2007, Grade 4 in 2008 and Grade 5 in 2009 (Taylor 2009); The South African Systemic Evaluations (2001, 2007) that tested a representative sample of Grade 3 learners in more than 2 000 primary schools, showing an average score of 30 per cent for literacy in 2001, and 36 per cent in 2007; The Department of Basic Education's Annual National Assessments administered to all schools in South Africa from 2011 to 2015 (DBE 2013); The Southern and East Africa Consortium for Monitoring Educational Quality: SACMEQ III, 2001/2007 (DBE 2017; Shabalala 2005, 222). The current article focuses exclusively on the language workbooks and not on the mathematics workbooks.

worksheets—solutions that were time-consuming, expensive and understandably challenging (McKay 2013; 2018).

The Association for the Development of Education in Africa (Nyariki and Krolak 2016, 6) refers to "evidence that increasing the provision of instructional materials, especially textbooks, is the most cost-effective way of raising the quality of primary education," and Outhred et al. (2014, 60) refer to learner support material as necessary for "bridging" systemic learning deficits, especially when curriculum changes are introduced or when teachers lack the necessary teaching skills. They contend that well-designed instructional materials strengthen learners' and teachers' interaction with the curriculum when the teacher needs support, since materials offer opportunities to reinforce and supplement teaching and learning. Similarly, Litz (2001, 6) argues as follows:

Textbooks can support teachers through potentially disturbing and threatening change processes, demonstrate new and/or untried methodologies, introduce change gradually, and create scaffolding upon which teachers can build a more creative methodology of their own.

Litz's (2001) notion of scaffolding teachers guided the conceptualisation of the workbook as a "supportive tool."

The Workbook Intervention

The injunction to develop workbooks (DBE 2011a) coincided with the introduction of the *Curriculum and Assessment Policy Statement* (CAPS) in 2011, making it necessary to rethink conventional practices around teacher and learner support in the classroom.

Shulman (1986; 1987, 8) identifies the importance of pedagogical content knowledge (PCK) for optimal teaching and learning. PCK is the integration of content knowledge (the what) with pedagogical knowledge (the how), which is critical for teachers to convey subject matter in a manner that makes it accessible to learners. Shulman's notion of PCK was central to conceptualising the workbooks and the development of a workbook per subject per grade that emulated the supportive mediating role of distance educational materials.

The conceptual design of the workbooks sought to support the instructional core (Elmore 2004), with the "teacher's voice" speaking through the materials, giving clear and purposeful activities (Allwright 1981), and interactive activities such as pair or group work (Long 1996).

To better understand the learning challenges, the development team drew on the error analyses of the Systemic Evaluations of 2007, the *ANA Diagnostic Reports* (DBE 2011b, 5) and reviewed international best practices. These findings were seminal in informing the distance educational format, design and genre of the DBE materials that would act as a

support tool to scaffold and guide teaching and learning.⁴ The workbook package (DBE 2010) thus aimed to

- provide easy-to-use and sequenced worksheets aligned to the CAPS;
- support teachers in teaching the skills learners should acquire;
- support schools that lacked learning resources;
- provide activities to ameliorate literacy/language skills deficits; and
- prepare learners for the formats used in various standardised assessments.

Importantly, the DBE did not specify "how" the workbooks should be used and it was left to teachers, schools and districts to decide how to use them, for instance, as lessons, as support to lessons, as a filler after classwork had been completed, as a substitute for textbooks, as supplementary material to textbooks, or for homework (Acer 2013; Mathews, Mdluli, and Ramsingh 2014; Saide 2012; Unisa 2014).

Considerations for Using Distance Education Methods

Distance education is generally defined as a formalised system of teaching where learners and their teacher are separated in space and time (Rumble 2001; Tait 2003). In the case of the workbooks, teachers and learners are physically in one another's presence, akin to what Komane and Mays (2001, 37) call "mixed mode," the delivery of which combines face-to-face and distance modes where the teaching is delivered by the same teachers who present conventional programmes with all learners receiving the same materials.

