

Underperforming schools and turn around strategies that work or fail –

A literature review and framework for South African interventions

# Contents

[Abbreviations iv](#_Toc388862770)

[1. Introduction 1](#_Toc388862771)

[2. Theories of change 3](#_Toc388862772)

[2.1 Systematic theories of change – a macro level of focus with Beeby and McKinsey 3](#_Toc388862773)

[2.1.1 Beeby 3](#_Toc388862774)

[2.1.2 McKinsey and Company 5](#_Toc388862775)

[2.2 Types of schools– a meso level focus with Hopkins and Slavin 7](#_Toc388862776)

[2.3 Instructional variables that improve learning: a micro level of focus with Hattie, Hirsch, Engelmann and Sweller. 9](#_Toc388862777)

[2.3.1 Hattie on instructional variables that work 9](#_Toc388862778)

[2.3.2 Core Knowledge and Hirsch 13](#_Toc388862779)

[2.3.3 Direct Instruction and Engelmann 14](#_Toc388862780)

[2.3.4 Cognitive Load Theory and Sweller 15](#_Toc388862781)

[3. School interventions within more economically developed countries, less economically developed countries, and Africa 19](#_Toc388862782)

[3.1 Recent school intervention programmes in the USA – ‘turnaround’ 20](#_Toc388862783)

[3.2 Recent school interventions in England – the National Literacy Strategy 23](#_Toc388862784)

[3.3 Lessons learnt from school interventions in less economically developed countries and specifically from Africa 23](#_Toc388862785)

[4. School interventions in South Africa 26](#_Toc388862786)

[4.1 Types of interventions 27](#_Toc388862787)

[4.2 Levels of focus 29](#_Toc388862788)

[4.3 Phases targeted 31](#_Toc388862789)

[4.4 Domain of the intervention 31](#_Toc388862790)

[4.5 Selection of schools 33](#_Toc388862791)

[4.6 Mode of intervention 34](#_Toc388862792)

[4.7. What makes schools effective? Report of South Africa’s National School Effectiveness Study 36](#_Toc388862793)

[4.8 The Reading Catch Up Programme 40](#_Toc388862794)

[4.9 Community of practice models that work with an internal building up of instruction 41](#_Toc388862795)

[5. Short term systemic interventions that turnaround schools – a practice guide for Fresh Start Schools 43](#_Toc388862796)

[6. Application of insights of the literature review to the Fresh Start School’s Programme (FSSP) 46](#_Toc388862797)

[7. Conclusion 51](#_Toc388862798)

[8. References 53](#_Toc388862799)

[Appendix 1: Table of articles published on school interventions in South Africa (p28-29 ERA Final SDP Review Report) 58](#_Toc388862800)

[Appendix 2: Intervention evaluations within South African Education (p38-39 ERA Final SDP Review Report) 61](#_Toc388862801)

[Appendix 3: Meta Evaluation studies of interventions within South African Education (ERA Final SDP Review Report, p61-62) 66](#_Toc388862802)

[Appendix 4: An illustration of bimodality using Spaull (2011) 67](#_Toc388862803)

# Abbreviations

FSSP Fresh Start School Programme

GPLMS Gauteng Primary Language and Mathematics Catch-Up Strategy

JET Joint Education Trust

LEDC Less Economically Developed Countries

MEDC More Economically Developed Countries

NECT National Education Collaborative Trust

PMDP The Principals Management Development Programme

NSES National Schools Effectiveness Study

SACMEQ Southern and Eastern Africa Consortium for Education Quality

# 1. Introduction

There is a broad yet fairly consistent base of literature on turn around strategies that work or fail for underperforming schools. The difficulty is that much of the literature is either very general and speaks to generic principles for all schools or highly specific and speaks to specific cases in specific contexts. Both these levels of focus are important but it is hard to work effectively between them when looking for what interventions work for what schools. This literature review deals with the issue by making ten crucial distinctions, each of which bring different types of focus to bear:

* **Stages of a school system** gives a differentiated macro theory of change
* **Types of schools** gives a differentiated meso theory of change
* Effective **instructional mechanisms** gives a micro theory of change
* School interventions within **more economically developed countries, less economically developed countries** and **South Africa** caught between the two with a **bimodal** education system gives a general orientation
* The **time** of the intervention in terms of long term and short term strategies gives focus and intent
* Different target **levels** of intervention from district office to school and classrooms with its teachers and learners gives the overall scope
* Interventions based on **phases** of education from pre-primary to further education and training intensifies the scope
* Interventions within different school subjects (the **domain** of the intervention) gives the knowledge area
* **Mode** of intervention that explores the different ways interventions are made gives the strategy
* **Internal** or **external** approach or attitude of the intervention gives the political/moral orientation

Each of these distinctions brings with it different insights into school interventions, building up towards an analytical model that assists practitioners interested in making a difference with underperforming schools. At the end of the literature review, the insights of the review are used to interrogate the current design and implementation of the Fresh Start School Programme (FSSP).

