Rural Education Project
A school improvement initiative
RESEARCH REPORT 2006–2009
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FOREWORD

As South Africans, we need little reminding of the enormous challenges facing the education system in this country. While this is evidenced in all levels of schooling, it is in the early grades where faltering attainment levels in numeracy and literacy are a stark reminder of the extent of the system’s underachievement and failure.

This is most apparent in rural primary schools, where the legacy of apartheid underpinned by high levels of structured poverty and inequalities perpetuates a system of poor quality education that is pervasive and oft-times seemingly resilient to positive change.

It is in this environment that the Rural Education Project (REP) has focused its attention over the past four years – in a group of 38 primary schools scattered throughout the rural districts of the Western Cape Province. During this time REP has engaged teachers in a mix of school-based support and off-site academic professional development. In the course of this work the project has gleaned significant insights into the complexities and difficulties of bringing about educational change in such a context. And most importantly of all, REP has broken new ground by anchoring itself systemically and conceptually in ways which we believe provide important pointers towards a more sustainable model of school improvement.

It goes without saying that to bring about substantial and sustained change takes time. As others have found before us, we conclude that there are no educational quick fixes, nor magic bullets. Rather, there is a range of systemic issues that can only be corrected over time and with considerable effort. It is with this goal in mind that we share the insights and learnings of the Rural Education Project.

Dr Jonathan Clark
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Acknowledgements

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The project would not have been possible without the valued participation and contributions of the WCED staff, principals and teachers from the 38 participating schools and the rural education district directors, curriculum managers and circuit teams We thank them most sincerely for their commitment and collaborative efforts to improve Numeracy and Literacy teaching and learning in our primary schools.

Appreciation goes to the University of Cape Town’s Schools Development Unit Director, Jonathan Clark and to the previous Director, Lydia Abel, for their support, patience and encouragement during the four phases of the project.

The REP project team is acknowledged and thanked for the hard work, long hours and dedication they put into the project. The team travelled long distances to remote places, spent many hours away from family and home, often over weekends, always with a passion and commitment to our colleagues and learners in the project schools. They are: Diane Hendricks (co-ordinator), Tami Mhlati, Gary Powell, and Kaashief Hassan, as well as the people who were no longer part of the team when the project was concluded: Zonia Jooste, Pam Ncapai, Dinise Priga, Chester Davids, Joey Joubert, Lilly Manuel and Kim Andreoli. The REP team also thanks our SDU colleagues, Norman Davies and Anthea Roberts, for their contributions and involvement in the project.

Special acknowledgement goes to Susan Meyer for her tireless dedication to the project as a contributor to the seed process and member of the above education specialist team, and to Julia Isaacs for her assistance and input in the early stages of the project. The project also thanks the monitoring and evaluation team, Brenda Sonn and Karen Collett, from the University of the Western Cape’s Transforming Institutional Practices (TIP), and appreciates the contributions made by Marianne Spies and Carel Garisch.

The project team would not have been able to complete their work in the field without the administrative support offered by the following people: Catherine Harrison, Sandra Adams, Janine Rich and Adrienne Magerman. We thank them most sincerely.

Finally, REP thanks Jeanne Gamble, Heather Jacklin and Tim Dunne for their conceptual support and guidance to the project team during the conceptualisation and analytical phases of the project.

Cally Kühne
Project Manager
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<td>ACE</td>
<td>Advanced Certificate in Education</td>
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<tr>
<td>AS</td>
<td>Assessment Standard</td>
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<td>CA</td>
<td>Curriculum Advisor</td>
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<td>CASS</td>
<td>Continuous Assessment</td>
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<td>CLF</td>
<td>Claude Leon Foundation</td>
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<td>COCA</td>
<td>Count One Count All</td>
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<td>CTLI</td>
<td>Cape Teaching and Leadership Institute</td>
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<td>EDO</td>
<td>Education District Office</td>
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<td>EMDC</td>
<td>Education, Management and Development Centre</td>
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<td>FAL</td>
<td>First additional language</td>
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<td>FAS</td>
<td>Foetal Alcohol Syndrome</td>
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<td>FfL</td>
<td>Foundations for Learning</td>
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<td>FP</td>
<td>Foundation Phase</td>
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<td>GTZ</td>
<td>Deutsche Gesellschaft für Technische Zusammenarbeit</td>
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<td>HEQC</td>
<td>Higher Education Quality Council</td>
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<td>HoD</td>
<td>Head of Department</td>
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<td>ICT</td>
<td>Information, communication and technology</td>
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<td>IP</td>
<td>Intermediate Phase</td>
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<tr>
<td>IQMS</td>
<td>Integrated quality management system</td>
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<td>LA</td>
<td>Learning Area</td>
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<td>LoLT</td>
<td>Language of learning and teaching</td>
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<td>LSEN</td>
<td>Learners with special educational needs</td>
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<td>LTSM</td>
<td>Learning and teaching support material</td>
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<td>MoU</td>
<td>Memorandum of Understanding</td>
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<td>NCS</td>
<td>National Curriculum Statement</td>
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<td>NGO</td>
<td>Non-governmental Organisation</td>
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<td>OBE</td>
<td>Outcomes-based education</td>
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<td>OD</td>
<td>Organisational development</td>
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<td>OTL</td>
<td>Opportunity to learn</td>
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<td>POP</td>
<td>Project operational plan</td>
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<td>PPM</td>
<td>Project planning matrix</td>
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<td>REP</td>
<td>Rural Education Project</td>
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<td>SDU</td>
<td>Schools Development Unit</td>
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<td>SES</td>
<td>Socio-economic status</td>
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<td>SIP</td>
<td>School Improvement Plan</td>
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<td>SMT</td>
<td>School Management Team</td>
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<td>TIP</td>
<td>Transforming Institutional Practices</td>
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<tr>
<td>UCT</td>
<td>University of Cape Town</td>
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<td>WCED</td>
<td>Western Cape Education Department</td>
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<td>WSD</td>
<td>Whole School Development</td>
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Scope of the Report

The Rural Education Project (REP) was conceptualised as a whole-school intervention that included a research component. Research was thus not the primary focus of the project but ran as an underpinning thread, alongside the internal monitoring and evaluation process. In Phase 4 (the final phase of the project), all staff went through a process of reflecting on and writing about what they had done. These findings, as well as the findings of the final monitoring and evaluation report, form the basis of the research report.

However, observations by REP specialists in different schools and at different times do not necessarily constitute a systematic body of empirical data, so each set of observations is linked to already existing findings of larger South African research studies. In this way REP’s small-scale findings gain a cogency that allows for broader generalisation than would otherwise be possible. This allows REP to contribute to the body of research on South African school improvement that is systematically being built.

The report is divided into three parts, which can be read in sequence or as stand-alone topics. These are:

Part 1: The Rural Education Project (REP) as a school development intervention
Part 2: Factors that impact on literacy and numeracy achievement
Part 3: A model for building internal accountability through teacher professional development

Part 1 offers an overview of REP’s activities over the four years of the project’s duration, drawing briefly on international and local literature on school effectiveness and school improvement to put forward a series of conceptual lenses that throw light on what it is that enables schools to respond to external accountability measures such as diagnostic tests. The lenses are:

Lens 1: Internal accountability
Lens 2: Interpretation of diagnostic test results
Lens 3: Instructional practice as a shared public good
Lens 4: Knowledge-based teaching
Lens 5: Systemic synchronicity

The conceptual lenses are employed in a systematic retrospective analysis of the REP intervention to set up two generalised models. The first model shows the structure underlying the multi-level, simultaneous school improvement strategies employed. The second shows the authority structure on which REP was based.

A consideration of the sustainability and replicability of REP-type interventions shows that what sets this project apart from many other interventions that rely mainly on staff expertise for educational credibility, is its systemic anchorage in the Western Cape Education Department (WCED) combined with its conceptual anchorage in the University of Cape Town (UCT). In this way the project sought to embed itself in longer-term relations of
support and provision that could continue after REP itself came to an end. In conclusion, a number of factors are identified that would facilitate longer-term integration of a REP-type intervention into WCED structures.

**Part 2** of the Report responds to two WCED strategies which framed REP as a school intervention project. The first is the annual diagnostic tests in Numeracy and Literacy. The second is the WCED Literacy and Numeracy strategy (2006–2016), which is linked to the province’s Human Capital Strategy and the challenge presented by the low levels of literacy and numeracy indicated by tests results, as well as their high correlation to poverty.

After presenting the diagnostic test results in REP schools for the period 2006 to 2009 and explaining the structure of the tests, we focus on four areas in which practices were found that constrain effective teaching and learning. These areas relate to the focus of REP’s work in 38 rural schools. The areas are:

- schools’ grasp of the results of the diagnostic tests as set out in the School Reports, which each school receives after a round of tests
- correlation between Grade 3 diagnostic tests results and internal assessment results for the same learner cohort in Grade 4
- specific features of classroom pedagogy
- the language of teaching and learning (LoLT)

While it is recognised that these factors are by no means the only ones to which poor levels of Numeracy and Literacy could be attributed, REP’s findings are that:

1. In their existing form the School Reports sent to each school to inform them of their Grade 3 and Grade 6 diagnostic test results are of limited use in terms of the purposes for which they are intended.

   The Report puts forward a number of suggestions that could help the WCED to enhance the diagnostic potential of these reports.

2. Internal assessment is an area of challenge in most schools, with significant discrepancies between internal assessment in schools and the WCED diagnostic test results, and little evidence of a cascading effect from external diagnostic results to actual improvement of internal school assessment.

3. Schools do not make use of the range of assessment strategies available to them in policy terms. Baseline diagnostic assessment is not standard practice at the start of the school year. This critical omission is especially evident in the transition from Foundation to Intermediate Phase (between Grade 3 and Grade 4).

4. When REP education specialists observed classroom practices in Literacy and Numeracy classes, they found little evidence of teachers having an explicit understanding of the conceptual goals underpinning their lessons. What was found instead was that procedural knowledge is substituted for conceptual knowledge, but it is procedure of *process* rather than procedure derived from content. This finding confirms strong
evidence from a range of formal research studies that point to lack of conceptual and content knowledge related to their subjects as a major factor in the way teaching practice is conducted in South Africa.

5. In the classrooms observed where isiXhosa is the language of instruction, there is neither strong home language development nor additional language development. A mixture of languages is used in both spoken and written work.

6. Confusion around how additive bilingualism should be implemented in practice extends to other Learning Areas (LAs), such as Numeracy, as much as it applies to the learning area of Literacy.

Taken together, these findings go a long way to explaining why it is that diagnostic test results remain low, despite concerted efforts by district officials, REP education specialists and schools themselves to effect an improvement. The overall conclusion that can be drawn is that many schools are faced with systemic challenges and shortcomings in teacher expertise that will take time to be corrected.

**Part 3** puts forward a general model for school improvement that involves an integrated approach of support at all levels of the system. This links to the multi-level simultaneous school improvement strategies which REP employed. From REP’s experience, as well as from the literature discussed, effective schooling and instruction depend on the degree to which processes and practices are aligned and articulated in relation to the entire system that supports education, including the national and provincial education departments, the whole school and parent community. The model draws on and supports the recommendations of the *Report of the Task Team for the Review of the Implementation of the National Curriculum Statement* (2009).

It is hoped that the issues discussed in all three parts of the Report contribute to an enhanced understanding of the support role that was the focus of REP’s intervention in rural schools.
PART 1
THE RURAL EDUCATION PROJECT (REP) AS A SCHOOL DEVELOPMENT INTERVENTION

Schools do not improve by following a set of rules; they improve by engaging in practices that lead them to be successful with specific students in a specific context. Hence sustained improvement depends on the development of a diagnostic capacity and on the development of norms of flexibility in practice (Elmore, R. F. 2008. Leadership as the practice of improvement p. 47).

Change is a thirty-year project and you have to solve the situation district by district and school by school (Statement by Dr Nick Taylor of JET Education Services, as reported in the 2008 Conference Report on What works in schools development? p. 7).

INTRODUCTION

Part 1 of this report has the following aims, namely to:

- offer a thumbnail overview of REP’s activities over the four years of the project’s duration
- draw briefly on international and local literature on effective school development to put forward a series of conceptual lenses for interpreting REP as a developmental intervention
- present the REP project as a series of conceptual models that show the inter-relation between the different components
- consider the sustainability and replicability of REP-type interventions

THE RURAL EDUCATION PROJECT: AN OVERVIEW

The Rural Education Project (REP) was a four-year inter-departmental primary school improvement initiative between UCT, the WCED, the Claude Leon Foundation (CLF), and the Foschini Group. The project aimed to improve the quality of teaching and learning in 38 primary schools in the rural Education Districts of West Coast, Cape Winelands, Overberg and Eden and Central Karoo. REP was established in response to an offer from the CLF in 2005 to make funding available for a WCED school improvement project.

The project was set up against a backdrop of poor Numeracy and Literacy performance as indicated on international, national systemic and Western Cape Grade 3 and 6 diagnostic tests (2002–2009), as well as limited access to educational support, resources and training. Rural Afrikaans and Xhosa medium of instruction schools were amongst the weakest performing schools and represented the poorest schools in terms of poverty quintile 1.
The project consisted of the following phases:

- Phase 1: Seed process
- Phase 2: Project set up
- Phase 3: Project implementation
- Phase 4: Consolidation and Exit

**Phase 1: Seed process (2004–2005)**

Following a period of lengthy discussion that involved senior management from the WCED head office, rural Education District Offices (EDOs), Higher Education Institutes (HEIs), Non-governmental Organisations (NGOs) and education consultants, it was agreed that the focus of this project intervention would be on rural primary school Numeracy and Literacy improvement. A situation analysis contextualised the educational problems faced in rural communities and drew substantially on the findings of the Columbian Escuela Nueva systemic pilot school improvement model (Schiefelbein, 1992; Kline, 2002), which included educational components such as field work, workshops, instructional centres, teacher networks, programmed instruction, tutoring, demonstration, textbooks and progressive training and site follow up.

A proposal was presented to the CLF, which outlined an intervention project that would:

- address poor learner performance and complexities of teaching and learning in rural schools
- plan collaboratively with WCED Head Office and rural EDO Curriculum Advisors (CAs), in line with (1) the National Curriculum Statement (NCS); (2) WCED’s Strengthened Numeracy and Literacy Strategy; and (3) School Improvement Plans (SIPs) and policies, to ensure sustainability and replicability of these plans
- align intervention programmes to support EDO officials and schools to implement national and provincial policies and continuing professional development initiatives, namely Cape Teaching and Leadership Institute (CTLI)
- encourage inter-departmental co-operation within and across the system (classroom, whole school and EDO)
- develop appropriate differentiated intervention strategies within a district-based implementation plan that are sustainable and replicable and impact significantly on the way education is offered and supported in Western Cape rural primary schools
- contribute to current knowledge on rural education development
- deepen our understanding of school practices, programmes and systems, in order to inform policy and similar future teacher practice and learner performance
- increase student registration on higher education academic programmes (namely, Advanced Certificate and Masters programmes)

The Schools Development Unit (SDU) of UCT was nominated as the lead agent and an agreement to this effect was signed between UCT’s Vice- Chancellor and the CLF chairperson. The project manager post was advertised and an appointment made in October 2005.
Phase 2: Project set up (2005–2006)

Project Governance

The set up of the project structure in 2005 was critical, as the parties involved at this level of decision-making were to determine the strategic direction and effective collaboration between all stakeholders in order to support the successful effective implementation of the project.

1. A Steering Committee was established, chaired by the project manager, with representation from the SDU, the School of Education of UCT, the CLF and the WCED (represented by the then Chief Director of Regional Services Rural Schools/Special Projects and the Director of Curriculum Development, who had been part of the seed process and initial negotiations with the funder and UCT), as well as external consultants.

2. A management team consisting of the project manager, SDU Director and two SDU education specialists was established to co-ordinate the project set up and interventions. In addition, the REP project manager tabled REP progress reports at a quarterly WCED rural project committee, chaired by the Regional Services Chief Director.

3. The agreement between WCED and SDU was ratified, and the Deputy Director-General signed a Memorandum of Understanding (MoU).

Funding

The CLF provided core funding of R5 million (66, 50%) and the project manager procured the balance of the funding for the total budget in the following ways:

- The Foschini Group contributed R1 million (13. 30%) to be allocated in four tranches annually
- WCED contributed R1 244 693 (16, 55%) in the form of bursaries and towards project line items linked to courses

Project Planning

A process of participatory planning with stakeholders resulted in the development of:

- a logic model and project plan (project planning matrix – PPM), which provided the deliverables and outcomes of the project
- project operational plans (POPs) that provide activities for each phase and level of engagement
- a literature review to focus the development of professional support programmes and provide a conceptual framework – specifically around school-based interventions and Whole School Development (WSD) approaches, mainly in the field of school effectiveness
- a formative monitoring and evaluation process with reflective feedback loops
Building a Relationship with the WCED

The REP seed process included representation from WCED head office, with project governance structures established to maintain these institutional links at various levels of implementation.


Several forums were established to facilitate effective communication and information. A *steering committee* met quarterly and representatives from the funders, WCED, UCT and an external consultant, included: Prof Crain Soudien (HoD School of Education), Mr Dave Gilmour (UCT,SDU Board), Dr Lydia Abel (SDU,UCT Director), Prof Nan Yeld (UCT,CHED/CLF trustee), Ms Julia Isaacs (Deutsche Gesellschaft für Technische Zusammenarbeit – GTZ), Ms Sindi Shayi (WCED Chief Director Regional Services) and Ms Jenny Rault-Smith (WCED Director Curriculum Development).

The WCED Chief Director of Regional Services chaired an *executive meeting* quarterly, and the agenda focused on rural schools and WCED special projects (the Multigrade Initiative and REP). Representatives on this forum included Directors of EDOs (formally referred to as Education, Management and Development Centres – EMDCs), Numeracy and Literacy support staff and project teams. In addition to this forum a *working group* was established at district level consisting of the EDO Directors, Curriculum Managers, designated EDO curriculum staff and project education specialists. This group met quarterly in each district to plan and co-ordinate interventions.

**Stakeholder meetings**

Several stakeholder meetings were held and facilitated by GTZ. WCED and external consultants attended these planning sessions to ensure a common understanding of REP and to bridge the transition from the seed process to the implementation stage of the project. Project plans and the implementation framework were agreed to prior to direct contact with schools.