Rumble (2001, 5) highlights the benefits of large-scale distance educational text and other materials, stating that they:

- offer quantitative access thus enabling and expanding access to learners;
- offer economies of scale through developing large-scale programmes; and they
- equalise access for learners in remote areas or resource-poor environments.

Daniel (2010) refers to the importance of capitalising on large-scale materials development. He states that while materials often reach learners in the printed form, the digital source formats of learning materials make it possible to share them as open educational resources (OERs) for entire school systems. "Holding materials electronically means they are easy to

⁴ To support learners with visual impairment, the workbooks were adapted for Braille and produced in large print in all 11 official languages.

move around; they can readily be adapted and revised; and they can be converted to eLearning formats making online learning a possibility" (Daniel 2010, 8).

To Digitise or Not?

While the DBE opted for workbooks in print format, the materials were also digitised for interactive use, available on the DBE website and the DBE Cloud, and designed for agnostic devices and platforms requiring no special software.

Despite the many advantages of digitised materials and the DBE's zero-rated access to the digital sites,⁵ the take-up has been uneven, making more intensive advocacy necessary to stimulate the appetite for their use (personal communication, DBE ICT official, October 1, 2017). The digital divide, limited access to connectivity and technology as well as teachers' abilities to use digital technology present further impediments to the take-up of such resources.

As a result, the DBE relied on printed materials, having delivered 300 million books to learners since 2011—making the workbook intervention analogous to massive online courses with the workbooks available as OERs on the DBE website to learners across the continent

Going to Scale

The workbook intervention had to be scalable in anticipation of the expanding system. In 2013, there were about 11.9 million learners in more than 25 000 public schools, taught by 391 708 educators. The Grade R enrolment had more than doubled from 300 000 learners in 2003 to 705 000 in 2013, and with further increases anticipated, the impending national coverage necessitated that the workbooks compensate for the lack of qualified Grade R teachers.

What Language to Use?

In line with Section 6 of the Constitution of the Republic of South Africa, 1996, and the *Language in Education Policy* (DoE 1997a; 1997b), the workbooks were developed in all 11 official languages from Grade R.

The decision to develop materials in the 11 official home languages was widely supported by research. Alidou et al. (2006), McKay (2018) and MacDonald (1991; 1990) emphasise that learners are more likely to succeed academically when taught through a language they know well.

⁵ The workbooks are available on a zero-rated website

⁽http://www.digitalclassroom.co.za/digitalclassroom/index.php); there are no data charges and all content and resources can be browsed and downloaded for free.

Ubuntu as an Underlying Philosophy

Our African context required making manifest the values of Ubuntu, inclusiveness and environmental stewardship (McKay 2018) across both the overt and what McKay (2018) terms the "parallel curriculum," focusing on human interconnectedness (Letseka 2000, 179), communal togetherness (Chilisa 2009, 407), and the holistic worldview of interdependencies of people, planet and place (Oviawe 2016, 5). The Acer study (2013, 106) utilised expert judgments, teacher responses and focus groups with learners to assess whether the workbooks indeed reflected Ubuntu and the values of South Africa, as enshrined in the Constitution, and showed these to have featured "to a major extent." In addition, in our conceptualisation, we strove to ensure that the workbooks encouraged cooperative or "we-learning" through pair or group work or role play with the aim of transforming teaching practices and shifting teachers from the traditional chalk-and-talk and rote-learning methods.

Features of Distance Education as Used in the Workbooks

While distance education methods are seldom used in schooling, the texts developed for the school books were designed to function as "lessons-in-print," emulating the teacher in conversation with learners, and supporting those teachers who may have low content knowledge, weak pedagogical repertoires or limited access to learning materials.

The workbooks took on the voice of the teacher—what Rowntree (1999) describes as the "authorial voice," using the intimate "you" and "I" that are typical of a distance educational dialogue requesting learners to reflect on or respond to questions. Thus the workbooks, following a distance education genre, were very different from the impersonal voice of traditional textbooks, which Rowntree (1999) contrasts as follows:

Table 1: Textbooks versus workbooks

Traditional textbook	Workbooks following a distance-learning genre
Written to satisfy publishers and ensure the books have long shelf life	Written in consultation with teachers specifically for South African learners; they were adapted and modified annually based on feedback from schools
Primarily reflects the author's ideas of what is needed	Piloted on learners and reviewed by teachers and subject advisors to ensure relevance and curriculum compliance
Assumes a teacher will make the content relevant	Structured to make the content relevant for learners through work-related activities
Seeks a non-descript audience	Written specifically for South African learners in a particular grade at a specific time phase of the curriculum
Emphasises subject-matter content	Emphasise learning outcomes and learning processes in line with the curriculum
Focuses on knowledge and recall	Activity-driven learning, focusing on doing and understanding
Structured according to logic of subject matter	Structured according to the learning requirements at various stages of the curriculum
Does not consider likely learner errors	Draw on common errors from previous assessments
Does not mediate learning	Scaffold and guide learning
Does not give learner practice	Activity-driven learning
Encourages passive learning	Encourage active and interactive learning
Does not provide opportunities for self-monitoring of progress	Provide frequent self-monitoring through exercises and "check-yourself" activities
Overall effect is often unwelcoming	Overall effect is learner-friendly
Does not suggest pedagogical approach	Mediate the content and the methods, showing when individual, pair and group activities should take place

In addition, Ferreira et al. (2010) stress that the content, assessment and teaching and learning approaches of distance learning text for schooling should support learning outcomes and be accessibly presented using access devices such as contents pages, headings, icons and accessible layout and design. Komane and Mays (2001, 44–5) add a caution, stating that curriculum designers need to take into account the experiences and context of the range of learners—urban and rural—and the use of language.

The workbook team took seriously the need to ensure that the language of the workbooks was accessible, having noted the findings of a study on the impact of English textbooks in rural Kenya. The study found that the textbooks only had a positive impact on learners who had high pre-test scores and that they had little effect on weaker students because they could not understand the complex English register used in the books (Glewwe, Kremer, and Moulin 2009). Guided by such studies, the development team focused extensively on the language and register of the workbooks.

Using a Full-Team Approach

Given the vast range of materials needed for the project, the DBE established a development team comprising language practitioners, curriculum experts, editors and translators. The team also included artists and layout designers who worked with the authors in conceptualising the pedagogical design.

The team gave explicit attention to the illustrations layout, design and use of colours to ensure they served instructional, motivational, directional and aesthetic purposes. Care was taken to weave text and visuals or "lexivisuals" together so that they contributed to the "whole" (Reis et al. 2006, 49).

Research Methodology: A Mixed Methods Approach to Understanding the Intervention

A mixed methods approach was followed to undertake an evaluative case study of the DBE's workbook intervention. The aims of the study were twofold:

- To explore whether the distance education pedagogy embedded in the workbooks impacted on teaching and learning practices; and
- To identify areas for enhancing the use of the workbooks in schools.

Mixed methods research is often referred to as a "third movement" in the evolution of research methodology, serving as a resolution to quantitative and qualitative paradigm wars (Johnson and Onwuegbuzie 2004). The approach entails "merging, linking, or combining quantitative and qualitative data into a single study" (Creswell and Garrett 2008, 327). Mertens (2013) refers to the time dimensions of mixed methods research where the gathering of data may occur either before, during or after an intervention or as part of a longitudinal study where multi-timeous data or past and current events are related. Cameron (2009) explains how the multi-timeous mixing of data may result in nonlinear research paths that may move backward or sideways before moving forward. This, he argues, can be "highly effective for creating a feeling for the whole, for grasping subtle shades of meaning, for pulling together divergent information, and for switching perspectives" (2009, 148).