**Structural relations**

Figure 1.1 (page 5) provides an organogram of the WCED in 2006, and illustrates how the project was located within the various WCED Directorates.
Following a period of WCED restructuring (2007), the rural districts were re-delineated to coincide with municipal boundaries. The three former rural EMDCs were replaced by four Education Districts – West Coast, Cape Winelands, Overberg and Eden Karoo. This restructuring impacted on the composition of the REP Steering Committee, and without the institutional positioning described above, the project forums were not able to function as originally planned. Figure 1.2 (below) shows the current WCED organogram and indicates how the key WCED officials were no longer directly involved in the project governance.
School Selection

Through a process facilitated via the rural EDOs, schools were invited to apply to participate in the project at the beginning of 2006. Schools had to motivate their applications, and were asked to identify schools within a geographic location who would also like to apply. From the outset geographic clustering was intentional, to encourage collaboration and community of practice methodologies. 97 schools applied and the final selection was made based on agreed upon criteria established with the WCED Research Directorate.

38 schools were selected within a 400 km radius of Cape Town. These schools represented a sample of the cross-section of Western Cape schools that were identified as ‘rural’, by virtue of their regional location. At the time the WCED structure included the three rural EMDCs. However, in 2008, as part of the WCED re-design, the REP schools were organised into the twelve regional clusters shown in the table on the following page.
### Table 1.1 REP school clusters

<table>
<thead>
<tr>
<th>District</th>
<th>Cluster</th>
<th>No of schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eden and Central Karoo</td>
<td>Knysna</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>George</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Oudtshoorn</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mossel Bay</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Van Wyksdorp</td>
<td>1</td>
</tr>
<tr>
<td>West Coast</td>
<td>Darling</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Clanwilliam</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Vredendal</td>
<td>4</td>
</tr>
<tr>
<td>Overberg</td>
<td>Caledon</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Riviersonderend</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Napier</td>
<td>2</td>
</tr>
<tr>
<td>Combined Overberg and Cape Winelands</td>
<td>Villiersdorp</td>
<td>4</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>38</td>
</tr>
</tbody>
</table>

REP clustering did not necessarily coincide with EDO clustering, which was organised around specific EDO programmes. For example, the Overberg EDO arranged two different types of clusters, namely: Learning Area (LA) clusters, and circuit clusters (which are smaller groupings than the LA clusters) where EDO Circuit Teams identify areas for development. The Eden and Central Karoo work in clusters according to Foundation or Intermediate Phase. These clusters are not circuit specific and teachers attend cluster sessions at the most convenient venue.

In REP clusters particular interventions were developed with the schools in each cluster so that a geographical network of inter-school support and collaboration could develop. Education specialists also worked with EDO staff to build capacity at each school in order to create a sustainable community of educators who would share ideas and provide intra-school support.

**Situational Analysis**

A *baseline audit* of the 38 schools was conducted in 2006 and included both quantitative and qualitative data.

A *quantitative profile* dimension was provided by the WCED Research Directorate, drawn from the EMIS and Central Education Management Information System (CEMIS) databases, as well as from the Snap Survey and Annual Survey of Schools. The data included:

- demographic profile of each school
- summary of WCED Grade 3 and 6 diagnostic test results obtained between 2002 and 2005
- language of instruction and learners’ home language
- staff profile, namely, level of professional qualifications, teaching experience, tertiary study and grade/subject appointment, and permanent and temporary appointments
The baseline audit did not include the following information:

- proportion of school fees that are collected annually by schools that charge fees
- number of learners with special educational needs (LSEN) learners in each school, including Foetal Alcohol Syndrome (FAS)
- class sizes per school and grade, including multi-grade classes

A *qualitative dimension*, in the form of a needs analysis, was based on semi-structured focus group interviews with principals and teachers and observation of the school and classrooms. This data included:

- inventories of school partnerships and professional development programmes
- videos of Foundation Phase (FP) Numeracy and Literacy lessons and Intermediate Phase (IP) Mathematics and Language lessons.

The situational analysis showed a range of needs that could be grouped together into six broad areas. These were:

1. assessment for learning, related to issues around assessment, in particular diagnostic formative assessment and interpretation of WCED results (1 cluster);
2. Information, communication and technology (ICT) as a tool for providing professional and curriculum support at a distance (2 clusters);
3. language of learning and teaching – mother tongue instruction and issues relating to implementation and teaching (1 cluster);
4. use of text books (2 clusters);
5. curriculum management – multigrade and monograde issues (2 clusters);
6. transformational leadership – Whole School Development (WSD) and management issues (2 clusters).

A seventh need emerged once the case interventions had started and in response to test results. This was:

7. ‘bridging the gap’ – the transition from Grade 3 to Grade 4 (2 clusters).

A differentiated intervention strategy was thus adopted that would allow implementation models to emerge in the above areas.

**Professional Qualification: Advanced Certificate in Education (ACE)**

Based on the findings of the baseline audit and needs expressed by teachers, a project decision was made to register two National ACE qualifications that would offer teachers the option of professional development linked to a qualification. School of Education and SDU staff developed the outline for the courses offered as part of this qualification and registered through UCT and the Higher Education Quality Council (HEQC):

- Foundation Phase (FP), 5 courses: Numeracy, Literacy, Teaching, Learning and Curriculum Leadership
- Intermediate Phase (IP), 5 courses: Mathematics, Language, Teaching, Learning and Curriculum Leadership
These courses were delivered to a joint cohort of FP and IP students, with the intention of addressing conceptual and pedagogic knowledge within and across the primary school.

Schools were invited to nominate one FP and one IP teacher per school. 36 schools responded, with applications from 69 teachers and three CAs. The ACEs were registered and in 2007 and 2008 the WCED made 60 bursaries available to this cohort.


**Appointment of Staff**

It was assumed that Numeracy and Literacy curriculum specialists would be appointed regionally to support teachers and to implement the project plans. However, there were either no appropriate people in the rural districts or they were not available for appointment at the time.

In 2007 case teams were appointed in the 12 clusters. Two education specialists from the SDU, with expertise in mathematics and literacy, were appointed as full time co-ordinators, and three education specialists from the SDU were appointed on a part-time basis. In addition to these appointments an education consultant, previously employed by the WCED in the Multi-Grade Project, an ex-FP Head of Department (HoD) and a consultant with school management and development experience were appointed on a part-time basis.

Each case team consisted of a REP education specialist and a WCED official (Curriculum Adviser, Numeracy and/or Literacy co-ordinator or school clinic person). The combination provided a range of education and school management expertise.

**Implementation Strategies**

Education specialist support was offered between 2007 and 2008. One element of implementation support was common to all cases and clusters, while the other was specific to the particular intervention strategy identified for a school/group of schools.

**Common focus**

- WCED individual Grade 3 and 6 diagnostic school reports and the interpretation of this data to identify strengths and weaknesses, which could be used to plan for improvement at a whole school, phase, grade and classroom level
- Teachers’ understanding of numeracy/mathematics and literacy/language learning and teaching (content and pedagogy)

**Specialist support**

- Whole-day school visits involved classroom demonstration/co-teaching in the morning, and meetings with principal and school management team (SMT) and grade or phase planning after school. Each school received two site visits per quarter.
- Cluster meetings addressed issues across the case (joint planning and attendance by EDO staff). One cluster meeting was arranged in each of the first three quarters of each year.
Regional workshops and/or professional conferences took place.
Teachers who registered for the ACE programme were offered Saturday sessions to assist with preparation of assignments and implementation of course content in the classroom.
ACE teachers also received classroom support sessions in 2009 as part of the WCED bursary.

Phase 4: Consolidation and Exit (2009)

All activities linked to the exit of the project were aimed at ensuring sustainability of strategies employed by schools to deal with curriculum planning and delivery.

End of Direct Contact

- Handing over REP’s work to the EDO and alignment with EDO plans, including integrating the project clusters with the new district clusters
- Last cluster meetings in the first quarter, discussed strategies that schools could introduce to parents in order to support their children’s learning, particularly literacy and numeracy, at home
- District conferences

Rural Recruitment for ACE

- Strategic decision by Overberg and Eden and Central Karoo EDO to replicate the REP model (professional qualification with site-based support)
- SDU proposal to WCED for 2010 ACE courses and bursaries in these districts

Reflection and Research

- All staff went through a process of reflecting on and writing about what they had done and building models for replication
- Final internal evaluation, with interviews at three project levels: school, district, project

Research Report

- Research report produced to document the overall findings and recommendations of the project

CONCEPTUAL FRAMEWORK: WHAT MAKES A SCHOOL SUCCESSFUL?

During the project-planning phase, in 2005–2006, a literature review was undertaken, which focused on the development of professional support programmes as a component of school-based interventions and WSD. The literature review presented here builds on the previous work, but develops a conceptual framework that specifically allows for a retrospective analysis of the REP model.
Can schools make a difference?

Literature on school development can generally be traced to the landmark Coleman studies, conducted in the United States of America in the 1960s. One of the main findings of this study (Coleman et al, 1966) was that material resources provided in schools make little difference to educational performance, and that children’s social and family backgrounds are the decisive influence. However, having made this finding the Report also concluded that:

It is for the most disadvantaged children that improvements in school quality will make the most difference in achievement (1966: 22).

Good teachers was the factor most strongly associated with school quality, and the upgrading of teacher quality was predicted to be the best investment a school could make to improve the educational attainment of all children, but most significantly that of children with high prior levels of educational under-privilege (1966: 317).

It is perhaps not surprising that, 40 years later, the three major findings of the influential OCED-sponsored report on How the world’s best-performing school systems come out on top (Barber & Mourshed, 2007; but commonly known as the McKinsey Report) were:

1. the quality of an education system cannot exceed the quality of its teachers;
2. the only way to improve outcomes is to improve instruction; and
3. high performance requires every child to succeed (Barber & Mourshed, 2007:4).

However, these findings should not just be interpreted as simply the realisation of a prior prediction on what it takes to improve schools. In the period between the Coleman studies and the McKinsey Report extensive research showed both that schools make a difference and how they do so.¹

School effectiveness and school improvement

Literature on school effectiveness focuses mainly on identifying the features of a successful school. Academic attainment is taken as the primary measure of success and then processes that appear to be related to positive outcomes are ‘back mapped’ (Reynolds, cited in De Jong, 1999: 44) or ‘infer[red]retrospectively’ (Raudenbush 2009: 172) to identify common elements of successful schools. Schools that attain successful outcomes are thus studied as models of success.

A criticism of this literature is that it does not throw sufficient light on how schools actually come to be effective (Christie et al, 2007: 24). This is the main question addressed in the literature on school improvement where the focus is on the change strategies a school employs to become successful. Particular emphasis is placed on the internal dynamic of the school, on processes of change and the management of change through organisational

development (OD) interventions that support institutional self-evaluation and renewal, as well as through in-service training for both teachers and school managers.

A key criticism of this tradition is that it tends to be more concerned with the ‘journey’ of school improvement than with the ‘destination’ (Teddlie and Reynolds, cited in De Jong, 1999: 64–65), so that the relation between particular school improvement strategies and actual improvement in student attainment remains unclear. De Jong argues that a successful school is likely to include both ‘product/outcome’ and ‘process’ characteristics that transcend the boundaries between the two traditions. To this end he synthesises some of the most common characteristics that emerge from both sets of literature into twelve generic areas.

<table>
<thead>
<tr>
<th>Table 1.2</th>
<th>Key ‘generic characteristics of a successful school’ (extracted from De Jong, 1999: 66–70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Shared educational vision or central philosophy</td>
<td></td>
</tr>
<tr>
<td>- Strong competent leadership</td>
<td></td>
</tr>
<tr>
<td>- A collegial and supportive culture</td>
<td></td>
</tr>
<tr>
<td>- A stable staff</td>
<td></td>
</tr>
<tr>
<td>- Ongoing and regular staff development</td>
<td></td>
</tr>
<tr>
<td>- Order and discipline</td>
<td></td>
</tr>
<tr>
<td>- Strong focus on teaching and learning</td>
<td></td>
</tr>
<tr>
<td>- Many teachers who are good role-models</td>
<td></td>
</tr>
<tr>
<td>- Safe and secure environment (especially in developing contexts)</td>
<td></td>
</tr>
<tr>
<td>- Community involvement (home-school partnership)</td>
<td></td>
</tr>
<tr>
<td>- Sufficient funding and basic resources (with greater impact on success in developing than in developed contexts)</td>
<td></td>
</tr>
<tr>
<td>- Schools as learning organisations</td>
<td></td>
</tr>
</tbody>
</table>

**Internal and external accountability**

A synthesis between school effectiveness and school improvement is sustained in subsequent work on school accountability, particularly in terms of the relation between external and internal accountability. Elmore (2008) argues that it is not policy that produces performance; it is rather that accountability policy affects the way in which schools, as organisations, respond to external signals about their performance. A key determinant of that response is the capacity of schools to produce high levels of instructional practice reliably. This, in turn, is a function of the knowledge and skill of teachers and administrators, as well as of internal accountability or coherence around norms, expectations and routines for getting the work done.

A school in which decisions around content and pedagogy are delegated to the classroom level, in which teachers have no relationships with each other around instructional practice, in which there are no discussions among teachers or administrators about evidence of student learning, is a school with extremely low internal accountability. Such schools are relatively immune to external influences of any kind because they have no receptors for new knowledge and skill and no way of using it when it is present. Moving a school like this through an improvement process requires a focus on creating occasions for discussion and analysis of instructional practice, creating demand for new knowledge and skill, managing time and money in
a way that promotes occasions for learning, and opening up classroom practice to outside influences on curriculum and pedagogy.

A school with a well-developed approach to curriculum and pedagogy, routine grade-level and content-focused discussions of instructional practice and structured occasions to discuss student performance is a school with relatively high internal accountability. Moving a school like this requires skill in using the existing infrastructure to develop and sustain focus and motivate teachers to tackle progressively more difficult problems of practice. The problem with such schools is that they often lose focus, or become complacent, not that they lack the wherewithal for improvement (2008: 46).

In this view internal accountability proceeds external accountability. Improvement is the process by which schools move from being ‘relatively atomised and ineffective organisations’ with low internal accountability, to being ‘relatively coherent and effective organisations’ with high internal accountability that increase their performance and quality over time (2008: 64).

Elmore further distinguishes between performance as a matter of external measurement and quality as a matter of professional judgement. If school leaders and teachers cannot interpret and act on the evidence of the effects of their practice (for example, examination results or diagnostic tests results), there is a disconnection between quality and performance. Like Coleman, he notes that many high performing schools produce a large part of their performance with social capital from outside the school and not through instruction. It would thus be unwise to assume a direct correlation between high performance and high-quality instruction, without taking into account the important role that family and community play, independently of (or in compensation for) what the school does. Where such social capital is absent, students can rely only on the instructional practice of the school. When instructional practice is poor, students bear the inequality imposed by social factors such as poverty, low educational level of parents, community attitudes towards formal learning, with little chance of educational success (2008: 54).

**Improving instructional practice**

There is remarkable consensus in the literature on what it takes to improve instructional practice. If we return to Elmore we see that he argues that practice is not a personal attribute or characteristic of any one individual. Knowledge and skill are collective goods and not private goods. For accountability to be about systemic improvement, knowledge and skill has to belong to the system as a whole and not to individual schools or the individuals who work in them.

In order for an accountability system to produce performance as a public good it has to be accompanied by a system of social relationships that takes knowledge out of the private domain to make it public – within classrooms in schools, among schools, and among a system of schools within a larger polity (Elmore, 2008: 60).

From what could be called a social realist perspective on practice, which draws a distinction between everyday lived experience and formal knowledge existing independently of our representations of it (Muller 2000, Young, 2008), Elmore defines practice as a ‘collection of
patterned actions, based on a body of knowledge, skill and habits of mind that can be objectively defined taught and learned’ (2008: 44). Such an objectified view of practice moves it away from being identified in an essentialist way with people who have the ‘right attributes’. As Elmore notes, ‘there are never enough people with the “right attributes” to go around’. He argues that schools as organisations need to be treated agnostically and instrumentally so that practice becomes something that can be changed through learning and further practice. In this approach discussions of instructional practice are based on systematic observation of practice, using protocols derived from established bodies of knowledge in particular curriculum areas (for example, about reading acquisition in the early grades). Practice is depersonalised by focusing ‘as much as possible on the visible evidence in the classroom, not on the personal attributes of the teacher and not on the observer’s normative stance towards what is being observed’ (2008: 50).

Raudenbush takes the same position when he distinguishes between two forms of instructional practice, namely privatised idiosyncratic practice that is rarely open to public inspection, and shared systematic practice, with shared aims, shared assessment tools, shared instructional strategies, active collaboration, routine public inspection of practice and accountability to peers (2009: 172).

> I will argue that the most powerful reforms are conceptualised from the bottom up: One begins with a vision of a community of practitioners dedicated to the success of their students and determined to relentlessly appraise and reappraise their practice to ensure that every student stays on track for success (2008: 172).

Reviewing an extensive body of educational research conducted in the United States, which suggests that increases in the amount and quality of schooling can reduce social and racial inequality, Raudenbush concludes that the three kinds of conventional resources which increase school quality the most are: small class sizes, teacher experience and teacher knowledge. But, he argues, none of these measures should be considered on a stand-alone basis. Instruction must be built around school-wide formative assessment systems that monitor and record the progress of every pupil, so that instruction is not left to chance or to the judgement of individual teachers. When classroom practices are opened up, the results of every student in every classroom are known to staff. Variations in teacher expertise then become public knowledge and teachers become more motivated to be knowledgeable and to have their most expert colleagues as mentors (2009: 177).

Raudenbush also identifies a second source with the potential to improve school quality, namely formal research studies on early reading, mathematics and elementary science instruction. Only when schools are organised in ways that capitalise on what is available both inside and outside the classroom to improve instructional practice can they ensure that ‘each child will have access to ambitious instruction capable of supporting ambitious intellectual work’ (2009: 176).

‘Opening up the classroom’ was also identified as a practice emerging from a study of highly effective systems (Barber & Mourshed, 2007), which forms the basis of the McKinsey Report. This was discussed by Mona Mourshed at a local conference, in 2008, on ‘What works in school development?” She identified three practices used inside the classroom:
- peer observation: teachers can see what great teaching looks like so that they can emulate it
- lesson studies: teachers develop model lessons together and reflect on good practice
- demonstration lessons: a teacher does a mock class with other teachers participating and observing (JET, 2008: 9)

**Schools that work: South African research**

A South African pilot study by Christie, Butler and Poterton (2007) reviewed a sample of schools that succeeded in achieving good Senior Certificate results, while others in similar circumstances could not do so. The eighteen schools in the sample represented a continuum of schools: seven rural schools, six schools in regional centres, four schools in city townships and one urban school.

The internal dynamics that enabled success were found to be that all these schools:

- were **focused on their central tasks** of teaching and learning with a sense of responsibility, purpose and commitment
- carried out their tasks with **competence and confidence**
- had **organisational cultures** that supported a work ethic, expected achievement and acknowledged success
- had **strong internal accountability systems** in place that enabled them to meet the demands of external accountability, evidenced most particularly in terms of Senior Certificate achievement (Christie et al, 2007: 5)

Taylor, Muller and Vinjevold (2003) reviewed a range of qualitative and quantative large- and small-scale South African research studies that inform systemic school reform and then constructed a theoretical model of the factors that influence learning. The model is based on four key constructs, namely:

- **social organisation** of the school in terms of social values; style of social relations between officials, principals, parents, teachers and pupils; and the internal organisation of the school in terms of task, time and resources
- **language**, both in terms of proficiency in the language of instruction and the promotion of reading and writing
- **curriculum and pedagogy**, in terms of planning coverage, sequencing and pacing, as well as the relation between school knowledge and everyday knowledge
- **evaluation**, or the extent to which assessment policies are in place, monitored and quality assured, as well as the extent to which teachers make the evaluation criteria explicit so that they are available to pupils

The model is represented on the next page.
Table 1.3 A theoretical model of the factors that influence learning (Taylor, Muller and Vinjevold, 2003: 81)

<table>
<thead>
<tr>
<th>THEORETICAL CONSTRUCT</th>
<th>SUB-CONSTRUCT</th>
<th>INDICATOR CATEGORIES</th>
<th>District and higher</th>
<th>School</th>
<th>Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIAL ORGANISATION</td>
<td>Social values</td>
<td>Values incorporated into curriculum statements</td>
<td>Values incorporated into school culture</td>
<td>Values incorporated into lessons</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social relations</td>
<td>Style of relations between officials, principals, parents, teachers and pupils</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Task</td>
<td>The classification of tasks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>The organisation of teaching and learning time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resources</td>
<td>The management of resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LANGUAGE</td>
<td>Proficiency in language of instruction</td>
<td>Language policy set and monitored</td>
<td>Proficiency in language of instruction promoted</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Promotion of reading and writing</td>
<td>Policy set</td>
<td>Reading and writing supported and monitored</td>
<td>Reading and writing at appropriate levels promoted</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Books and stationary produced and distributed</td>
<td>Books and stationary managed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURRICULUM AND PEDAGOGY</td>
<td>Planning, coverage, sequencing and pacing</td>
<td>Design: vertical knowledge competences and progression criteria specified. Distribution supplied, monitored and supported</td>
<td>Curriculum planning, coverage and progression quality assured, supported and monitored</td>
<td>Macro: entire curriculum covered over the year. Micro: pacing adjusted to cater for pupil characteristics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inter-discursive relations</td>
<td>Design: inter-discursive relations specified</td>
<td>Level of cognitive demand appropriate to curriculum statements</td>
<td>Structuring of relations between school and everyday knowledges</td>
<td></td>
</tr>
<tr>
<td>EVALUATION</td>
<td>Explication of evaluation criteria</td>
<td>Assessment policy set, supported and monitored</td>
<td>Assessment quality assured, supported and monitored</td>
<td>Explication of evaluation criteria</td>
<td></td>
</tr>
</tbody>
</table>

Taking a systemic approach, this theory of effective schools links all levels of the schooling system: national, provincial, district, school and classroom. The conclusion that can be drawn is that effective instructional practices in schools depend on systemic coherence and synchronicity between all parts of an education system.
CONCEPTUAL LENSES THROUGH WHICH TO VIEW REP AS A DEVELOPMENTAL INTERVENTION

The literature reviewed provides us with a series of conceptual lenses that throw light on what it is that makes schools able to respond to external accountability measures such as diagnostic tests. These are:

Lens 1: Internal accountability
Schools are not able to respond to external signals about their performance if they do not have consistent norms and routines for getting work done. There also needs to be ongoing and open curriculum, pedagogic and assessment communication between teachers who teach in the same subject area, within and across grades and phases, as well as between teachers and SMTs and administrators.

Lens 2: Interpretation of diagnostic test results
While performance is a matter of external measurement, the quality of that performance is a product of the educational judgements made by teachers and school leaders in their daily school practices. It is thus crucial that they are able to interpret the evidence of pupil achievement or non-achievement which the school receives after diagnostic testing and that they are able to act on the evidence of the effects of their practice. If this does not happen there is a disconnection between quality of instructional practice and external performance. This is especially important for pupils who rely only on the instructional practice that they receive in school, rather than being able to rely on school instruction in combination with the social capital which they bring from home and community.

Lens 3: Instructional practice as a shared public good
Good teaching is not a personal attribute of any individual teacher. Opening up the classroom, so that instructional practice becomes something that can be changed through learning and further practice, is essential for improvement in teacher expertise. Instructional and assessment practices have to be shared within and between schools to build systems that hold students, schools and districts accountable for academic performance.

Lens 4: Knowledge-based teaching
Instructional practice improves when it is linked to research-based knowledge that already exists in particular subject disciplines and curriculum areas. This improves the content of lessons and also provides a language and vocabulary for describing, reflecting upon and understanding what is happening in the classroom. The requirement is thus for teachers to be able to theorise their own practice.

Lens 5: Systemic synchronicity
Classrooms function within larger education systems of school, district, provincial and national departments of education. The ‘what, why and how’ of instructional practice is crucially linked to national and provincial policies, strategies, curriculum statements, effective resource distribution, monitoring and support. If there is no systemic coherence it is unlikely that instructional practice will improve.
REP SYSTEMATICALLY REPRESENTED

Methodological considerations
REP was a specific intervention in specific schools in a specific province at a specific time. The intervention was conceptualised in developmental rather than research terms, with school selection based on geographic clustering within a 400km radius from Cape Town. These schools were not deliberately selected as a representative sample of all school types in the province, so that empirical generalisation through inference from a small sample of rural schools to a pre-identified universe of rural settings is not feasible. It is also not appropriate to assume that, because many of the schools are relatively far away from Cape Town and thus deemed rural in terms of WCED district classification, this makes them inherently different from schools in peri-urban or urban locations which serve low socio-economic status (SES) communities.

The alternative is to treat REP as a case study that is generalisable to theoretical propositions. This process is known as theoretical inference (Hammersley, 1992) or analytic generalisation (Yin, 1994), which Yin views as ‘analogous to the way a scientist generalises from experimental results to “theory”’ (Yin, 1994: 37). An important step in this process is to derive a series of conceptual lenses from a review of relevant theoretical literature, as undertaken in previous sections, to serve as a reading device for turning observations or descriptions of empirical referents into empirical data amenable to systematic analysis and interpretation.

Theories, typologies and models are the three types of heuristic devices generally employed to enable empirical phenomena to be lifted to an analytic level that enables comparison between ideal-types and actual representations. Theories explain or predict phenomena at the highest level of generality. Typologies mainly have a classificatory function, with ‘types’ constructed to capture the essential features of some social phenomenon (Ritzer, 1996). Whereas typologies present a static image or cross-section of a specific class of events, models attempt to represent the dynamic aspects of a phenomenon by revealing the relationship between its elements and systematising these in a simplified form to serve a heuristic function. The value of such simplification is that it draws attention to specific themes (Mouton, 1996).

Our retrospective analysis of the REP intervention will be represented as a series of models that shows both the relation between activities and the underlying authority structure which, under certain conditions, makes an intervention of this kind both sustainable and replicable.
MODEL 1: REP as activity structure

The series of lenses developed in the literature review section allows us to recast REP activities as a model (represented on the following page) that shows systematic patterns in what REP did.

- REP had no mandate to intervene in the way in which schools were managed and run. The way in which REP strove to build **internal accountability** was through opening up and strengthening lines of curriculum communication. This was done through school visits and by organising regular cluster meetings, as well as through district meetings, workshops and conferences.

- An important focus of cluster meetings was the interpretation of the diagnostic tests **results** of the schools in each cluster. While schools knew that their results had been classified as ‘very weak’ or ‘weak’, few understood how to interpret the various tables contained in each School Report and how to use the results to plan for improvement.

- School visits always had two components. In the morning, time was spent in classrooms and used for observation of curriculum coverage, pacing, use of text books and work sheets etc. REP education specialists also taught demonstration lessons that focused on specific literacy and language and/or numeracy and mathematics content topics, in which the school had achieved poor results. In this way **classrooms were opened up** and teachers could discuss their actual practices and learn from demonstrations. In the afternoon, the REP educational specialists met with the SMTs and/or grade and phase teams. This allowed an opportunity to discuss the diagnostic test results of a specific school and to help school leaders and teachers to incorporate strategies for improvement in the school’s improvement plan (SIP). The benefit of a school visit was thus extended to the whole school, rather than just being targeted at individual teachers in classrooms.

- The Advanced Certificate in Education (ACE) was a key **knowledge-building** component of the intervention. Teachers who attended the ACE received support through additional school visits that provided them with the opportunity to discuss their classroom practices and to relate theoretical perspectives gained on the course to their own practice.

- By seeking to work in close co-operation with districts and the WCED Head Office, REP tried to ensure that the intervention would be **systemically coherent** and would facilitate systemic learning.
MODEL 1: REP AS ACTIVITY STRUCTURE

POLICY CONTEXT
1. WCED Diagnostic Tests for Grades 3 and 6 every 2 years.
2. WCED’s longer-term Literacy and Numeracy Strategy.
3. WCED district restructuring process.
5. Orientation to NCS (OBE)
6. IQMS (Whole School Evaluation)

EDUCATIONAL CONTEXT
Rural Context in Western Cape
- geographic isolation
- lowest poverty quintiles
- seasonal work – migrant work

REP: INTERMEDIATE PPM OBJECTIVES
1. Quality of teaching and learner performance in literacy and numeracy at case schools is improved.
2. Capacity of WCED district offices in rural areas is improved

REP conceptual model for literacy and numeracy improvement intervention
Learning Pathway for Number (LPN) and Learning Pathway for Reading and Writing (LPRW)

REP implementation model:
Whole-School Development
Differentiated curriculum interventions (1) ICT; (2) Textbooks; (3) Assessment for learning; (4) Curriculum management; (5) Transformational leadership (6) Bridging the gap between Grades 3 and 4; (7) LoLT

Multi-level simultaneous school improvement strategies

District Meetings → Cluster meetings → School visits → School Community → ACE

Strategies to support school learning across Districts → Mediation of WCED diagnostic test results → Meetings with school management team → Working across grades as a team → Classroom-based support (Curriculum leaders i.e. key teachers) → Home support → Literacy /Language Numeracy/Mathematics Teaching and learning Curriculum Leadership

CURRICULUM COMMUNICATION: Inter-district District-school Inter-school Intra-school (organisational learning) Extra-school

Systemic Learning

Figure 1.3 Model of REP as activity structure
Model 2: REP as authority structure

Any educational intervention seeking to achieve an impact that extends beyond the life of the intervention requires a basis of authority other than Weberian ‘charismatic’ authority vested in individuals. As shown in the diagram below, REP was particularly innovative in this regard, in that it anchored itself in ways that gave the project the potential to achieve longer-term sustainability and replicability.

Figure 1.4 Model of REP as authority structure

R. S. Peters’s (1966) well-known distinction between being ‘in authority’ and being ‘an authority’ in an educational situation provides a way of describing REP’s structural authority relations. Entitlement to being ‘in authority’ derives from representation of a particular institution, in this instance REP’s relation to the WCED to which all schools report. Entitlement to being ‘an authority’ derives from a specialised knowledge and skill base, in this instance lodged in UCT as the provider offering the ACE and also the institution in which the SDU is situated.

These two institutional anchors set REP apart from many other interventions that rely mainly on staff expertise for educational credibility. REP, of course, also relied on the credibility of the education specialists who visited schools and demonstrated lessons, but this was not its only source of legitimation. The project sought to embed itself in longer-term relations of support and provision that could continue after REP itself came to an end.
ARE REP-TYPE INTERVENTIONS SUSTAINABLE AND REPLICABLE?

The Final Monitoring and Evaluation Report (Collett and Sonn, 2009) shows what respondents from a sample of fourteen REP schools rated as the strongest features of the intervention. These were:

- classroom-support and the ACE, separately and in combination
- whole-school support
- assistance with the interpretation of diagnostic test results

The weakest feature of the intervention was REP’s support to schools to encourage the involvement of home and community. REP staff members readily acknowledge that their efforts in this regard were not consistent. Due to the long distances that often had to be travelled to reach schools, there was little opportunity to follow up on discussions that did take place at certain schools. REP staff members also acknowledge that the project was over-ambitious in its differentiated support strategy. While this strategy emanated from the results of the initial baseline audit and needs analysis, hindsight shows that it would have been more effective to focus on one or two support strategies and drive them forward consistently in all schools.

However, these weaknesses do not diminish REP’s potential for sustainability and replicability. They simply tell us that some initiatives were more sustainable than others. Potential for sustainability and replicability lies in the strength of the systemic and conceptual anchors discussed earlier. Although much of the ground work, which was done in the early stages of the project to embed REP in the ongoing activity of the WCED, was diluted during the WCED’s restructuring process, the potential for such systemic embeddedness remains. A number of factors can be identified that would facilitate longer-term integration of a REP-type intervention into WCED structures:

- The relationship between the ACE and the WCED was strengthened by the WCED’s bursary support to successful applicants and the selection and bursary allocation processes worked out at the inception of the ACE are now a standard part of WCED procedure for all ACEs.
- The ‘cluster’ concept is already in use in education districts and it would thus be possible to transfer the work done in REP clusters to existing WCED clusters.
- A few CAs registered for the ACE and reportedly benefitted substantially. With the ACE as an avenue for the professional development of CAs, it would be possible for advisors to take over the role played by REP education specialists. The continuation of school-based support to new ACE students will also ensure that staff members from the School Development Unit continue to visit schools. They could act as a resource to CAs and planned co-visits would strengthen both the ACE support role and the district support role.

It is especially towards clarification of the role of CAs that REP has a lot to offer. One of the recommendations contained in the Report of the Task Team for the Review of the
Implementation of the National Curriculum Statement (2009), addresses this issue as follows:

Subject advisors’ roles as school-based subject experts must be affirmed. A job description and performance plan for subject advisors that focus their work on the delivery, implementation and moderation of the curriculum, and offering subject specific support to teachers must be tabled (2009: 63; original emphasis).

This is clearly an area in which the experience gained by REP education specialists could contribute positively. The added authority extended by conceptual anchorage in a formal qualification, such as the ACEs instituted by REP, will strengthen the expertise of curriculum/subject advisors and facilitate the development of a common conceptual vocabulary that will ensure that teaching truly is a knowledge-based activity.

CONCLUSION

The aim of the retrospective analysis undertaken in this chapter was not to pose REP as an ideal-type intervention that should be adopted uncritically. The aim was rather to show how REP broke new ground through anchoring itself both systemically and conceptually to gain legitimacy and stability as the basis for sustainability and replicability. As in all interventions there were successes and failures. As a REP education specialist remarked in one of the final staff workshops: ‘If only we knew at the beginning what we know now, we could have done so much better!’ But why should such hard-gained understanding not be put to use? If we consider the lenses provided by the literature on school development, it is clear that, whether intentionally or through trial and error, REP started a process of developing a viable route towards sustainable school development that holds enormous potential. This is REP’s longer-term contribution.
PART 2

FACTORS THAT IMPACT ON LITERACY AND NUMERACY ACHIEVEMENT

INTRODUCTION

Part 2 of the Report responds to two WCED strategies which framed REP as a school intervention project. The first is the WCED diagnostic tests in Numeracy and Literacy. These tests commenced in 2002 and are administered in alternate years to students in Grades 3 and 6. A sample of 40 students per school was tested from 2002 to 2005, but since 2006 the entire cohort of students for a particular year participates in the tests.

The second is the WCED Literacy and Numeracy strategy (2006–2016), which is linked to the province’s Human Capital Strategy and the challenge presented by the low levels of literacy and numeracy indicated by tests results, as well as their high correlation to poverty.

After presenting the test results in REP schools for the period 2006 to 2009 and explaining the structure of the tests, the theoretical perspectives and series of conceptual lenses developed in Part 1 are employed to focus on particular factors that were found to impact on test results in Literacy and Numeracy as a measure of schools’ external accountability. While these factors are by no means the only ones to which poor levels of Numeracy and Literacy could be attributed, they represent key areas identified during discussion and reflection in the final phase of the project when REP education specialists compared and wrote about their observations in the different school clusters. We focus on four crucial areas:

- poor understanding of the results of the WCED diagnostic tests as set out in the School Reports, which each school receives after a round of tests
- lack of correlation between Grade 3 diagnostic tests results and internal assessment results for the same learner cohort in Grade 4
- specific features of classroom pedagogy
- the language of teaching and learning (LoLT) as a constraint to effective learning

DIAGNOSTIC TESTS AND THEIR INTERPRETATION

Each year since 2002 the WCED has commissioned extensive research\(^2\) into Numeracy and Literacy performance in Western Cape primary schools, alternating between testing Grade 3 and 6 at the end of the FP and IP. These studies are now extensive.

The official justification for undertaking these annual systemic testing exercises is persuasive. Given the extent of the data, analysis thereof can have benefit, from provincial level, to districts, circuits, schools, classes and even to individual students. This has resulted

\(^2\) See media release of 6 March 2009: ‘Grade 3 literacy results show continued improvement’ (http://wced.wcape.gov.za/comms/press/2009/36_litnum.html). This framing of the testing in research terms is a common feature of the WCED discourse on testing.
in the accumulation over the past seven years of a significant amount of data on student performance across the FP and IP. In response, the WCED has used this data to develop a comprehensive Literacy and Numeracy strategy. Launched in 2006, this strategy forms part of their long-term plan to turn education around in the province by building strong foundations in Literacy and Numeracy in primary schools. This in turn now forms part of the national *Foundations for Learning (FfL)* campaign. In official communiqués, which accompany the release of each year’s results, the WCED concedes that it faces formidable challenges in its stated aim of building such foundations for learning. As Ron Swartz, the previous Head of Education in the Western Cape put it: ‘[diagnostic test results] give extremely valuable insights into the challenges we are facing as we strive to improve Literacy and Numeracy results’.

The challenges are hardly surprising given the wide-ranging educational contexts found in the Western Cape, from impoverished rural and fractured urban working class communities to the wealthy suburbs nestling on the slopes of Table Mountain. While the debilitating effects of poverty and the impact this has on student performance is acknowledged, it is not fully understood and even though there is little doubt that these studies provide a most useful litmus test of educational performance, systemic testing is not without its critics.

**REP results for 2006–2009**

This section of the report focuses on the WCED Grade 3 and Grade 6 Numeracy/Mathematics and Literacy/Language test results for REP for the period between 2006 and 2009. Aggregated results for the REP schools in each district are compared against the district and the province.