The research for this article followed a non-linear approach which, in Cameron's (2009) terms, draws on research conducted prior to, during and after the intervention. Various data sources, which have been used formatively over the past seven years to conceptualise and reconceptualise the workbooks, were used. In this sense the data were treated formatively and used in an action-oriented way (McKay 2018), feeding into the workbook development cycle to improve the materials. This can also be called an "active mixed methods research design," as elucidated by Romm (2018, 489).

Firstly, the study drew on national, continental and international assessments to gather data *prior* to the workbook intervention.

Secondly, the researcher tapped various data sources over the period of seven years *during* which she coordinated the workbook initiative. In this sense, the study is ethnographic, with the author's role being one of a participant and co-"active" researcher. During this period, the researcher interacted with learners, teachers, government officials who participated in the development, and accessed reviews of the workbooks, official reports, journal articles and commissioned studies.

Thirdly, the researcher drew on the data emanating from the findings of the following four significant evaluative studies:

- An impact evaluation conducted by Acer (2013) and commissioned by UNICEF that used a quantitative and qualitative approach to assess the quality and utilisation of the DBE workbooks among a representative sample of 969 teachers, 455 learners, 337 heads of department, 269 school governing body representatives and parent focus groups. Surveys, classroom observations and focus groups with learners, teachers and parents were conducted. The author participated in reviewing the various instruments used in this study.
- The 500 Schools Project (Unisa 2014), conducted to investigate, inter alia, the utility of the workbooks in *underperforming* schools, surveyed 257 principals and 1 170 teachers from across the five provinces and conducted focus-group interviews with learners, school management teams, parents, school governing bodies and teachers. The author designed the workbook survey questions.
- A DBE (2016) rapid impact assessment that surveyed and interviewed a sample of 32 teachers on the utility of workbooks for which the author designed the instrument and the interview schedule.
- A rapid research assessment (Saide 2012) that examined the effectiveness, quality and ease of "navigating" the materials. Interviews were conducted with principals, grades 3 and 6 teachers and heads of department; lessons were observed and learners' workbooks were collected and analysed.

Findings on Usage

The following section draws on the four studies mentioned above to show the utility of workbooks in the classroom context by assessing the extent to which they

- were optimally designed for learning;
- were sufficiently scaffolded to support teachers;
- organised, sequenced and paced learning;
- were used regularly in and out of the classroom;
- were user-friendly for teachers, parents and learners; and
- improved learning outcomes.

Optimal Design for Learning

All four studies referred to the design and artwork as being appealing to learners, stating that learners "liked or wanted to work with the materials." Teachers commented on the "pedagogical" use of colour, stating that the colours demarcating the themes, terms and weeks aided their teaching. In the DBE (2016) study, two respondents (the first an urban Grade R teacher and the second a township Grade R school teacher) stated:

The children like the pictures a lot because it's a part of their world. When I say that we are going to work in our workbooks they become very excited. Learners enjoy the colours and the pictures. When I give out the books, they immediately start to page through it and look at the colourful pictures.

They enjoy using their books ... the pictures are very clear and colourful and they become very eager. The realistic colours of things help learners to relate to the real world. ... When I read the stories to them, they listen attentively and they get excited when they see the pictures.

When asked about the multicultural illustrations (DBE 2016), most teachers pointed out that children were oblivious to the social mix. An urban Grade R teacher observed,

They love the characters. They don't even recognise the different races in the book. It makes no difference if it is a boy or girl.

In some cases, learners did notice the multicultural pictures of children and as one rural Grade R school teacher commented:

My learners notice the different races in the pictures. They ask why there are no whites and Indians in their school.

The author (McKay 2016), who coordinated the study, summed up the findings as follows:

In the workbook development process, we felt it was vital that the learners should receive workbooks they would like using. The books had to be colourful and inviting, and they had to cater for a wide range of different social contexts and interests. They also had to be fun and learner-friendly, so the design included cut-out puppets, masks and games. ... Sensitivity to all aspects of culture and inclusivity was a core concern. Were girls featured as often as boys, and were they portrayed in [active] roles? Were the materials sensitive to urban and rural realities, to disability and poverty? And were appropriate values demonstrated through the materials? The authors had to pay as much attention to the "hidden curriculum" as they did to the official curriculum.