**Grade 3 results**

Grade 3 tests were written throughout the Western Cape Province in 2006 and 2008 by all Grade 3 students in primary schools with more than five students. In 2006, this amounted to 82 879 students in 1 086 schools being tested in the seven EMDCs. In 2008, a total of 72 450 students were tested in 1 061 schools in the eight Education Districts.

In 2002, the province’s average Literacy pass rate stood at 35,7%, with a steady improvement in subsequent years. The pass rate rose to 39,5% in 2004, 47,7% in 2006 and 53,5% in 2008. The opposite trend has been experienced in Numeracy. Whereas the pass rate remained essentially unchanged from 37,1% in 2002 to 37,3% in 2004, in 2006 it had dropped to 31,0%; rising up to 35,0% in 2008.

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6 The restructuring of the WCED led to a re-organisation of schools into eight Educational Districts.
7 In order to pass the test a score of 50% is required.
**Grade 3 Numeracy**

Figure 2.1 compares the Numeracy performance of REP schools in 2006 and 2008, relative to that of the province and their corresponding districts. The aggregated performance of the REP schools in 2008 shows a marked improvement from 2006, **with the pass rate increasing by just over 11%** (from 18.1% to 29.2%), as compared to a provincial increase of 4%. West Coast REP schools had the highest pass rate in 2008 (40.6%), which is above the average provincial pass rate (34.9%) and that achieved by REP schools in the other two districts.

![Grade 3 Numeracy Pass Rates](image)

**Figure 2.1 REP's Grade 3 2006 and 2008 Numeracy results**

**Grade 3 Literacy**

Figure 2.2 compares the REP schools’ Literacy performance in 2006 and 2008. Here too there is a measurable improvement in aggregated performance between 2006 and 2008, **with an overall increase of just under 10%** (from 37.6% to 47.3%), as compared to a provincial increase of just under 3%. West Coast REP schools again recorded the biggest improvement, from 35.4% to 51.3%, which is above the provincial average (50.5%).

![Grade 3 Literacy Pass Rates](image)

**Figure 2.2 REP's Grade 3 2006 and 2008 Literacy results**
Grade 6 results

Grade 6 tests were written in 2007 and 2009 by all Grade 6 students in the province’s primary schools with more than five students. A total of 76 269 Grade 6 students were tested in 1 039 schools in the seven EMDCs in 2007. In 2009, approximately 82 000 Grade 6 students were tested in 1 053 primary schools in the eight WCED districts. The Language results at the Grade 6 level have shown steady improvement since 2003 when the pass rate was 35,0%; in 2005 this had risen to 42,1% and to 44,8% in 2007. In Mathematics, the results remain disturbingly low. In 2007 only 14,0% of students were able to pass the test, and in 2009 this number had improved marginally to 17,4%.

Grade 6 Mathematics

Figure 2.3 compares the REP schools’ Mathematics performance in 2007 and 2009 relative to that of the province and their corresponding districts. From the results, it is evident that there has been a small but significant improvement of 5,5% over these two years, off a very low base (from 2,8% to 8,3%), as compared to a provincial increase of 3,4%. REP schools in the Overberg had a higher pass rate (12,8%) than those in the other two districts (5,8% and 6,8%). However, in all instances these results remain lower than those for the province and corresponding district.

![Grade 6 Mathematics Pass Rates](image)

Figure 2.3 REP’s Grade 6 2007 and 2009 Mathematics results

Grade 6 Language

Figure 2.4 shows a comparison of REP schools results against their districts and against the province for the 2007 and 2009 Grade 6 Language tests. The results show an average improvement of 10,2% in the pass rates throughout the REP schools across the two years, as compared to an overall provincial increase of 3,4%. The REP schools in the Overberg had a higher pass rate than all those in the other two districts. However, all the REP results were lower than the district results. All the REP schools also had lower pass rates compared to the province, with the exception of the Overberg REP schools. Only the Overberg REP schools had a pass rate higher than 50% (Figure 2.4 appears on the next page).
The structure of diagnostic tests

It is important to understand what is tested at Grade 3 and Grade 6 levels, so we offer a brief explanation.

Numeracy and Mathematics tests

Grade 3 Numeracy and Grade 6 Mathematics tests are paper-and-pencil tests with open-ended and multiple-choice questions. The questions are both ‘straight’ arithmetic problems and word or application problems.

Grade 3 Numeracy Test

The Grade 3 test assesses four strands of Numeracy across four Grade levels, namely:
- **Counting**: ordering, skip counting forwards and backwards in ones, twos, fives, tens, 25s, 50s and 100s and use of number lines
- **Addition**: adding of various combinations of units, tens and hundreds including carrying of units and tens
- **Subtraction**: subtracting of various combinations of units, tens and hundreds including carrying of units and tens
- **Multiplication**: multiplying various combinations of numbers from 0–10

Table 2.1 offers a summary of the test structure, showing the number of items in each category.

<table>
<thead>
<tr>
<th>Skill</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition</td>
<td>1</td>
<td>13</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Counting</td>
<td>3</td>
<td>7</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Subtraction</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Repeated addition and multiplication</td>
<td>1</td>
<td>8</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Division of fractions</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Ordering</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL Test items</td>
<td>8</td>
<td>38</td>
<td>38</td>
<td>17</td>
</tr>
</tbody>
</table>
The test is divided into four tasks, with each task made up of items that test learning outcomes at different grade levels with increasing levels of difficulty from Task 1 to Task 4.

**Grade 6 Mathematics Test**

The Grade 6 Mathematics test consists of items that are classified according to Grade level and learning outcome. The Grade levels range from Grade 3 to Grade 7, with the same four Learning Outcomes (LOs) applying across the different Grades. The test is divided into five tasks. Each task is made up of items that test the different learning outcomes at each grade level. The level of difficulty increases from Task 1 to Task 5.

The table below shows the topics covered under each Learning Outcome.

<table>
<thead>
<tr>
<th>Table 2.2 Learning outcomes tested in the Grade 6 Mathematics test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Concepts (LO1)</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>Order and compare</td>
</tr>
<tr>
<td>Representing numbers</td>
</tr>
<tr>
<td>Place value</td>
</tr>
<tr>
<td>Rounding off</td>
</tr>
<tr>
<td>Add and subtract</td>
</tr>
<tr>
<td>Multiply and divide</td>
</tr>
<tr>
<td>Solve problems in context</td>
</tr>
</tbody>
</table>

The next table offers a summary of the structure of the test, showing the number of items in each category.

<table>
<thead>
<tr>
<th>Table 2.3 Summary of the test structure for Grade 6 Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Numbers (LO1)</td>
</tr>
<tr>
<td>Patterns (LO2)</td>
</tr>
<tr>
<td>Space, Shape (LO3)</td>
</tr>
<tr>
<td>Measurement (LO4)</td>
</tr>
<tr>
<td>Total questions</td>
</tr>
</tbody>
</table>

Eleven items, constituting the majority of Grade 3 items in the test, focus on LO1 skills in relation to the following knowledge/skill level components:

- **Add and subtract**: These constitute the core skills and knowledge content at the start of Numeracy instruction. Grade 3 students should be able to carry out constructions of addition and subtraction involving three digits.
- **Multiply and divide**: Grade 3 level students should be able to multiply 2 by 1 digits.
- **Solve problems in context**: Tasks at Grade 3 level include working with 2 by 1 digits, comparing fractions, and identifying fractions (for example, tasks such as working out how many sticks of dried fruit each of three friends should get if they shared them equally).

There are 25 Grade 4 level items, made up as follows: 11 LO1 questions, five LO2 questions, four LO3 questions and five LO4 questions. The majority of the items on the test are made up of Grade 5 items (34 out of the 108 questions). As with the other Grades, LO1 skills
dominate (14 of the 34 questions), for example, arranging a line of five fractions from smallest to biggest.

As with the other grade levels, the 23 Grade 6 items on the test consist mainly of questions from LO1. At this level the skills involve comparing, transposing and working with mixed fractions, decimals and fractions with different denominations, for example:

- identifying off a pie chart a whole value which was segmented
- calculating the total number of kilometers that a traveller undertakes on a journey
- adding three fractions
- filling in the missing number in an addition with numbers in decimal form

There are five Grade 7 items in the test, two relating to LO1, one to LO2 and two to LO4, (for example, requiring calculation of the area of a square; or, rounding off to one decimal place).

**Literacy and Language Tests**

The Grade 3 Literacy test and the Grade 6 Language test are paper-and-pencil tests. The following core reading competencies or learning outcomes are assessed:

- recognition of frequently used words
- sentence comprehension
- comprehension of short fiction and non-fiction texts

The test assesses ability to access information, use language in context and infer information from a variety of text forms, such as illustrations and short non-fiction passages.

**Grade 3 Literacy Test**

The Grade 3 test assesses reading ability, word recognition, sentence completion and passage comprehension. The test consists of 5 main questions based on Grade level and Learning Outcomes. Question 1 requires recognition of a single word when given a choice of four words, with visual cues. Question 2 Items consist of a visual cue, linked to a short sentence with a word missing, and a choice of four words to choose from. Question 3 is a narrative about a topic, such as an ‘accident’, which requires circling the correct word from those in a box. Question 4 requires answers to short questions based on a mind map, with pictures for visual cues. Question 5 consists of a short comprehension exercise.

The table below shows the skills, LOs, number of items and grade level for each question.

<table>
<thead>
<tr>
<th>Table 2.4 Learning outcomes tested in the Grade 3 Literacy test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skill</strong></td>
</tr>
<tr>
<td>Reading single words</td>
</tr>
<tr>
<td>Reading single sentences with visual clues</td>
</tr>
<tr>
<td>Reading single sentences without visual clues</td>
</tr>
<tr>
<td>Comprehension based on ‘mind map’ text</td>
</tr>
<tr>
<td>Comprehension based on extended passage</td>
</tr>
</tbody>
</table>
**Grade 6 Language Test**

The language test consists of 53 items, 12 of which are Grade 3 items, seven Grade 4 items, four Grade 5 items and 30 Grade 6 items. Six Grade 3 items require the unscrambling of letters to form words, with a clue given (for example, that the words are names of various forms of transport). The other six Grade 3 items require the writing of words cued by means of pictures placed in a text.

Grade 4 questions consist of comprehension exercises based on the reading of a short passage. Grade 5 items require interpretation of a map showing a journey undertaken. Grade 6 items are broken up into three sections. The first section contains ten comprehension questions, based on text approximately two pages in length. The second section requires interpretation of a short description and map of a journey and placing given words in their correct order. The third section involves a written account of the journey in 10 sentences.

Table 2.5 shows the skills, Learning Outcomes and number of items in each grade level.

<table>
<thead>
<tr>
<th>Skill</th>
<th>Grade Level</th>
<th>LO</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading: unscramble single words and write single words using visual clues</td>
<td>3</td>
<td>3, 4</td>
<td>12</td>
</tr>
<tr>
<td>Reading: comprehension exercises based on a short passage</td>
<td>4</td>
<td>3, 4, 5</td>
<td>7</td>
</tr>
<tr>
<td>Reading: the skills of interpreting a map showing a journey undertaken</td>
<td>5</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Reading and Writing: comprehension and interpretation of a journey map</td>
<td>6</td>
<td>4, 5</td>
<td>30</td>
</tr>
</tbody>
</table>

**Interpretation of School Reports**

The service provider responsible for undertaking the testing\(^8\) provides, upon completion of the process, a comprehensive report on the findings of the study. What is consistent in all the Grade 3 and Grade 6 testing exercises since 2002 are the striking differences in performance evident when the results are analysed in terms of home language, medium of instruction, poverty levels and former department. Significantly, students who have English as their home language or medium of instruction are shown to be at a considerable advantage. There are also significant differences in performance between students from the former Cape Education Department, Department of Education and Training and House of Representatives. As is more broadly reflected in all aspects of South African schooling, educational inequalities remain deeply entrenched and tightly bound up with broader social inequalities.

Given these circumstances, there is little doubt that outside expertise (be it from Departmental officials or from service providers such as REP) has an absolutely vital role to play in helping schools’ to decode, interpret and most critically of all, act upon their circumstances. We thus consider how the results of diagnostic tests are communicated to

\(^8\) The Schools Development Unit (SDU) has been involved in this work since 2002.
schools level and what form this communication takes in terms of the structure of the report and the level of detail provided. What *sense* are recipients expected to make of the results as they are presented? In this regard we return to the conceptual lenses provided by the literature review in Part 1 of this Report. For ease of reference we repeat the discussion on the interpretation of diagnostic tests.

**Lens 2: Interpretation of diagnostic test results**

While performance is a matter of external measurement, the quality of that performance is a product of the educational judgements made by teachers and school leaders in their daily school practices. It is thus crucial that they are able to interpret the evidence of pupil achievement or non-achievement which the school receives after diagnostic testing and that they are able to act on the evidence of the effects of their practice. If this does not happen there is a disconnection between quality of instructional practice and external performance. This is especially important for pupils who rely only on the instructional practice that they receive in school, rather than being able to rely on school instruction in combination with the social capital which they bring from home and community (REP Research Report, Part 1).

Our finding in relation to the assessment results sent to each school is that, in its existing form, the Grade 3 and 6 School Reports are of limited use in terms of the purposes for which they are intended.

We explain this finding by way of a comment on the current format in which the results of diagnostic tests are sent to each school, essentially as a statistical analysis of performance. Interpretation requires a level of acumen in mathematical literacy that is not necessarily available to the majority of primary school teachers in the province. In the discussion that follows we explain the School Reports and make suggestions on how these results can be presented in a simpler way that would help school leaders and teachers to work with the reports in a diagnostic manner.

**What the School Report says**

A School Report at Grade 3 level consists of a summary of results across the testing cycles (in this instance four cycles since 2002) and seven tables that provide detail about Numeracy and Literacy results for the testing cycle to which the Report relates. In the next sections we use the Numeracy section of the 2008 Grade 3 school report to illustrate our suggestions for improving the diagnostic potential of the School Reports.

**Suggestion 1: Presentation of results in graphic form**

The way in which the data is presented assumes that it is *meant to be interpreted* but, as we have indicated, this requires a level of mathematical acumen that is often unrealistic. The problem is exacerbated by a lack of explanatory notes, which would assist readers to glean appropriate meanings from the tabulated results. The inclusion of graphic representations of the results would help to foreground possible trends in the data, particularly when the tables contain quite complex data. Graphs which draw comparisons with previous results (in this case between 2006 and 2008) are essential for purposes of interpretation.
Below is a table which summarises the results across the four testing cycles (2002–2008), as it appears in the School Report.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeracy Results</td>
<td>13.0</td>
<td>10.0</td>
<td>9.5</td>
<td>17.2</td>
<td>7.7</td>
<td>Improvement</td>
</tr>
<tr>
<td>Literacy Results</td>
<td>5.0</td>
<td>12.5</td>
<td>39.4</td>
<td>37.4</td>
<td>-2.0</td>
<td>Minor Decrease</td>
</tr>
</tbody>
</table>

This is the only table which affords the school the opportunity to evaluate its performance over the years; but what is missing is a point of comparison against either the circuit/district or provincial results. Without this, how does the school judge itself relative to others?

Figure 2.5 below is a suggested graph which includes provincial pass rates for the last two Grade 3 testing cycles.

![2002-2008 numeracy pass rates](image)

**Figure 2.5 Grade 3 2002 to 2008 Numeracy pass rates**

From the graph, it is evident that while this school’s Numeracy results lag far behind the provincial mean, the level of improvement between 2006 and 2008 (+7.7%) is at least greater than that experienced in the province, where the average pass rate only increased by 4.0%.

Similarly Table 1 in the School Report, which shows percentage of performance at each Grade level in the Numeracy test for the school, the circuit, the district and the province, would have far greater impact in graphic form.
Suggestion 2: Comparisons of results at all Grade levels and across years

The report in its present form enables a school to compare its 2008 results to those of 2006, but only at the Grade level to which the Report relates. It is suggested that a further useful depiction would be to represent the data for all four Grades against the previous test cycle’s results:

![Graph showing Grade 3 Numeracy Results (2006 vs 2008)](image)

Figure 2.6: Performance in Grade 3 Numeracy across grade levels

From this graph, it is a lot easier to see that in the test items at Grade 2 level there has been what the Results Legend would describe as a substantial improvement in performance (+11.4%); although the decline in performance (-5.5%) in Grade 1 level test items would be cause for concern.

Suggestion 3: Inclusion of sample size

Information provided in Tables 2 and 3 of the School Report on the number of students performing at the different Numeracy Grade levels included in the test might, at first glance, seem quite puzzling as values tend to repeat themselves within some of the tables. For someone unversed in statistics, this may seem mere coincidence, yet of course it is not. It highlights what can be regarded as an omission from the School Report, namely that at no point is any mention made of the sample size – being the actual number of students at a school who wrote these tests. How many students at a particular school wrote the Grade 3 tests in November 2008? How many were absent? Such information could be used to ask questions about the conditions prevailing at a school when the tests are undertaken – issues which unfortunately lie beyond the scope of this discussion.

Suggestion 4: Identification of upward or downward shifts through comparative data

In terms of diagnostic value it would be important to chart improvement in terms of the numbers of students scoring in the different performance categories. In its current form Table 2 in the School Report offers a categorisation of performance for the current test results, but provides no basis for comparison. To do this, one needs to compare the data across at least two testing cycles (for example, 2006 and 2008). The three graphs presented in Figure 2.7 compare grade level performance across two testing cycles to show how this increases diagnostic potential.
Figure 2.7 Performance categories for Grade 3 Numeracy results

Presented graphically in this way, it is clear that there is a marked improvement from the situation in 2006, where more than half (51.7%) of the students tested were in the lowest performance category.

The importance of linking data in this way cannot be over-emphasised, for it is only then that reasoned value judgements can be made about shifts in performance, particularly when it is being reported upon at a second or even third level of analysis.

Table 3 in the School Report (below) can be analysed in the same manner. This table lists the actual Numeracy tasks across the four Grade levels included in the test.

<table>
<thead>
<tr>
<th>Task</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ave Mark %</td>
<td>Pass %</td>
<td>Ave Mark %</td>
<td>Pass %</td>
</tr>
<tr>
<td>Addition</td>
<td>81.8</td>
<td>81.8</td>
<td>42.1</td>
<td>43.4</td>
</tr>
<tr>
<td>Counting</td>
<td>62.3</td>
<td>70.7</td>
<td>69.3</td>
<td>78.8</td>
</tr>
<tr>
<td>Subtraction</td>
<td>49.0</td>
<td>75.8</td>
<td>37.5</td>
<td>35.4</td>
</tr>
<tr>
<td>Repeated addition and</td>
<td>71.7</td>
<td>71.7</td>
<td>17.5</td>
<td>8.1</td>
</tr>
<tr>
<td>multiplication</td>
<td>Division of fractions</td>
<td>14.1</td>
<td>24.2</td>
<td>14.4</td>
</tr>
</tbody>
</table>
Here too, a school’s attempts to glean more specific information about trends in student performance might best be served by a graphic depiction of the results.

![Average pass percentage for numeracy per grade level](image)

**Figure 2.8: Average pass percentage for Grade 3 Numeracy per grade level**

A graphic depiction such as this one shows the extent to which performance in all six areas declines steadily from Grade 1 to Grade 3, with significant weaknesses showing up in ‘addition’, ‘subtraction’ and most markedly in ‘division of fractions’. The drop-off in performance in ‘counting and ordering’, between Grade 2 and Grade 3, is also apparent.

Tables 3 and 4 in the School Report introduce ‘average mark %’ and ‘pass %’ values for the first time. The ‘pass %’ value shows the percentage of students who passed the test items related to the knowledge/skill area indicated on the left-hand side of the table. The ‘average mark %’ shows the average percentage achieved by those who passed. In the table below we look at Table 4 in the School Report.

**Table 2.8 Percentage of learners passing knowledge/skill Numeracy items per grade level**

<table>
<thead>
<tr>
<th>Knowledge/Skill</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ave Mark</td>
<td>Pass %</td>
<td>Ave Mark</td>
<td>Pass %</td>
</tr>
<tr>
<td>Counting, ordering and representing numbers</td>
<td>62.3</td>
<td>70.7</td>
<td>71.7</td>
<td>85.9</td>
</tr>
<tr>
<td>Solving problems</td>
<td>20.1</td>
<td>13.1</td>
<td>11.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Calculations</td>
<td>62.9</td>
<td>79.8</td>
<td>45.5</td>
<td>49.5</td>
</tr>
</tbody>
</table>
As with the ‘performance category’ data discussed above, it would be instructive to compare the 2008 performance with that achieved in 2006. A series of graphs would best depict the situation:

In the figures used in the above graphs the dismal performance at Grade 3 and Grade 4 levels in the area of ‘solving problems’ is significant. Only 3% of students passed the Grade 3 problem solving test items, and only 1% passed the Grade 4 level test items in this category. However, in the other two areas, ‘counting, ordering and representing numbers’ and ‘calculations’, marked improvements occurred between 2006 and 2008.

The point that needs to be reiterated is that it is only through comparing results that one can gauge the extent of improvement or decline. While there is no question that the School Reports are highly informative and provide useful information about student performance in the LAs of Numeracy and Literacy at different grades and levels of achievement, the suggestions put forward in this section hopefully contribute to an enhancement of the diagnostic potential of School Reports that will help schools to develop strategies for improvement.

**CLASSROOM PRACTICE**

Having explained why the current format in which diagnostic test results are communicated to schools is not optimal in terms of interpretative potential, we now turn to specific features of classroom pedagogy to identify factors that impact on Literacy and Numeracy achievement in relation to a theoretical model of effective schooling (Taylor, Muller and
Vinjevold, 2003), which was discussed in the literature review in Part 1. We focus on observed classroom practices in relation to three areas, namely assessment, pedagogy and language.

Observations by REP specialists in different schools and at different times do not constitute a reliable body of empirical data, so each set of observations is linked to already existing findings of larger South African research studies. In this way REP’s small-scale findings gain a cogency that allows for broader generalisation than would otherwise be possible. This in turn allows REP to contribute to the body of research on South African school improvement that is systematically being built.

Theoretical underpinnings of classroom practice

Educational practices are always underpinned by theoretical considerations, whether these are made explicit or not. In the next section we briefly consider the explicit educational rationale on which the WCED Literacy and Numeracy Strategy is based.

The WCED Literacy and Numeracy Strategy, 2006–2016 recognises a diversity of learning contexts in the province (2006: 4–15). It presents constructivism as an example of progressive learning theory underpinning outcomes-based education (OBE) that poses a ‘dynamic alternative’ to traditional conceptions of teaching and learning. The main tenet of this theory is that students are ‘learners’. They are not passive recipients of knowledge but rather ‘active constructors of their own knowledge in interaction with the world and society around them’ (2006: 6). The work of Swiss psychologist, Jean Piaget, is cited to explain the idea of individual constructivism, while the work of Russian psychologist, Lev Vygotsky, is cited to explain the cultural and social construction of mind. Taken together, these theories advocate active methods in education that position teachers as facilitators and mediators of knowledge, rather than as lecturers.⁹

It is explained that a constructivist approach to Literacy rests on the assumption that explicit teaching of phonics is nested in a ‘whole language’ approach in which the making of meaning is stressed, with reading and writing considered critical co-components of development.

In the teaching of Numeracy it is considered particularly important that knowledge be constructed in a way that is meaningful for students. Teaching Numeracy through numerical activities is thus deemed crucial, although there is still a place for drill and practice with regard to mental mathematics. Learners must actively construct knowledge and skills in Numeracy by way of iteration between the teaching of conceptual understanding and skills practice.

⁹ It is mainly for this reason that constructivist approaches use the term ‘learner’ to refer to those who study in a formal educational context. We use to term ‘learner’ in this sub-section to signify consistency with the constructivist approach advocated in the Strategy. In the Report, as a whole, we use the more universally familiar term ‘student’, except where we quote from an official document.
What REP observed in classrooms

Factor 1: Assessment
Outcomes-based education (OBE) is an assessment-led system, with outcomes-based assessment (OBA) regarded as integral to teaching and learning. Different types of assessment are undertaken in schools. The Assessment Guidelines for Foundation Phase Grades R–3, in terms of the National Curriculum Statement for General Education and Training prescribes four types of assessment that can be used in the FP.

Table 2.9: Types, descriptions and uses of assessments

<table>
<thead>
<tr>
<th>Type of Assessment</th>
<th>Description and uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Assessment</td>
<td>Baseline assessment is usually used at the beginning of a phase, grade or learning experience to establish what learners already know, what they can do, or what they value. For learners with disabilities, baseline assessment can be done in consultation with the Institution-level support team.</td>
</tr>
<tr>
<td>Formative Assessment</td>
<td>Formative assessment is developmental. It is used by teachers to provide feedback to the learner and track whether the learner has progressed (or not). It helps day-to-day teaching and learning, and may suggest ways in which learning activities can be changed to suit diverse learners’ needs. Formative assessment is also known as “assessment for learning”. Importantly, this type of assessment involves both teacher and learner in a process of sustained reflection and self-assessment.</td>
</tr>
<tr>
<td>Diagnostic Assessment</td>
<td>Diagnostic assessment is a specific type of formative assessment. It may lead to some form of intervention, or remedial action, or revision programme. It can help to identify strengths and weaknesses of a learner, or of a teaching methodology, or barriers to learning. The results can help to plan individual support for learners who have problems.</td>
</tr>
<tr>
<td>Summative Assessment</td>
<td>Summative assessment gives an overall picture of the achievements of a learner at a given time, for example, at the end of a term or year Summative assessment is like a ‘snapshot’ of a learner’s progress at a particular point in time (and formative assessment is like a ‘video’ of a learner’s progress during the process). Summative assessment is referred to as ‘assessment of learning’.</td>
</tr>
</tbody>
</table>


REP’s finding in relation to assessment in classrooms points to significant discrepancies between internal assessment in schools and the WCED diagnostic test results.

In the FP (Grades R–3) Continuous Assessment (CASS) makes up 100% of student achievement. An analysis of a sample of REP schools in two clusters shows that, in terms of internal assessment, the majority of Grade 4 learners (more than 70%) were achieving the minimum expected outcomes for their age and ability in the different LAs and within the specific Grade and Phase. However, there was no correlation between the Grade 4 internal results of these schools for 2007 and the external diagnostic tests done by the WCED for the period 2006 with regard to the Grade 3’s (the same learners). Internal assessment results were consistently higher than the external test results, with an average Grade 4 pass rate of 83%, as is shown below for the seven multi-grade schools in these two clusters. Only in
school E do we find an approximate correlation between internal and external Numeracy results.

![Figure 2.10 Comparison of 2006 WCED External Grade 3 Results against Internal Progression Results for Grade 4 in 2007](image)

The chart below also reflects major inconsistencies between Grade 3 and 6 Numeracy diagnostic tests results, for all eight schools in these two clusters.

![Figure 2.11 WCED results for Numeracy Grade 3 for 2004/6 and Grade 6 for 2003/5](image)
Exit grade results in the FP (Grade 3) are better than exit grade results in the IP (Grade 6), which show an average pass rate of below 1%. The average for the Numeracy results for Grade 3 improved from 11.8% in 2004 to 31.3% in 2006, while the average for the Numeracy results for Grade 6 dropped from 0.6% in 2003 to 0.3% in 2005. These results suggest that something detrimental is happening in the grades before grade 6, notwithstanding the fact that the schools’ average pass rate for Grade 4 in the internal assessment is 83%.

There is thus little evidence of a cascading effect from external diagnostic results to actual improvement of assessment practices in classrooms. In almost all cases REP education specialists found a poor understanding of the results of the diagnostic test results, as set out in the reports received by each school. This resulted in inadequate interpretation and thus a lack of capacity to act on the evidence of the effects of school practices, in terms of strategic revision of School Improvement Plans (SIPs), Phase Plans and Grade Plans.

It was also found that these schools do not make use of the range of assessment strategies available to them in policy terms. Baseline diagnostic assessment is not standard practice at the start of the school year. This is a critical omission, particularly in the transition from FP to IP (between Grade 3 and Grade 4) where such assessment is crucial.

Reeve’s study of factors impacting on gain in mathematical achievement, conducted in 24 primary schools located in the four districts of the Cape Peninsula, with the highest number of schools serving low socio-economic status (SES) communities, found, inter alia, that within and across grades, content coverage appears crucial for overall student gain over a number of years. Other influential factors in terms of ensuring adequate opportunity to learn (OTL) include logical content sequencing to ensure developmental complexity within each grade, the maximising of teaching-learning time and adequate curricular pacing across adjacent grades (curricular content that progresses at an appropriate level from grade to grade). Conversely, students who consistently experience low coverage and slow pacing over a number of years end up with lower cumulative scores overall. Within any one year, teachers’ competence in terms of their grasp of mathematical content knowledge, their ability to teach mathematical content and their ability to deal with students’ misconceptions and difficulties and to be adaptive to students’ levels of progress are crucial for achievement gain (Reeves, 2005; Reeves & Muller, 2005).

When viewed through this lens, REP’s finding of significant discrepancies between low mathematical achievement in external diagnostic tests in Grade 3, relatively high levels of achievement recorded in internal assessments in Grade 4 and extremely low diagnostic test results achieved by these schools in Grade 6 (even though not for the same students cohort), seems to indicate an absence of curricular coherence across Grades, coupled with low content coverage and slow pacing. Dismal Grade 6 results show that the relatively high scores achieved in internal assessment in Grade 4 are no more than a ‘false signal’ of actual student competence, and that it is only when performance is assessed over time and across Grades and Phases that a realistic picture of student competence and school quality emerges. Discrepancies will inevitably occur between teacher assessment and external assessment, given that teachers assess students’ work over a period of time, while external assessment is based on student achievement displayed in about one hour in a standardised
test (Jennings, Price & Pankhurst, 1999). However, when these discrepancies are as marked as those indicated by REP’s observations, it is a clear indication that internal accountability is not at the level that it should be to bring about a consistent positive shift in the instructional practices of schools.

**Factor 2: Teacher knowledge and teaching practice**

**Conclusions from research studies**

Evidence from a range of research studies points to a lack of teachers’ conceptual and content knowledge related to their subjects as a major factor in the way teaching practice is conducted in South Africa.

The argument that inadequate levels of teacher content knowledge is central to the persistent underperformance of South African learners has gained extensive support over the last decade, as has its corollary; that improving the level of teachers’ content knowledge is fundamental to improving learner performance. Virtually all of the reports and policy documents we have reviewed in the course of researching this report have taken this position to one degree or another (Schollar, 2008: 16).

Referring to 35 individual studies carried out as part of the President’s, Education Initiative (PEI), Taylor and Vinjevold conclude that:

The most definite point of convergence across the PEI studies is the conclusion that teachers’ poor conceptual knowledge of the subjects they are teaching is a fundamental constraint on the quality of teaching and learning activities, and consequently on the quality of outcomes (Taylor & Vinjevold (eds), 1999: 230).

REP’s classroom observations confirm these claims, but we were particularly interested in understanding what it is that teachers do when they lack content or conceptual knowledge. This is discussed in the next section.

**The procedure of process**

Given that REP school visits took place in 2007 and 2008, when the WCED Literacy and Numeracy Strategy, 2006–2016 had already been in operation for more than a year, education specialists observed classroom practices guided by constructivist approaches to learning which were intended to overcome what the WCED described as an ‘under-emphasis on issues of knowledge’.

Education Departments in the post-apartheid era did not “train” teachers but “oriented” them to the National Curriculum Statement policy goals and aims. Issues relating to epistemology which provide the conceptual tools to guide teachers to navigate the new educational pedagogy were under-emphasised. This has hindered the growth of knowledge about conceptual developments, innovation, creative thinking and imagination (WCED Literacy and Numeracy Strategy, Executive Summary).

The finding that emerged from REP observation of classroom practice is the possibility that the theoretical guidance provided in the Literacy and Numeracy Strategy is not succeeding
in overcoming the constraints identified in the above statement. In both Grade 3 and Grade 6 Literacy/Language and Numeracy/Mathematics classes REP specialists found little evidence of teachers having an explicit understanding of the conceptual goals underpinning their lessons. **What was found instead was that procedural knowledge is substituted for conceptual knowledge but it is procedure of process rather than procedure derived from content.**

‘Process’ refers to a step-by-step interpretation of the assessment standards under the learning outcomes for specific grades. When process is foregrounded lessons are not driven by teachers’ understanding of conceptual progression, cognitive demand or cognitive complexity inherent in the subjects that they teach. In the two examples discussed below the findings are: (1) that a shared reading lesson was driven by a focus on the processes of eliciting examples from the everyday experience of students; and (2) that a Numeracy lesson on fractions focused on teaching procedures that obscure rather than reveal the mathematical object which is the purpose of the lesson. We offer short extracts from the two lessons to show how this works.

**Classroom 1: Shared reading in English as First Additional Language (FAL)**

The classroom observed is a multi-grade Grade 2 and Grade 3 classroom. The twenty-minute lesson proceeds in three stages.

**Stage 1 (8 minutes) Questions to locate the story within the real-life experience of the students:**

T: **We are not going to read this book straight off. What is the title?** Children respond in chorus – A dark dark night.

T: **What is it about? When is this happening, the dark? What time of day is it, afternoon? Afternoon the sun is shining (she does not wait for answers).**

T: **What time is it? (She points to one student and indicates that he must stand up.)**

S1: **Evening**

T: **When it is dark, what is it like, when it is dark? Is there sun?**

Chorus: **No, no.**

T: **So what’s it like? How do you feel when it is dark? (repeats this several times as if looking for one right answer)**

T: **So you, yes you (pointing), how do you feel when it is dark?**

S2: **Scared**

T: **Do all of you feel scared? (repeats this again) Why do you feel scared? Because you are a.. a.. (expectant pause waving hands to get an answer)**

S3 & T: **Afraid**

T: **I am not going to read the book now. We are first going to talk about what it is like at night or why do you feel scared at night when it is dark? . . .**
**Stage 2: Teacher reads the story in the book (6.5 minutes)**

*T:* Now we are going to read the story. You must listen carefully because afterward I will ask questions. Sit comfortably you all.

She reads the book with some energy. It is a picture book with only a few sentences on each page. She frequently stops often to ask questions.

*T:* Why did grandma use a stick? What does she use to walk?

**Chorus:** She uses a stick to walk

*T:* Who else uses a stick to walk?

*S:* My grandfather

*T:* Say, ‘my grandfather uses a stick to walk’. Why?

*S:* He is old.

**Stage 3: Writing words on the board (5 minutes)**

*T:* Now we have some words. I want that someone should come and write the word ‘dog’ on the board. You, write (pointing to one student). You (pointing to another student), go find the word ‘dog’ on the cards.

The student goes to a table with cards scattered on it and looks around until he finds the card. The teacher holds up the card and asks the class if it is correct and they all answer ‘yes’ in chorus.

*T:* You (pointing to a student), come write ‘baby’ on the board. And one of you grade 2’s come find the card for ‘baby’.

She then asks someone else to write ‘night’ . . .

**Discussion:**

Here we see a form of classroom pedagogy that is embedded in a constructivist approach to learning. The teacher is very conscious of the fact that students are ‘learners’ who are ‘active constructors of their own knowledge in interaction with the world and society around them’ (WCED Literacy and Numeracy Strategy, 2006: 6). She thus spends almost half the lesson time eliciting one-word answers from their everyday life experience. In the reading phase, where she is the only one who reads, full-sentence answers are required but this activity only takes up one-third of lesson time. Writing is restricted to single words, taken from word cards.

In order to analyse what is happening in this classroom we refer to a 2008 national Department of Education (now Department of Basic Education) publication, Teaching reading in the early grades: a teacher’s handbook. The division of time that is recommended in the Handbook for ‘reading and writing focus time’ (2008: 3) is as follows:

- teacher guided reading and independent reading (50% of time)
- whole class shared reading and writing (25% of time)
- word level and/or sentence level (25% of time)

The Handbook explains that this suggested time division is based on a conception of progression from shared reading by the teacher, to student reading under the guidance of the teacher, to independent student reading, with a balance between whole class, small
group and individual work. Shared reading should lead to shared writing and then to individual writing, with word- and sentence-level work growing out of previous reading and writing. Links between the context of the text and students’ own ideas, experiences or opinions should be made after student reading and, through questions asked by the teacher, this should be aimed at the development of higher-order cognitive abilities such as analysing, evaluating and interpreting – even in the Foundation Phase.

In line with OBE, this approach is essentially constructivist but it is based on a theoretical grasp of early reading acquisition that determines the selection of text, the order in which activities should be undertaken and the time that should be allocated to each activity.

The transcript shows, however, that a theoretical understanding of early reading acquisition is absent in the observed lesson; or, if it is implicitly present, it is subordinate to an interpretation of constructivism that foregrounds meaning as residing in the realm of students’ everyday worlds. So much time is spent on bringing students’ life worlds into the classroom that there is insufficient time to realise the connections between activities that are crucial to promoting reading acquisition. What results is a somewhat haphazard formulaic adherence to ‘lesson steps’, which, at surface level, resembles a reading lesson but which effectively privileges listening and speaking, rather than reading and writing.