In incorporating the visuals, special attention was given to briefing the artists, giving detailed specifications about the elements of the drawings, with particular reference to the racial and cultural composition (McKay 2018).

Scaffolded for Teaching

To determine the extent of assistance the workbooks gave teachers, the Unisa 500 Schools Project (2014) required teachers to state whether or not there had been any improvement in learner achievement between the 2011 and 2012 ANA results and to explain why or why not. Approximately 60 per cent of the teachers indicated an improvement (2014, 52–3), pointing out, for instance:

Schools now had workbooks which formed the basis of communication between the educators and the examiners.

The use of workbooks available to learners every day helped tremendously.

Teachers paid attention to the workbook, as the style of questioning was similar to the requirements of the ANAs.

The workbooks had similar examples to ANA questions ... were now easily available for learners to practise ... thus eliminating problems teachers previously encountered.

The workbooks give lots of reading and comprehension for practice.

The learners were compelled to fill in their answers in the spaces like they do in their tests.

Workbooks were useful for homework.

Teachers benefited from the materials and had a deeper understanding of the types of exam questions they could expect.

However, while the books were very well received, many teachers stated that they had not been trained to use the books and were not sure whether they were using them correctly—this matter recurred across the other studies.

Organising, Sequencing and Pacing Learning

To organise learning, the workbooks are sequenced by term and week in accordance with the CAPS, with each week comprising four worksheets. The worksheets typically have the features illustrated in figures 1 to 6:



Figure 1: Grade 1 English Home Language

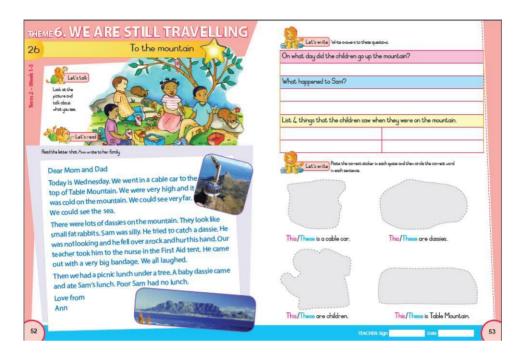


Figure 2: Grade 3 English First Additional Language

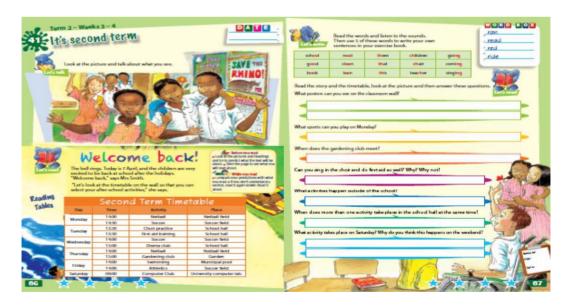


Figure 3: Grade 4 English First Additional Language

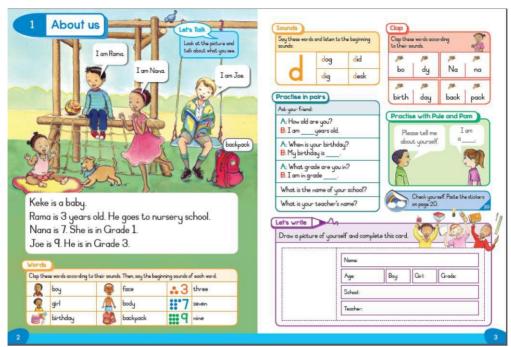


Figure 4: Grade 3 English Second Additional Language

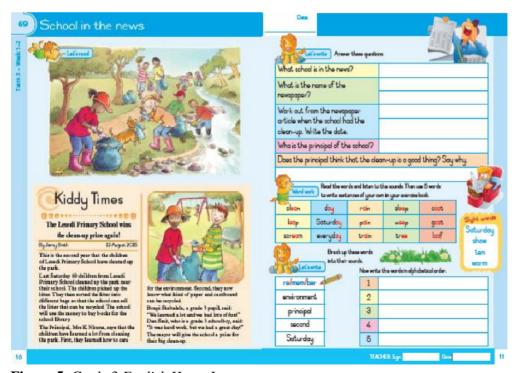


Figure 5: Grade 3 English Home Language

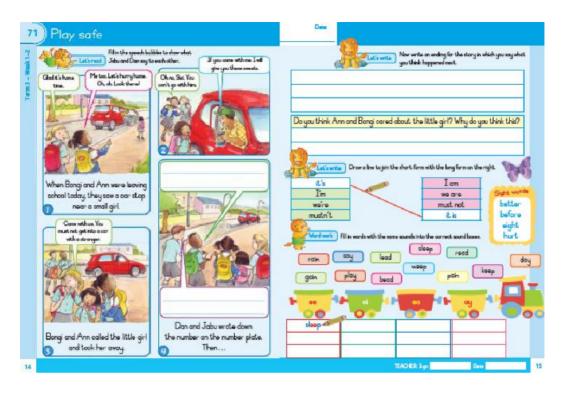


Figure 6: Grade 3 English Home Language

Note: Figures 1–6 reprinted from the DBE's *Curriculum Learning and Teaching Support Materials*, *Workbooks* (2017)

As shown in figures 1, 2, 3, 4 and 6, the worksheets signpost the term and week for which it is intended. All the figures show how the learning is guided by the use of icons that specify reading, writing, speaking, pair and group work. Figure 4 is an English translation from a second additional (African) language book which involves mainly oral work to encourage inclusivity and interracial communication (DBE 2013). All figures except for Figure 4 show how the teacher's marking (or seeing the work) is ensured by requiring the teacher to sign and date the worksheet.

In evaluating the utility of the workbooks, Acer (2013, 140) developed a utilisation index based on sequencing, pacing and correcting learners' work.

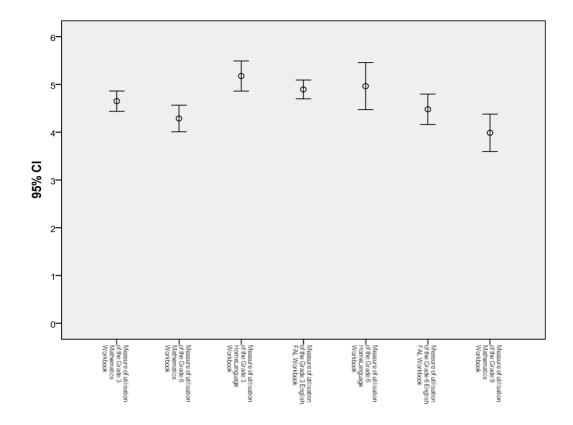


Figure 7: Workbook utilisation based on sequencing, pacing and correcting (Acer 2013, 140)

In applying this utilisation index to a representative sample, Acer (2013) shows, as seen in Figure 7, that the workbooks facilitated pacing, sequencing and correction. However, the Unisa study (2014), which only sampled underperforming schools, found the pace too quick, while the Saide study (2012, 7) reported contrasting teacher views about the pace in the workbooks.

Regularity of Use in and out of the Classroom

The Acer and Unisa studies assessed how regularly the home language workbooks were used in class and for homework. With regard to "in-class" usage, both Acer (2013) and Unisa (2014, 74) found that although most teachers indicated that they completed the four daily worksheets per week, some teachers needed to go beyond the four days because learners were unable to complete the work in the allotted time.

In regard to teachers' use of the English First Additional Language (FAL) workbooks, Unisa (2014, 77) found that teachers also went beyond the requisite two FAL worksheets per week. Of the 1 172 responding teachers in the Unisa study, 500 (42.7%) taught English

as FAL, using their workbooks at least 3.5 times per week, confirming the finding referred to earlier that the workbooks' pacing was contingent on the context, since learners in underperforming schools needed more time to work through the materials.