**Classroom 2: Teaching ‘divisions of fractions’ in a Grade 2 Numeracy classroom**

This lesson focuses on division (equal sharing) with the deliberate production of a fraction (i.e. a half). In terms of the NCS (FP) Mathematics LA Statements, the lesson refers to the following Assessment Standards:

2.1.9 *Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary fractions (for example ¼)*

2.1.12 *Uses the following techniques: building up and breaking down numbers; doubling and halving; using concrete apparatus (for example, counters); number lines.*

Implicit in these Assessment Standards is the idea that learners are to develop a conception of fractions and equal sharing and elaborate their understanding of the concept of division.

The lesson is presented in Afrikaans and to avoid literal translation we provide an analysis of the lesson, with an English translation given in brackets after every Afrikaans word or phrase used. We pick up the lesson where the teacher moves to the chalkboard to demonstrate the method to be used.

*The demonstration performed by the teacher uses the value 7 as the context. The teacher starts by writing the number 7 on the chalkboard and proceeds to ‘pak hom uit’ (‘pack out’) in order to decompose the value into individual units. The students chorus the individual units as the teacher writes them on the board. The resulting notation can be seen in the diagram below.*
[The teacher appears to focus explicitly on the procedure of ‘pak uit’ – unpack – as a physical process or, more specifically, a procedure employed in the generation of a specific product. Decomposition becomes a local validity specific to the production of fractions and there is no sense that students grasp the concept of decomposition’s global validity applicable to the general concept of number.]

The teacher then moves on by demonstrating the division procedure, again making explicit reference to the physical aspects of the process. She starts by placing both her index fingers on the extreme units at both sides of the row constituting the value 7. The students chorus the procedure by stating ‘een vir jou, een vir my’ (one for you, one for me) and each time they chorus a step, the teacher moves each of her index fingers to the next unit, her fingers converging as she moves through the process. This process is reflected in Diagram 2.2 below.

When the teacher reaches the last unit, she stops and asks: ‘Reg, daar bly een oor, wat maak ons met hom?’ (Right, one remains, what do we do with it?)
This directs students to the fact that the one remaining unit presents a problem and cannot be dealt with in the same way as the preceding units. By doing this, the teacher obviates student recognition of this limitation, and ignores the notion that in Mathematics, new categories of numbers are developed because of the limitations of existing number sets (namely that fractions develop out of a need that natural numbers cannot satisfy). Even though this principle need not have been made specific in a mathematical sense, students could have gained this insight by attempting to share one equally between the two groups created using the 'een vir jou, een vir my' procedure.

The lesson proceeds with the teacher demonstrating the procedure for sharing one unit equally between two groups. By drawing a perpendicular line halfway along the length of the remaining unit, the teacher effectively splits the unit into two seemingly equal parts. The teacher then asks: ‘... as ons hom gedeel het, wat word daai stukkie genoem?’ (when we have divided it, what do we call that piece?).

From this question, it becomes evident that the students have already been exposed to fractions, or more specifically, to the notion of ‘a half.’

The students eventually provide the required response, i.e. ‘n halwe’ (a half). The teacher moves on by writing the notation for a half at a very specific location in relation to the ‘split unit’. Then the teacher isolates one of the resulting two groups by encircling it, carefully avoiding the inclusion of any unit or fraction not associated with that specific group (see diagram 2.3 below).

The lesson continues with the teacher formalising the solution on the chalkboard using the correct mathematical notation.

This is an important element of the process in that the teacher is familiarising the students with the syntax of Mathematics, which plays a pivotal role in how we communicate and express mathematical ideas. However, the teacher does this by using an equivalence sign to
the right of the initial procedure, effectively implying that the expression to the left of the equivalence sign has the same value to the expression on the right. This is not true when one looks at the finished product (see diagram below).

After the initial demonstration, the teacher proceeds to validate individual students’ solutions by performing the same procedure on each of the values selected by a student.

When applying the procedure to the number 1 and up until the isolation of a half as the solution, the students correctly prompt the teacher through the completion of the first four steps in the procedure. Before completing the final step in the procedure the teacher asks: ‘Nou as ek vir een deel, wat’s my antwoord nou?’ (Now if I divide one, what would my answer now be?). To this, the students incorrectly respond: ‘Twee en ‘n half’ (two and a half). After some more prompting and referring to the problem as written on the chalkboard, the students volunteer the correct answer.

[This is a signal that the students are not associating the meaning of division (division by 2 in this instance) with the concept of halving.]

Thereafter a student (A) is asked to demonstrate the method on the chalkboard. A selects an even number, namely 4, to which to apply the procedure – a value which would logically result in a solution excluding a fraction. Student A completes the first two steps of the procedure then turns to address the teacher. The teacher prompts A to continue and A appears to perform the sharing process from the right side only. A is immediately corrected by another student (B), in that the procedure was not applied from opposing sides of the unit row and did not include using both index fingers. A then repeats the sharing procedure in a way that complies with the teacher’s previous demonstrations and then goes on to isolate the same value as before.

[This demonstrates that even though this student could clearly see the solution and had probably started developing an understanding of the concept of division by two, the demonstrated procedure took precedence in the validation of the solution.]
Discussion
Analysis of the video-taped lesson shows that the procedural aspects relating to the concepts of fractions and division (as presented in the lesson) can be isolated as the object of the lesson. Affording students the opportunity to master this procedure seemed foremost on the agenda of the teacher and to this end the teacher appears to have been successful. Her obligation in relation to the AS also appears to have been met at first glance. As is the case in most classrooms, the teacher would consider this aspect of the Mathematics curriculum dealt with and would move on to the remaining AS to ensure coverage of the required content at this grade level. Whether the students have expanded their existing conceptions of the content (fractions and division in this instance) appears to be subordinate to the primary goal of curriculum coverage. Fundamental questions around understanding and conceptual coherence as it pertains to the domain of school Mathematics appear to be incidental. What is presented is a procedure, which entails careful adherence to the order in which the pre-requisite notation should be produced. Procedure of ‘doing’ is explicitly foregrounded and emphasised, with minimal insight into and reflection on why a given procedure generates a particular result. This leads to students being able to reproduce the required text yet without seeming empowered to work out the solution in ways that do not involve a physical process and without being able to generate an original text based on an understanding of the concept.

Factor 3: Language in the classroom

The issue of language of learning and teaching (LoLT) is contentious so we start the discussion with a brief outline of the two main positions.

When should English be introduced as the language of learning and teaching (LoLT)?

South Africa is a country of linguistic diversity, which is safeguarded by our Constitution, both in the Founding Provisions that give official status to eleven languages and states that ‘recognising the historically diminished use and status of the indigenous languages of our people, the state must take practical and positive measures to elevate the status and advance the use of these languages’, and in the Bill of Rights which provides that ‘everyone has the right to receive education in the official language or languages of their choice in public educational institutions where that education is reasonably practicable’.

However, in the years since the adoption of the final Constitution in 1996 the contention around what is ‘reasonably practical’ has not been resolved. Although everyone is in agreement about the need for access to English as an internationally-spoken language and as the South African language mainly used in business, politics and the media, there is disagreement about when English, which is the mother-tongue of a minority of South Africans, should become the language of instruction and assessment in schools, and the effect that early or late introduction has on both students and teachers.
The following table, based on 2001 census figures, gives a breakdown of language diversity in South Africa:

<table>
<thead>
<tr>
<th>Home language</th>
<th>Black</th>
<th>Coloured</th>
<th>Indian or Asian</th>
<th>White</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afrikaans</td>
<td>0.7%</td>
<td>79.5%</td>
<td>1.7%</td>
<td>59.1%</td>
<td>13.3%</td>
</tr>
<tr>
<td>English</td>
<td>0.5%</td>
<td>18.9%</td>
<td>93.8%</td>
<td>39.3%</td>
<td>8.2%</td>
</tr>
<tr>
<td>IsiXhosa</td>
<td>22.3%</td>
<td>0.3%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>17.6%</td>
</tr>
<tr>
<td>IsiZulu</td>
<td>30.1%</td>
<td>0.3%</td>
<td>0.2%</td>
<td>0.1%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Sepedi</td>
<td>11.9%</td>
<td>0.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Sesotho</td>
<td>10.0%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Setswana</td>
<td>10.3%</td>
<td>0.4%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>8.2%</td>
</tr>
<tr>
<td>SiSwati</td>
<td>3.4%</td>
<td>0.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Tshivenda</td>
<td>2.9%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Xitsonga</td>
<td>5.6%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Other</td>
<td>0.3%</td>
<td>0.2%</td>
<td>3.8%</td>
<td>1.1%</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>


There are essentially two main positions: that taken by those who support the additive bilingualism and multilingualism curriculum approaches of the Language-in-Education Policy of 1997, which suggests that students should learn an additional language(s) at the same time as maintaining and developing their home language; and, the one taken by those who support a ‘straight for English’ curriculum approach. Heugh (2001) argues that, in the 1990s, language-in-education policy discussions and the curriculum reform processes that resulted in the introduction of Curriculum 2005 in schools occurred as two separate processes and that this chasm has not been breached since.

Proponents of the language-in-education policy position draw on South African and international research which shows that children who switch medium of instruction before they have sufficiently developed and learnt the new target language of learning will not succeed (for instance, the landmark South African Threshold Report by MacDonald, 1990, the findings of which were corroborated by USA studies and various other studies, as discussed in Heugh, 2002). They also review three phases in the history of what, under the previous regime was called Bantu Education, to show that during the first phase from 1953 to 1975, when African children had eight years of mother-tongue education in primary school (until what was then called Std 6), during which time English and Afrikaans were taught as subjects followed by dual medium secondary school (half the subjects in English and half in Afrikaans), the school-leaving examination pass rates for African language-speaking students steadily improved from 43% in 1955 to 83% in 1976 (the year of the Soweto uprising). In the second phase after 1975 and the third phase after 1979, when the
use of mother-tongue as medium of instruction was reduced to six years and then four years, a steady decline in the school-leaving results became evident (Heugh, 2001; 2002).

Those who argue for English as the medium of instruction from the start of schooling refer to the language shift that is evident in all provinces as more and more economically advantaged parents (who do not have English as a home language) send their children to ex-Model C state schools or to independent schools, in an attempt to expose their children to English as early as possible,\(^{10}\) as well as more and more schools changing to English as language of instruction.\(^ {11}\) Evidence is also cited of research studies which point to a decrease in mother-tongue instruction in classroom practice and an increase in English language instruction (as discussed in Taylor and Vinjevold, 1999).

**Current policy on language of teaching and learning (LOLT)**

_The Language-in-Education Policy of 1997,\(^ {12}\) _drafted in terms of Section 3(4)(m) of the National Education Policy Act (Act 27 of 1996), commits the country to additive bilingualism and prescribes the parameters within which governing bodies of schools must determine a school’s language policy. Specific general policy provisions of the Language-in-Education Policy are:

- **Language of learning and teaching (LoLT):** The language(s) of learning and teaching in a public school must be (an) official language(s).

- **Languages as subjects:** (a) All learners must offer at least one approved language as a subject in Grades 1 and 2; (b) From Grade 3 (Std 1) onwards, all learners must offer their language of learning and teaching and at least one additional approved language as subjects; and (c) All language subjects must receive equitable time and resource allocation.

The NCS recognises the importance of mother-tongue instruction and states the following: (a) the additional language should be introduced as a subject in Grade 1; (b) the home language should continue to be used alongside the additional language as long as possible; (c) all learners should learn their home language and at least one additional official language; and (d) learners become competent in their additional language, while their home language is maintained and developed. In addition, the NCS indicates that learners should receive a minimum of three years’ tuition in a second additional language.

In the Western Cape official documents state that provincial targets will conform to whatever national policy is in effect at that time but will include the following two provincial elaborations:

- A learner’s mother-tongue should be actively supported in the classroom, wherever practicable, at least until the end of Grade 6. This refers to the use of mother-tongue as the language of learning and teaching (LoLT) in class groups of 40.

\(^{10}\) See eg De Klerk’s report (2000a) on a small-scale survey carried out in Grahamstown in the Eastern Cape.

\(^{11}\) The 2002 document _Language Policy in the Primary Schools of the Western Cape_ reports.

\(^{12}\) Details of this policy are currently being revised.
In addition to the study of two official languages as a subject, learners in the Western Cape should receive a minimum of three years’ tuition in the third language of the province. In order for learners to receive the maximum benefit from adding a communicative language, this Third Language of the Western Cape course will run from Grades 7–9 (WCED Literacy and Numeracy Strategy, 2006–2016: 20).

The 2007 WCED Language Transformation Plan suggests to schools and parents that their school’s language policy should conform to the above formulation and explains that ‘the ideal will be mother-tongue based bilingual instruction (MTBBE), which means that the mother-tongue is used for learning and an additional language is gradually added and strengthened to the point where it could be the LoLT after a period of say 6 years’ (2007: 4).

The challenges of policy implementation

The section on language policy in the Report of the Task Team for the Review of the Implementation of the National Curriculum Statement (2009) argues that many of the problems around language stem from the first years of schooling. Many schools are delaying the introduction of English until Grade 3, which is the year just before pupils are expected to learn through the medium of English. This is also a major finding of a study of 20 Grade 1 to 4 primary schools in Limpopo province (HSRC, 2008). The study found that poor quality of literacy instruction and lack of literacy opportunities of most Grade R to 4 students is limiting literacy development. This is as a result of a switch to English in Grade 3 only, combined with shallow and ineffective mother-tongue/home language literacy and language teaching from Grade R onwards. The study also presents evidence that neither mother-tongue, nor FAL (mainly English) teaching and learning is mastered optimally, if at all, and that the gap between middle-class children and previously advantaged communities and those from more vulnerable communities is increasing (Prinsloo, 2008).

The Task Team Report ascribes the late switch to English to possible policy confusion about how additive bilingualism should be implemented in practice, as well as to lack of clarity on Foundation Phase Learning Programmes which refer to only three Learning Programmes, interpreted to mean Home Language Literacy, Numeracy and Life Skills. This leaves no place for English as FAL, hence its late introduction. The Report also states that the current Foundations for Learning (FfL) campaign does not address the issue of English as FAL, nor does it provide clear steps and texts to be used in parallel teaching of reading and writing in an African mother-tongue and in English.

For these reasons the Report recommends that subjects in the FP should be increased to four, to accommodate the teaching of English as a separate subject. Out of 22 hours of officially mandated teaching time per week, six hours should be spent on Home Language teaching and five hours on FAL teaching. In Government Gazette No 1227 of 29 December 2009, the Minister of Basic Education recommends that the teaching of English as FAL must be given priority and that from 2011 English should be taught from Grade 1.
A growing body of research points to the work being done in English medium schools to assist non-English home language students to succeed, either through the intentional activities of schools and teachers (Bloch, 2000; De Klerk, 2000b) or through peer learning (Makoe & McKinney, 2009). We report here on the work of REP education specialists in two ‘no-fee’ schools located in an informal settlement adjacent to a large rural town. In both schools the home language of all students is isiXhosa, the community from which the students are drawn fall into the poorest quintile (in terms of poverty ranking), and both schools have consistently received ‘very weak’ ratings in the Grade 3 and Grade 6 WCED diagnostic tests. The findings reported here relate to teaching observed in FP classrooms during Numeracy lessons.

Students are intended to benefit from the development of a strong home language base that supports conceptual growth. However, REP’s finding is that in the classrooms observed, there is neither strong home language development nor additional language development. A mixture of languages is used in both spoken and written work:

1. When teachers speak they do not code-switch (translating from one language to another); they code-mix (using more than one language in one sentence), as is evident in the following examples:
   Teacher issues an instruction:
   (1) Nie apho nie
   Correct isiXhosa: Asikuko apha
   Correct English: Not there
   Correct Afrikaans: Nie daar nie

   (2) Nie leyo nie
   Correct isiXhosa: Asiyiyo leyo
   Correct English: Not that one
   Correct Afrikaans: Nie daardie een nie

   (3) Bangaphi oofive kutwenty?
   Correct isiXhosa: Zingaphi izihlanu kumashumi amabini?
   Correct English: How many fives are there in twenty?
   Correct Afrikaans: Hoeveel fywe is daar in twintig?

   (4) Bala tot kutwenty
   Correct isiXhosa: Bala uyokuma kumashumi amabini
   Correct English: Count up to twenty
   Correct Afrikaans: Tel tot by twintig

2. Students often write in the same mixture of languages. The following Grade 3 exercise reflects the names of the months of the year in a version of English although proper isiXhosa names are available.
3. Especially in the FFL programme, where materials are not available in isiXhosa, teachers are encouraged to translate mathematical terminology by using the syllables in the word and its English meaning to construct the relevant isiXhosa word.

Using the translation of the mathematical term *polygon* as an example we see, for instance, that three languages are involved in the translation. Teachers need know the English meaning of the Latin syllables to be able to translate into English and then into isiXhosa:

\[
poly = \text{many}; \quad gon = \text{side}; \quad \text{translated as ninzi = many and gon or side = cala.}
\]

So *polygon* = *cala-ninzi*. The correct term would be *amacala-amaninzi*, as a literal translation, but without the mathematical specificity of the term *polygon*.

The consequences of such language practices are far-reaching. Mathematical terminology acquired in a mixture of languages does not assist students to develop fluency in either mother-tongue or English (FAL). When students encounter ‘word problems’ in the diagnostic tests, the variant of written isiXhosa allowed in class may differ considerably from the correct isiXhosa language used in the test paper. This may result in students not understanding the questions, even though, if they did, they may be able to offer answers. Teachers themselves may not be proficient enough in both languages to be able to clarify mathematical terminology in students’ mother-tongue.

Language use in the classroom was by no means the only constraining factor observed in these classrooms. A very slow pace of work and the predominant use of worksheets that require students to fill in one word answers, instead of explaining their reasoning, were
equally prevalent. However, given REP’s focus in these particular schools on the language of learning and teaching, the main conclusion drawn is that confusion around how additive bilingualism should be implemented in practice extends to other LAs as much as it applies to the learning area of Literacy.

In Foundation Phase Numeracy, language is undoubtedly one of the factors contributing to poor conceptual development and poor results. While separating Home Language Literacy from English (FAL) and teaching both as separate subjects, as recommended in the 2009 NCS Review Task Team Report, is a step in the right direction, it does not address the practice of spoken and written code-mixing in the teaching of other subject areas. Such practices have negative consequences, in terms of inter-lingual and intra-lingual problems, for both the home language and English as FAL (Verhoeven, 1990), and even though Schollar (2008) cites various studies to show that the level of achievement in Literacy is not, in itself, an accurate predictor of the level of achievement in Mathematics, he also argues that:

... it is evident that until the language issue is effectively solved it will continue to play a very significant role in depressing the performance levels of children in our schools, and especially in their endemic underperformance in mathematics and science (Schollar, 2008: 14).