The Workbooks Enable Homework

As indicated in Table 2, the Unisa (2104) study found that between 80 per cent and 90 per cent of the learners used their workbooks for homework purposes.

Table 2: Learners' use of home language workbooks for homework, by province

Use of home language workbooks	KwaZulu- Natal	1 :		Eastern Cape	Mpumalanga
Yes	89.4%	85.4%	89.1%	93.4%	86.1%
No	10.6%	14.6%	10.9%	6.6%	14.0%

Acer (2013) also found that the workbooks were used very regularly for purposes of homework or revision. Figure 8 reflects the learners' reports of the number of times they had used their workbooks for homework or revision in the previous week.

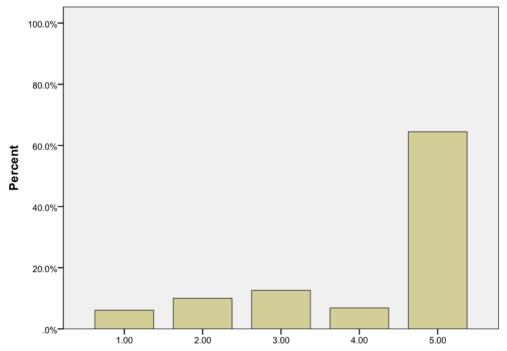


Figure 8: Workbooks used for homework or revision in the previous week as reported by learners (Acer 2013, 64)

Acer (2013, 71) reports that 71 per cent of learners were assisted by parents or guardians in completing homework in their workbooks, with parents indicating that the workbooks

- increased homework completion;
- enabled children to complete exercises cooperatively with friends;
- encouraged learners to seek assistance from family and others when they required help; and
- enabled parents to know and understand what their children were learning.

Many parents indicated that they themselves learned from the workbooks. Those who lacked literacy skills regarded the workbooks as valuable tools that "teach us what the children are learning in school."

Parents noted the following with regard to their children's experience:

- The workbooks stimulated their children's interest in learning and school work.
- Their children's attitude and behaviour towards homework changed.
- Their children showed increased confidence, motivation and focused attention when using the workbooks.
- Children took pride in the work they did in their workbooks.

Acer's (2013) qualitative responses showed that while some parents were able to help their children with homework, others struggled with the written language due to their own level of education. In these instances, other family members, neighbours or the parents' employers assisted. In addition, learners were able to work independently or with friends.

An observation of one of the learners that "I do not understand the maths teacher but I understand the workbook" (Acer 2013, 18) provides evidence that the workbooks offered a way of circumventing poor teacher quality.

Improving Learning Outcomes

The DBE study found that if children took their books home they would often return with all the exercises completed! While perceived negatively by some teachers, it is evidence that the workbooks enabled very young learners to work autonomously. Acer (2013) explored the extent of teachers' marking of the various workbooks (see Figure 9). It is recognised that the demonstration of marking does not refer to the quality of the marking

or the way in which the marked work is used but it does show at the very least an awareness of learners and teachers that the work has to be acknowledged.

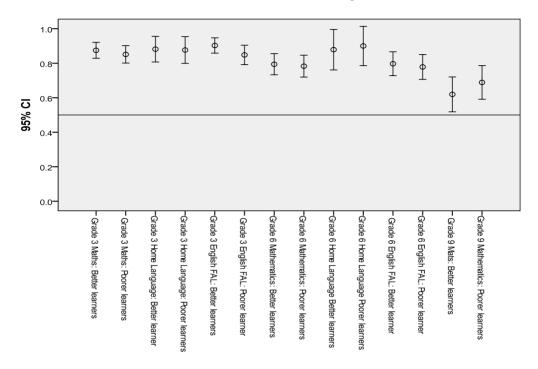


Figure 9: Classroom observations showing evidence of teachers' assessment or marking of learners' work (Acer 2013, 58)

It is argued that the workbooks offered critical systemic support and that they contributed to the improvement of learners' results, as was shown in the later versions of ANA and SACMEQ IV (SACMEQ 2017) scores.⁶

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⁶ Although criticism is levelled at the DBE's Annual National Assessments, they constituted the only large-scale/representative assessment across the 11 official languages. The SACMEQ and the International Association for the Evaluation of Educational Achievement's PIRLS assessments did not cater for all the 11 official languages.