CONCLUSION

REP’s classroom observations point to three factors that relate to Taylor et al’s theoretical model of school improvement, namely: assessment, teacher knowledge and language in the classroom. Taken together, they go a long way to explaining why it is that diagnostic test results remain low, despite concerted efforts by district officials, REP education specialists and schools themselves to effect an improvement. The conclusion that can be drawn is that schools are faced with systemic challenges and shortcomings in teacher expertise that will take time to be corrected. In the short-term, REP tried to bring about improvement by placing a strong emphasis on the understanding and interpretation of diagnostic test results within a whole-school developmental approach by working with school management and grade/phase teams to help them to plan for improvement; and by working with teachers in classrooms. This work took place against the conceptual background of the Learning Pathway for Number (LPN) and the Learning Pathway for Literacy (LPL) (see Appendix 1), which were introduced into all REP schools and were also dealt with extensively in the ACE programmes. The assumption was that teachers cannot work with notions of conceptual progression, cognitive demand, and increase in content complexity, and the accompanying pacing requirements, if they do not have a clear idea of both the ‘destination’ and the ‘route map’.

In Part 3 we return to these issues and we draw on REP’s intervention experience to put forward a longer-term model for building internal accountability as the basis for external accountability.
PART 3

A MODEL FOR BUILDING INTERNAL ACCOUNTABILITY THROUGH TEACHER PROFESSIONAL DEVELOPMENT

INTRODUCTION

In this section of the report REP presents a model for school improvement that involves an integrated approach of support at all levels of the system. This links to the multi-level simultaneous school improvement strategies which REP employed. From REP’s experience, and as appears from the literature discussed previously, effective schooling and instruction depend on the degree to which processes and practices are aligned and articulated in relation to the entire system that supports education, including the national and provincial education departments, the whole school and parent community. This model also supports the recommendations of the *Report of the Task Team for the Review of the Implementation of the National Curriculum Statement* (2009).

In 2009 the Minister of Basic Education commissioned an investigation into the issues related to the implementation of the NCS, including recommendations for effective implementation of the national curriculum. The Task Team presented the following recommendations:

- a five-year plan should be developed to improve teaching and learning across the schooling system, with the intention of providing support to teachers and improving student performance
- one subject/LA Curriculum and Assessment Policy per phase should define support for teachers
- the role of Curriculum Advisors’ (CA’s) support to teachers in the classroom and at school should be clearly defined
- more teaching time should be allowed by reducing teachers’ administrative load
- assessment requirements should be streamlined and regular national systemic assessment should be conducted
- the curriculum load in the Intermediate Phase (IP) should be reduced and English as an FAL should be introduced from Grade 1
- national quality assurance and catalogues should be developed for textbooks and other learning, teaching support materials (LTSM), and each student from Grade 4 to Grade 12 should have a textbook per LA/subject
- curriculum implementation training of teachers should be subject-specific, as well as targeted and specific. Where necessary, school management, subject advisors and district officers should be trained on the Curriculum and Assessment Policy
The Review points out that curriculum reform needs to address implications for teachers and their practice at a classroom level, as well as greater alignment with curriculum processes.

REP’s contextual analysis (2006) found similar issues with the interpretation and implementation of the General Education and Training (GET) Foundation and IP Numeracy/Mathematics and Literacy/Language LA content and Assessment Standards (AS). In response to this, REP’s interventions between 2007 and 2009 focused primarily on supporting teachers at their schools and in their classrooms to plan instructional programmes across all grades. Analysis of internal and external tests was used as a strategy to identify curriculum shortfalls and content deficits. Diagnostic assessment was central to this engagement. WCED and internal school assessment tasks provide adequate tools for analysis and feedback on what the curriculum requires, but not on how to achieve the AS for each grade or how to prioritise and sequence the curriculum.

REP acknowledged that sustained improvement in schools requires sustained and specialised support from curriculum staff. It therefore set up processes to ensure that planning and delivery of the interventions were undertaken in collaboration with the WCED, at head office and district level.

Although there were similarities between the REP interventions, each represented a particular combination and sequence of activities and strategies. The interventions adopted a specific focus on teachers’ work as entry point for school-focused professional development, and included:

- aligning policies and programmes at WCED head office level as well as in each rural Education District Office (EDO)
- support to teachers, school management teams (SMTs) and principals with regard to curriculum management and planning
- provision of frameworks to understand Numeracy and Literacy learning and teaching

Firstly, areas of difficulty in Numeracy and Literacy were established through an analysis of poor performance of test items, based on each school’s WCED Grade 3 and Grade 6 diagnostic test results. Secondly, these areas were discussed with teachers and CAs, and frameworks were introduced for teachers to use in order to identify weak content areas and assess student performance. Thirdly, key aspects of curriculum planning and implementation were discussed, and instructional sequences planned.

The model presented here is based on teacher professional development activities that were introduced as part of the project, and include three specific interventions that were developed during 2007 and 2008 two years, namely:

- the use of diagnostic assessment to improve learning and teaching
- information, communication and technology (ICT) as a tool to support isolated schools and enhance learning and teaching support materials (LTSM)
- provision of structured support across all grades (in this case a textbook series for Mathematics)
A MODEL FOR SCHOOL IMPROVEMENT

The model presented below incorporates the common strategies employed by REP (meaning whole-school support, engagement with WCED, and links with the ACE), and includes other elements REP considered necessary for effective school improvement. REP proposes this integrated model as an approach to building internal accountability that employs teacher professional development as entry point.

Figure 3.1 A model for building internal accountability through teacher professional development

The rationale for this model is explained in the next sections where we discuss REP’s experience of the relation between current policy and ‘on the ground’ reality in schools and classrooms. Extensive reference is made to the recommendations contained in the Review as these recommendations are intended to ‘bridge the gap’ between policy and implementation. Each component in the model is numbered and we refer to these numbers in the discussion that follows.
National and provincial policy (1)

Any model of school improvement needs to be aligned to the national and provincial policy context. We thus provide a brief overview of the current status of curriculum policy and implementation.

The findings of the 2009 NCS Implementation Review show that there is a plethora of curriculum documents, that these are not entirely consistent and that they are often repetitive. The Review also suggests that the documents are unnecessarily complex and that it is therefore difficult to discern what is to be taught and learned and how (2009: 20). The problem is exacerbated at provincial level where documents are re-interpreted and teachers are provided with additional layers of curriculum material. The Review recommends that teachers should be given one set of documents per subject or LA in each Phase, from Grade R to Grade 12, and that these documents should become policy.

Regarding the use of textbooks, the Review notes that textbooks, as learning and teaching support materials (LTSM) are effective tools for curriculum delivery, but that teachers do not consistently use textbooks. The Review points out that many teachers develop their own worksheets and curriculum material. The recommendation is therefore that a national catalogue should be developed to ensure alignment with the Curriculum and Assessment Policy. Textbooks should be of excellent quality and offer appropriate content, methodology and assessment support. Subject specialists should be involved in the evaluation of textbooks.

The Department of Basic Education responded in a Curriculum Newsletter (2010) stating the importance of textbooks. The WCED forwarded a letter to all schools in 2009, committing the province to providing textbooks in all subjects to all Grade 4 to Grade 12 classrooms over the next three years. The WCED also encourages incentives for textbook recovery and use.

At school level, the EDOs are required to provide schools with clear curriculum implementation guidelines and assist teachers to implement the curriculum. REP found, however, that most schools report that they receive little support from their district and that they are overwhelmed by the administrative and technical nature of the planning that is required of them. They also indicated that they are not sure of what content to teach or how to do this.

REP also undertook an audit of all national and provincial policies and school circulars. The main purpose of this audit was to determine what resources are being used at schools and whether they are being used effectively. It was found that teachers were working with the NCS, and Strengthened WCED Literacy and Numeracy Strategy, 2006−2016. At the time of the audit, they had not yet been provided with Ffl milestones or related materials.

Internal and external diagnostic assessment (2)

The Review states that interpretation of the NCS assessment documents has resulted in a range of differing assessment practices. Teachers and parents believe assessment to be the
major problem behind implementation of the NCS. Teachers also reported that they find the AS too broad, being unspecific about what should be assessed and how this should be done. REP found that assessment practices in schools in the four rural districts on which the project focused, differed significantly and that many teachers were unsure of how to assess students or how to report on their progress.

REP focused on the use of diagnostic and formative assessment to inform teaching and learning. Result analysis of the WCED diagnostic tests aimed to assist teachers in identifying areas of weakness in relation to students’ grasp of content knowledge, and to adapt planning and teaching strategies to address these difficulties. Teachers reflected on student errors in test items and considered teaching strategies to address misconceptions. Teachers found the diagnostic analysis useful as a tool for critical reflection and ongoing improvement of teaching strategies. Schools were encouraged to introduce a system of regular formative assessment to assist teachers to identify specific Literacy and Numeracy content problems in their lesson planning.

WCED Grade 3 and 6 text results show that the majority of students are performing below the minimum requirement for these grades, while internal assessment and test scores often indicate performance at a satisfactory or even higher level. Teachers were thus encouraged to develop a set of test items and standardised assessment tasks and to use these on a weekly basis to track the progress of individual students. This will help them to plan for differentiated learning and teaching strategies. Teachers were assisted in the development of assessment tasks and tests per grade that were linked to the AS in the NCS. This ensured that the required content per grade was being covered and assessed at regular intervals.

Teachers were also encouraged to observe, interact and communicate with students to determine their levels of knowledge in order to inform the teaching and learning process. A breakdown of performance linked to concepts and skills per grade from the WCED Grade 3 and 6 school reports, weekly class tests and the development of Literacy and Numeracy item banks provided a structure from which teachers could determine student errors and misconceptions in particular content areas. This helped them to plan effective instruction that focused on actual learning needs.

Schools were encouraged to develop a clear assessment policy that included both internal assessment (class tests) and external assessment (WCED diagnostic testing). The importance of targets, as the basis of a development plan, was emphasised. Results were regularly compared in a review procedure with all teachers at a school and this Information was shared between teachers and districts. District officials were invited to participate in the analysis of the results of the tests, and to assist in revision and development of assessment tasks, based on the review procedure.

**Framework for implementation (3)**

In 2006, REP conducted a needs analysis with teachers to determine the specific support they required. A strong feature of the feedback received was the need for support in the classroom (in terms of methodology) and assistance with planning and development of concepts in the curriculum.
Based on this information, REP decided to provide teachers with a qualification, which would address issues of content and make theories and practices related to Numeracy and Literacy learning and teaching explicit. The two ACE programmes outlined in Part 1 were registered at UCT in 2007 and two teachers (one FP and one IP teacher) from each school were nominated to attend. These qualifications are based on frameworks or trajectories that present the core content and concept development related to children learning Numeracy and Literacy (see Appendix 1). These frameworks provided teachers with an overview of key milestones for development.

In line with the Review findings, REP found that no project school used a Mathematics textbook in all Grades (From Grade 1 to Grade 6). Where schools were using textbooks in the IP, teachers were not working from the same textbook series (2006 school audit). In most cases teachers had copies of the textbook, but students had to share limited copies. Alternatively, sections were photocopied for the lesson. Therefore REP introduced a Mathematics textbook series, from Grade 1 to Grade 6 in one Eden and Central Karoo cluster and one Overberg cluster. The series selected presents the Numeracy/Mathematics content as stated in the NCS and provides a clear trajectory for each strand of Mathematics that is to be developed, from Grade 1 to Grade 6. The content is explicit and references make adequate links between the NCS, Learner Book and Teacher Guide, as well as between grades. Learning and teaching activities are presented in the textbook series, with suggestions for discussion and questions. The series is comprehensive and sets out the content systematically with explanations of concepts and terms. It also includes good examples of standard and non-standard problems.

An assumption underlying this intervention was that an entry point to pedagogy and teacher education is the provision of a reliable textbook series that is linked to school-based support. This guides the teacher in achieving the aims of the curriculum, by presenting a framework for the form, order and pacing of assessment. Furthermore, it provides guidance on how to manage individual activities as well as assessment strategies.

The textbook series provided the basis for a structured intervention that assisted with planning across the whole primary school and gave teachers access to the content matter they had recognised as lacking. The Teacher Guides include detailed discussions on the Learning Outcomes and AS for Mathematics. They provide explicit guidance on possible teaching and assessment strategies and outline a learning trajectory for the major mathematical concepts, which are threaded through the curriculum. The Learner Books provide activities which enable students to hone their problem-solving skills. They address issues such as integration and inclusive education and encourage the development of language, comprehension and communication skills.

**Education District Office level (4)**

The Review notes that national and provincial government communication with schools via circulars is problematic as there is often confusion about the status and implementation of...
directives. The Review also discusses the critical role of districts in the support and implementation of the curriculum. It suggests that capacity should be enhanced at this level so that CAs can provide support to schools with regard to moderation, mediating the curriculum and providing appropriate LA or subject methodologies.

In addition, district officials should ensure consistency in interpretation and communication of policies, and assist teachers to develop and incorporate assessment tasks so that these inform teaching and learning. District officials should also provide clear criteria for the selection and use of a textbook series, ensure that this is in line with national curriculum policy, and ensure that all teachers and students at all schools have the full set of books. The CA’s role is essential as a mentor who can assist whole-school planning, demonstrate lesson planning and effective assessment planning across grades and explain concept development across the curriculum.

REP demonstrated the value of sustained guidance, coaching and mentoring of new ideas and approaches in teachers’ practice. REP also provided positive examples of instances where district officials were involved in the range of activities at all levels of the project.

**Whole-school level (5)**

The Review highlights the finding that teachers are not clear as to what and how to teach at the FP, and that the specification of the curriculum at the IP is uneven and therefore difficult to interpret. The Review also notes that this problem has been addressed at the primary level with the introduction of the FFfL assessment framework that presents milestones specifying clearly the content to be taught across the four quarters of each grade. In addition, teachers expressed a strong need for guidance on ‘how’ to teach particular content. Although the Review does not make strong recommendations in terms of addressing pedagogic issues (with regard to the lower primary grades), REP demonstrated several strategies that provide teachers with insight into effective and appropriate teaching methods, particular to specific grades and on specific topics.

A critical (but often taken as obvious) element of effective schools, is that teachers need to work together, to communicate learner progress between grades, to plan conceptual development across grades and to share teaching strategies and lessons. REP found that this was not the case in most of the project schools. A key element of REP’s whole-school support was planning within each Grade, Phase and across the FP and IP, in order to ensure that content is sequenced and progression in the curriculum is made explicit from one Grade to the next, with clear specification of what will be done and measured. The project assisted schools to identify curriculum problem areas and set goals to address these issues in the School Improvement Plan (SIP).

Many teachers spend large amounts of money on commercial schemes of work that present content in topic packages. These packages provide the support teachers need, but restrict their own research of content areas and development of other appropriate materials. REP thus demonstrated the value of using one conceptually coherent textbook series across the FP and IP (in this case in Mathematics). The intervention incorporated a textbook series as an effective tool to support curriculum delivery and assessment planning and provided
references to support teachers’ subject content knowledge. School Management Teams (SMTs) and Heads of Department (HODs) were encouraged to implement the textbook intervention and to establish processes to monitor teachers’ use of the textbooks.

Teachers worked through activities to develop their understanding of learning trajectories and how these could be used to diagnose learners’ actual level of development so that differentiated activities could be introduced to meet the needs of different groups or individuals in the classroom. They were inducted into the textbook ‘culture’ of activity-based learning, with a particular emphasis on the support which the Teacher Book provides. They were also advised on how adjacent books in the series can augment the resources they use in their classroom. Each school elected a representative to co-ordinate activities within the grade, and to be the contact person to collate items for the assessment item bank.

Analysis of the WCED Grade 3 and 6 learner test results was done during school visits at individual schools and the whole staff took part in this process. This provided the opportunity for an in-depth study of the various categories of Literacy/Language and Numeracy/Mathematics as presented in each school’s test report in order to plan instructional sequences accordingly.

The focus of REP’s interventions at a whole school level was on the implementation of policy and improvement of learner performance. Education specialists emphasised the fact that curriculum leadership was the responsibility of all teachers and not limited to SMTs, and that improved performance on the WCED Grade 3 and Grade 6 tests was a challenge for teachers from Grade R to Grade 6. REP encouraged whole staff collaboration around curriculum issues as a strategy to deal with conflict between teachers and the SMT.

**Classroom level (6)**

REP education specialists offered support to teachers in their classrooms. This support involved feedback on lessons, and at times co-teaching with the teacher. In many instances teachers asked if the REP person would demonstrate a particular method and this proved a useful strategy for engaging teachers in pedagogic issues related to certain content areas. Teachers were also encouraged to ‘peer teach’, and to share best practice with colleagues.

Teachers were assisted in planning differentiated lessons to accommodate students who were performing at different competency levels. Assistance in the classroom was also offered in terms of implementing the use of the textbook, to ensure that teachers linked the activities in the textbooks as well as other resources in classroom to the NCS. This model supports the principle of differentiation, as the teacher has clear guidelines for using differentiated activities within a textbook, as well as activities from adjacent books in the series, to promote individual progress. Teachers were encouraged to use the Teacher Guide and Learner Book on a daily basis, and to discuss the application of the textbook and lesson ideas with colleagues in other grades.
Parental involvement (7)

REP found that parent involvement in school numeracy and literacy programmes is limited, and that few parents are involved in after-school academic or sport activities. Although this aspect of the project did not develop as anticipated, discussions with schools referred to ways of including parents in numeracy and literacy activities and providing support at home through home visits. Suggestions were made for workshops to provide information on children’s learning and curriculum needs, and that volunteers assist with basic reading and classroom assistance, literacy and numeracy activities. Games at home were also suggested, and it was emphasised that the textbook is a basis from which learners can discuss what they are doing in the classroom. It was also suggested that schools show parents how to assist learners with homework tasks and offer to give parents ‘lessons’ on some of the topics their children are studying. In this way parents can be invited to join the learning process and gain insight into what the teacher is doing in the classroom.

Information and communication technology (ICT) for learning and teaching support materials (LTSM) (8)

The national policy on e-education presented in the Draft White Paper on e-Education (2003) states: ‘We want to ensure that every school has access to a wide choice of diverse, high-quality communication services which will benefit all learners and local communities. The services provided by the initiative will enhance lifelong learning and provide unlimited opportunities for personal growth and development to all’.

At a provincial level, the WCED’s provision of ICT to schools is evident in the delivery by the Khanya Project, which focuses largely on interactive programmes for students and teacher computer literacy courses aimed at improving curriculum delivery. The interactive programmes focus on content, while teachers are trained in the use of basic computer programmes and in the facilitation of learning programmes.

Although REP acknowledged that school-based support to teachers in remote schools is expensive and that regular support is difficult to maintain, ICT was introduced as a strategy to provide support to teachers through the use of electronic media supported by an electronic communication network. These technologies, very much like pens, paper and chalkboards, serve merely as tools of communication, and, in the absence of content knowledge, they remain just that – tools of communication. These tools need a substrate from which to operate. This substrate is content knowledge and, at a subsequent level, pedagogic knowledge. Comprehensive and complete engagement with disciplinary content knowledge, and in the case of teacher professional development, relevant pedagogic knowledge, must precede its implementation.

In particular DVDs of good lessons were used as a focus for discussion of particular concepts as well as approaches to teaching and managing the learning environment. Questioning techniques were demonstrated, and education specialists video-taped teachers’ lessons in order to reflect on these issues in practice.
ICTs have increased the frequency, convenience, cost, and speed of communication. At a basic level, teachers are able to text, or e-mail mentors for support. Support and sharing are also possible via on-line video calls. This allows mentors “into” the classroom to observe (Skype), comment on and even participate in lessons.

Learning management sites, such as UCT’s Vula, provide spaces for teachers and education specialists or mentors to discuss topics and experiences, post videos of lessons, share worksheets, activities and tests or tasks globally.

Should this system be extended to all schools, Education District Officials will be able to participate alongside teachers via e-mail, video calls and learning management systems. Ideally a stage should be reached where EDOs increasingly participate and replace the support of the service provider.

**External whole school evaluation (9)**

The Integrated Quality Management System (IQMS) is an approach to performance evaluation in the South African education system that is intended to provide teachers with a mechanism to reflect on and improve their practices. The intention of this evaluation is formative. It is linked to continuous professional development and holds teachers accountable for the quality of their performance.

The IQMS was set in place to identify specific educator, school and district office needs for support and development and to provide support for continued growth. The IQMS also sets out to promote accountability, monitor an institution’s overall effectiveness and evaluate educator performance (Schedule I of the Employment of Educators Act, No. 76 of 1998).

The IQMS consists of three programmes, which are aimed at enhancing and monitoring performance of the education system. These are:

- **Development Appraisal**
  The purpose of Developmental Appraisal is to appraise individual educators in a transparent manner with a view to determining areas of strength and weakness, and to draw up programmes for individual development.

- **Performance Measurement**
  The purpose of Performance Measurement is to evaluate individual teachers for salary progression, grade progression, affirmation of appointments and rewards and incentives.

- **Whole School Evaluation**
  The purpose of Whole School Evaluation is to evaluate the overall effectiveness of a school as well as the quality of teaching and learning.

These three programmes are implemented in an integrated way in order to ensure optimal effectiveness and co-ordination of the various programmes (IQMS Training Manual).

The national DoE has developed an internal and external moderation tool which is used internally by SMTs and implemented externally by EDO staff. In order for the IQMS to succeed at provincial level, district personnel and resources need to be made available to
ensure that the process is clear and that adequate training and support to schools is provided.

CONCLUSION

In Part 3, we used the opportunity to provide more detail about what it was that REP implemented in the different components of its differentiated intervention strategy. In the retrospective analysis presented in Part 1 we indicated that, in hindsight, it would have been more effective to focus on one or two support strategies and drive them forward consistently in all schools. However, if REP had done so, an integrated model, such as the one presented here, would not have emerged. The model transforms the REP activity structure presented in Part 1 into a more general depiction of the components of the integrated school support that a province offers its schools.

In this model the support role of the CA is clearly distinguished from the evaluation role played by the IQMS team. This separates ‘player’ from ‘referee’. School improvement specialists emphasise the relationship of trust that needs to be established in order for support to be effective. Quality management needs to operate at a distance, in order to bring a perspective that is not clouded by the contingencies of everyday life in a school. Both support and evaluation of performance are essential for effective improvement but they do not serve the same purpose.

REP focused consistently on developing aspects of the support role and it is hoped that the issues discussed in all three parts of the Report contribute to an enhanced understanding of that role.
References


Department of Education. 1998a. Norms and Standards for Educators. Pretoria


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APPENDIX 1
LEARNING PATHWAYS FOR NUMERACY AND LITERACY

INTRODUCTION

Our initial contact with the REP schools and subsequent needs analysis revealed that teachers do not share a common understanding of how children learn and how literacy develops from one grade to the other. There is also little understanding of how it develops within differentiated classrooms with students at different levels of development. Observations in REP classrooms and discussions during meetings with teachers revealed the need for the development of content knowledge and the introduction of various approaches and strategies at different levels of development.

Progressing from one stage to the next does not happen spontaneously and differs amongst students and from grade to grade in the primary school. Different children make shifts at different times and according to different areas of functioning. As experienced in REP schools, social contexts and demands influence progression and performance of students. In our study, teachers were observed interpreting stages of development in terms of students’ limitations and what the child cannot do at a certain stage. Instead, gradual progression should be the focus, as well as what eventually becomes possible as learning develops.

REP’s interventions were informed by conceptual frameworks that guided and focused the intervention and incorporated lessons from similar projects in South Africa and other parts of the world. The theoretical constructs that framed the REP model derive from two sources: the WCED Strengthened Literacy and Numeracy Strategy, 2006–2016 (WCED, 2006) and previous work done by the SDU,15 a theoretical framework or trajectory for the learning and teaching of whole number and teaching and learning of reading and writing – Learning Pathway for Number16 and Learning Pathway for Literacy (LPL).17

What follows is an explanation of the rationales and structures of both the above frameworks.

CONCEPTUAL DEVELOPMENT AND CORE COMPETENCIES

The learning pathways recognise that children progress through several distinct but related stages in early numeracy and literacy acquisition. These stages highlight what can be expected in developmental terms in the primary grades. In each stage children demonstrate specific qualities of understanding and skill that can be encouraged and built on in teaching-

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15 Count one Count All (COCA), 2004, project of the University of Cape Town, Freudenthal Institute, Utrecht University and Cape Peninsula University of Technology (Mowbray).
17 In 2006 Karen Malan at UCT’s School of Education developed the LPL framework with SDU staff. This framework is unpublished and informed the ACE Literacy/Language course and REP interventions.
learning situations. The LPN and LPL are intended to guide instructional design and the teaching process. These trajectories describe the learning process or pathway that children follow and highlight the main developmental milestones that they reach on this journey.

Each pathway describes and outlines:

- the learning process or continuum that children follow
- how teaching can most effectively link with and stimulate the learning process
- content, indicating which of the core elements of the curriculum should be taught – multiple skills can be learnt simultaneously and different concepts can be developed at the same time
- progression and sequencing
- assessment differentiation, different levels at which children master certain skills
- attainment targets

**THE LEARNING PATHWAY FOR NUMBER (LPN)**

The LPN gives an overview of how children’s growth in understanding of whole number develops in the early years of primary school. It provides a basis for gaining insight into how this process evolves and can be stimulated. This learning pathway supports teachers in the implementation of the curriculum by presenting a framework, which describes the knowledge base of how children develop number concepts and number skills from Pre-school to Grade 4. The LPN maps the transition from informal counting-based strategies to formal operations. This transition underpins the structure of the LPN.

Counting plays a major role in the development of early calculation, and initially counting and calculation are closely linked. The counting stages discussed in the LPN are to be used as a guide for describing counting and calculation and the various steps involved in the overall development. Although most children progress through these stages, they do so at different rates, according to their individual and unique development. The stages are not linked directly to the age of a child and should not be regarded as prescribed or fixed.

Mental and written calculations are integrated and closely linked in the early primary grades and therefore cannot be considered as separate, in the same way as early reading and writing are connected. The development of the mental and written strategies in the LPN is based on an approach to learning and teaching which uses a range of multi-method materials which provide models of and models for different problems and situations. Gradually mental and written operations are considered separately and formal algorithmic approaches to calculation are introduced.

The learning and teaching of counting and calculation as set out in the LPN is based on the principle that we use children’s understanding as a starting point, provide them with a range of problem situations that they can imagine, and then ‘scaffold’ the learning process by means of selected models. A range of number activities and models which include the use of structured and unstructured number lines supports this approach. Table 1 presents an overview of the stages of whole number development and key milestones for each stage.
Table 1: Overview of the stages of whole number development

<table>
<thead>
<tr>
<th>THE LEARNING PATHWAY FOR WHOLE NUMBER (LPN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAGE</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Stage 4 (Grade 3/4)</td>
</tr>
<tr>
<td>Stage 3 (Grade 2/3)</td>
</tr>
<tr>
<td>Stage 2 (Grade 1/2)</td>
</tr>
<tr>
<td>Stage 1 (Grade R/1)</td>
</tr>
<tr>
<td>Emergent number concept</td>
</tr>
</tbody>
</table>

THE LEARNING PATHWAY FOR LITERACY (LPL)

Literacy development too follows a specific pathway in which various stages occur that shape the child’s reading and writing abilities. The ‘what’ and ‘how’ of learning are equally important, and both require active engagement from children and educators alike. The LPL is aligned with the content of the NCS and gives an overview of reading and writing development. It is a useful teaching and learning tool, providing teachers with a common insight and language for understanding how young children develop and learn. The LPL provides a trajectory of literacy and language development that aims to:

- assist teachers in the FP and IP to understand the stages in which development takes place
- empower educators to ensure that students access essential skills as they progress along the abovementioned trajectory, irrespective of Grade or Phase in the GET band
- enhance content and pedagogic knowledge of the Literacy and Language LA as described in the NCS from Grade R to Grade 6

The LPL also demonstrates ways for the practical implementation of content, reflective teaching and learning, as well as strategies to improve learning in the primary grades.
When children come from literacy-impoverished homes, as is the case in most of the REP schools, teachers must provide a language-rich and literacy-rich classroom environment if we are to increase their chances of success in literacy development. The effects of poverty on language development are described below.18

### Effects of Poverty on Language Development

<table>
<thead>
<tr>
<th>Daily interaction</th>
<th>Tertiary Educated</th>
<th>Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40 min</td>
<td>15 min</td>
</tr>
<tr>
<td>Verbal response</td>
<td>250 x per hour</td>
<td>50 x per hour</td>
</tr>
<tr>
<td>Encouraging talk</td>
<td>40 x per hour</td>
<td>4 x per hour</td>
</tr>
<tr>
<td>Number of words</td>
<td>3 000 words per hour</td>
<td>500 words per hour</td>
</tr>
<tr>
<td>Number of words heard by age 3</td>
<td>42 million</td>
<td>13 million</td>
</tr>
</tbody>
</table>

Environments that value reading and writing; that contain a wide variety of texts; and, that find time for reading aloud and reading independently, are contexts that effectively promote the construction of meaning. Creating a classroom environment that provides plenty of support for literacy will contribute powerfully to children’s literacy development in school. This point applies equally to FP and IP classrooms. Teacher effectiveness is enhanced when the classroom environment provides a rich supply and a variety of quality texts that are used for a number of purposes to suit the many and diverse learners.

The LPL provides insight into how such environments can be created. It also highlights strategies to enhance children’s abilities through activities and methods of teaching reading and writing.

The LPL focuses on the relationship between pedagogical beliefs (theory and policy) in language and literacy education and classroom practice. It also engages teachers in the application of these theories and practices in their classroom. The theoretical background of the LPL is supplemented by strategies and activities to provide teachers with practical ideas that could be used in the classroom to achieve the Literacy and Language AS as described in the NCS.

The aim of the WCEDs Literacy and Numeracy Strategy is to improve literacy and numeracy skills and performance. The policy is based on the progressive learning theories of constructivism as well as on the whole language approach, discussed below. The strategy is based on the assumption that explicit teaching of phonics will take place within a whole language approach in which the making of meaning is stressed.

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The LPL is intended as a guide for planning instructional sequences. It recognises that most children progress through several distinct but related stages in the process of learning. The stages of the LPL, as presented in the diagram below, give an overview of literacy and language development, which begins with the pre-school stage of emergent literacy. It details the kind of activities in which children should engage en route to being competent in different contexts and with different aspects of literacy and language. The LPL clearly describes the development of reading and writing within and across the stages as illustrated below, and provides an understanding of how these stages differ and how children move from one stage to the other in a progressive developmental process.

**PRE-LITERACY KNOWLEDGE & SKILLS**

0 – 6 years
- Knowledge about functions/purposes of writing
- Print awareness
- Phonological awareness
- Oral language skills: Vocabulary
  - Extended, decontextualised discourse

**Stages of literacy development – Learning Pathway for Literacy (LPL)**

**Pre-literacy knowledge and skills**

Literacy-related behaviours that occur in the pre-school period are legitimate and critically important aspects of the developmental continuum of literacy. The foundations for learning to read and write begin at an early age, long before children begin formal schooling.
Children learn to read and write in an integrated way through engaging with various language-centred activities as well as print and writing experiences. Literacy concepts and the construction of meaning develop when children are exposed to reading and writing, a variety of texts and opportunities to engage authentically with print in both written and spoken form.

**Crucial skills that primary school teachers need to nurture**

- *Knowledge about functions/purposes of writing:* When children appreciate the value, functions and uses of written language, they will develop a curiosity about how written language works.
- *Print awareness:* The most effective way to learn about how print works is through experimentation.
- *Phonological awareness:* Children need to arrive at a point of understanding that letters in written words represent the sounds of spoken words, or, to put it another way, that marks on paper are a representation of *speech*.
- *Oral language skills – vocabulary:* Research shows that the size of children’s vocabulary is importantly related to their ability to comprehend what they are reading.

**Stages**

**Stage 1: Emergent reading and writing**

For those children in primary classrooms who are at a pre-alphabetic stage of reading, the teacher’s role is two-fold. Teachers need to consolidate skills in the four foundation areas of pre-literacy competence: knowledge about the functions and purposes of writing, print awareness, phonological awareness and oral language skills. They also need to facilitate the transition to alphabetic phases of reading by working on letter-sound knowledge and understanding of the alphabetic principle.

We should not see children’s unconventional attempts at writing as ‘mistakes’. During stage 1 the children are actively engaging and experimenting with writing, trying to decipher the rules of written language for themselves, for example:

‘Are you deaf?'

When teachers encourage children to experiment and play with the conventions of writing, the children gain enormously in the process, in terms of their literacy development.

**Stage 2: Beginning reading and writing**

The crucial task for the child at this stage is to develop an understanding of the alphabetic principle. If the foundation skills and developments discussed above are in place, children will be ready to move from partial alphabetic to full alphabetic understanding. The texts
they read must be appropriate for their level of reading ability, and meaningful, so that the child is engaged in making sense of a story or other kinds of information while reading, not just decoding single isolated words or sentences.

As they gain more mastery of letter-sound correspondences, children make the important discovery that they can use this knowledge to write down all kinds of new words. If they are encouraged to do so, they can think of a story, letter, message or poem to write and simply try writing it, using sound-letter translations as their guide.

Children will make many mistakes in the process, because they have not yet learned the correct spellings for very many words. But it is crucial at this stage that teachers allow for creative experimentation.

Stage 3: Consolidated reading and writing

At this stage, as before, practice in reading is the key to progress. The more a child reads, the more quickly recurring words will be recognised and the more fluent and automatic his or her reading will become. Developing children’s comprehension of what they read is especially important at this stage. Whether reading silently, reading aloud, reading individually or in groups, the emphasis should be on reading for meaning, and the key question for teachers to ask is whether children have made sense of what they have read. Alongside work on the technical aspects of spelling and handwriting, a key focus in the classroom must be to create opportunities for children to write in different genres – for example, stories, poems, plays, letters, journals, reports, definitions, descriptions, and so on.

Stage 4: Reading to learn and specialised writing

Teaching at this stage needs to focus on developing children’s comprehension skills in reading. This is not something that occurs in a separate ‘lesson’, but strategies for helping children to read for meaning must be integrated into every Learning Area across the curriculum in order to be effective. Just as the texts children are required to read become more complex as they progress from one stage to the other, so do the demands on their writing skills. Reading and writing that requires a child to construct meaning for him- or herself deepens understanding and it is thus very important that children realise that they are writing to learn and not ‘writing to show’. It is also important for children to be able to identify various features of texts (depending on the genre) and understand their purpose, for example, captions, graphs, pictures, diagrams, the index, the table of content, and so on.

Children at this stage use the various processes and strategies below during writing exercises. The table below presents the stages in the writing process.
Table 2: Stages in the writing process

<table>
<thead>
<tr>
<th>Processes</th>
<th>Activities</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>Thinking, recalling, brainstorming, free writing, outlining, clustering</td>
<td>Planning, Focusing</td>
</tr>
<tr>
<td>Drafting</td>
<td>Writing successive versions</td>
<td>Assessing</td>
</tr>
<tr>
<td>Revising</td>
<td>Re-reading, adding new information, re-organising thoughts</td>
<td>Assessing, Modifying</td>
</tr>
<tr>
<td>Editing</td>
<td>Proofreading, checking for spelling and grammar usage</td>
<td>Assessing, Modifying</td>
</tr>
<tr>
<td>Publishing</td>
<td>Copying, formatting, designing</td>
<td>Assessing</td>
</tr>
</tbody>
</table>

CONCLUSION

Many of the teachers in REP schools had very different opinions and understanding of the literacy and language Learning Areas and how to implement them in the classroom. Active interaction and participation with a range of different texts should be the goal, no matter what level of primary school or level of reading and writing skill. When children appreciate the value, functions and uses of written language, they will develop a curiosity about how written language works and the motivation to ‘crack the code’ of written language. This leads them to develop print awareness and phonological awareness.

The ACE course which was based on the LPL has introduced teachers to new strategies and theories relating to the teaching and learning of reading and writing. These reading and writing strategies can enhance children’s knowledge, skills and values, raise interest in the learning and teaching process, and give them opportunities to experience exercises that could stimulate reading and writing in both the Foundation Phase and Intermediate Phase of the primary school.

Learning Outcomes of the curriculum will not be properly attained if the teacher does not know how to enhance learning performance with useful strategies in which children can actively engage. Many of the teachers seem to have very different opinions and understanding of the Literacy and Language Learning Areas and how to implement them in the classroom. The LPL should be seen as a framework not in isolation but complementing other approaches for learning and teaching Literacy and Language.

It became apparent from discussions with REP teachers on the ACE that they struggle to engage learners in interpreting texts because of the low reading levels of learners. Many teachers reported that they did not stimulate the learners enough. Active interaction and participation with a range of different texts is the goal, no matter what level of primary school or level of reading and writing skill. Teachers need to understand the necessity of giving thought and planning to ways of integrating reading (and writing) experiences into the curriculum as a whole, so that reading is not a separate activity (Diane Hendricks, REP co-ordinator and literacy education specialist, 2008).