Table 3: Overall achievement trends (SACMEQ III in 2007 to SACMEQ IV in 2013)

Reading			Mathematics			
SACMEQ	SACMEQ	SACMEQ	SACMEQ	SACMEQ	SACMEQ	
II	III	IV	II	III	IV	
492	495	538	486	495	552	

Note: These figures are taken from DBE (2017, 27).

The DBE (2017, 27) states that the reported SACMEQ IV improvements corroborate the findings of the 2015 Trends in International Mathematics and Science Study (HSRC 2016), reflecting a narrowing of the gap in achievements between urban and rural provinces while acknowledging that these improvements are from a very low baseline.

Moreover, amidst the contestation regarding learner performance in PILRS, Paula Korsnakova, of the International Association for the Evaluation of Educational Achievement (in a personal email to the author, September 14, 2018), points out that Grade 5 South African students have participated in all PIRLS assessment cycles. She refers to the 2016 PIRLS Trend Analysis which reports on the testing of a sample of 5th Grade learners whose medium of instruction was English, Afrikaans or Zulu. She indicates that "this score was compared to the results from 2006 and the score went from 350 in 2006 to 406 in 2016." While not yet at an acceptable level, an improvement in achievement needs to be acknowledged—with the workbooks among the suite of interventions aimed at improving learning outcomes.

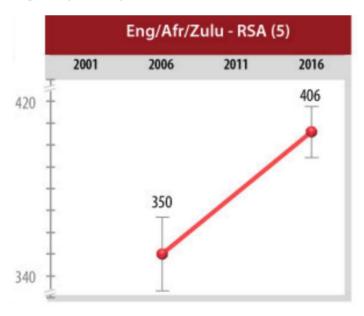


Figure 10: Benchmarking Grade 5 trends in PIRLS (TIMMS and PIRLS 2016)

Conclusion

Through "mixing" the data of the various studies with their varying areas of focus and varying samples, many issues are highlighted. As reported, the four major studies concur that the workbooks serve as tools for support especially in underperforming and underresourced schools—more so where teachers' capacities are limited. Teachers participating in these studies agreed that the workbooks were appealing, that their learners were enthusiastic about using them and that they offered support to teachers, learners and parents.

The four major studies referred to the alignment of the workbooks with the official curriculum in terms of learning outcomes, assessment standards and milestones. While some authors (e.g., Hoadley and Galant 2016) suggest that the workbooks do not sufficiently challenge learners, the four major studies found the pace challenging.

Saide (2012) noted that the books provide models of good language usage, a vital factor since it is not uncommon to see incorrect language usage on the chalkboard in South African classrooms, especially where the medium of instruction is English, which many teachers do not speak as their primary language.

It was apparent that teachers used the books in different ways deriving different outcomes. As Saide (2012) states, the workbooks are typically used

- to consolidate the learners' understanding and mastery of a topic;
- to provide additional activities that learners could use to practise concepts at appropriate levels;
- as source materials on which to base lesson content: and
- as supplementary material.

Saide (2012) recommends training to expand teachers' abilities to use the workbooks more effectively to introduce new concepts or skills, and as they note, while the learners' work is currently marked in the workbooks, teachers can be shown how to assess learner performance against the official assessment criteria. This will improve how learners use the workbooks, and how the teachers mark and record their work so that teachers use learners' responses formatively and diagnostically. Workbook training should be incorporated into all CAPS training to enable teachers to see the workbooks as integral to the curriculum and not as an independent intervention.

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