# 2. Theories of change

This literature review splits up theories of change between macro, meso, and micro change theories.

## 2.1 Systematic theories of change – a macro level of focus with Beeby and McKinsey

We know that feedback mechanisms in schools result in more improvements than any other single factor (Hattie 1999). The issue with feedback is that only certain teachers use it, and these tend to be well educated and well trained teachers working within well developed systems of education. So we need a theory of change that helps us to understand the stages a school system goes through to reach high levels of feedback. We have a number of accounts of the stages of school improvement at a systemic level. This literature review outlines two such models – Beeby’s stages of growth and McKinsey and Company’s evolution of school systems

### 2.1.1 Beeby

Beeby clearly articulated stages of growth primary school systems go through. For Beeby there were two main drivers affecting the ability of an education system to improve: the level of general education of the teachers in the system; and the amount and quality of the teacher training received (1962: 6). Both point to the crucial role played by the teacher. Focusing on Primary schools, Beeby suggested that there were 4 stages of growth in how schools qualitatively developed. Schools started off with ill educated and untrained teachers working in ways that were unorganized, teaching very narrow subject content in a meaningless way, memorizing being all important. Beeby provides the following account.

The bulk of teachers are ill educated…the syllabus is vague…teachers fall back on the very narrow subject content they remember from their own school days. It consists of little but the completely mechanical drill of the 3 R’s and memorizing of relatively meaningless symbols occupies most of the time…all except the brightest children cease to make progress (1962, p6).

Beeby then goes on to make a crucial recommendation that these kinds of schools should not jump straight into progressive and constructivist pedagogies. What is needed initially is more formalism. It might seem that it is ideal to take teachers at this level and introduce them straight into teaching practically and directly from the world they know so well, using their own context to facilitate learners making meaning of the syllabus. However, this kind of learner centred teaching is based on complex and sophisticated ideas of learning and pedagogy. The problem with a school system at this level is that it is ‘confusedly and inefficiently formal. *It has all the defects of formalism and none of its virtues*’ (1962, p6). More formalism is what is initially needed, not less.

It is impossible to take the whole teaching cadre and provide them with the full education needed to be able to teach in a rich and deep way. Teachers are marked by how they themselves were taught. A teacher needs to be both well educated and well trained to enact progressivism and the high levels of feedback it demands. What can be done is to intervene at a training level and accept that training can only do so much. At stage two, poorly educated but trained teachers work with rigid methods that have a ‘one best way’ mentality, with one textbook. It is a bridge too far to expect teachers at this level to mesh specialized knowledge forms with everyday life experiences. Basic mastery of the first is needed; otherwise teachers fall into everyday life discussions that are poorly related to knowledge forms. Basic but crucial knowledge forms and strategies need to become embedded in practice. External examinations and inspections need to be carried out to ensure that these key basic forms are taught and learnt.

In the third stage, with teachers better educated and trained, there can be more focus on meaning, but this is poorly carried out with little variation from the syllabus and textbooks. There is the beginning of experimentation, debate and engagement. Beeby added a fourth stage in 1966 where well educated and well trained teachers work towards meaning and understanding within a wider curriculum that has a variety of content and caters for individual differences. Creativity and activity methods and problem solving are emphasized along with emotional and aesthetic well being (Beeby 1966, p72). Bad imitations of constructivism with rehearsal and improved education of teachers give way to more genuine practices, just as poor formalist practices improve into genuine formalism.

It is a model that has been much critiqued for its evolutionary stages and placing of learner centered constructivist education as the final attractor or endpoint of educational development (Guthrie 1980, 2011). Beeby has accepted some of the criticisms and partly reworked the model into a more neutral description (Beeby 1980) as have disciples such as Verspoor and Leno (1986). His major point was that these stages are hierarchical. It is impossible to jump from stage one to four without moving through two and three. Interventions must be directed specifically at the type of school and teacher involved and tailored accordingly. Many of the suggestions coming from the developing world and South Africa about improving quality in education are currently making suggestions that resonate strongly with level two – get a clear and simple curriculum, a quality textbook and a specific method that works with poor learners and then externally examine and inspect (Johnson, Monk, and Hodges, 2000 were ahead of the curve).

In South Africa we are currently circulating around the implications of this stage model (see appendix 4) as we begin to understand that we have a bimodal schooling system with a massive chasm between stages one and two (historically black and impoverished schools) and stages three and four (in the main historically white and enriched schools). Policy makers and school development experts are beginning to argue that schools located at different levels need very different kinds of interventions and the attempt to treat all schools equally is resulting in a massive drainage of resources and waste of human endeavour (Taylor 2008). Beeby’s stage model indicates what level must be aimed at to get schools barely functioning at level 1 (narrow subject matters meaninglessly taught in rote memorization) to level 2 (one best way, one textbook, strict examination and inspection) to level 3 (more focus on meaning, begin to experiment with different methods and feedback) to level 4 (creative and activity based learning in a wholesome classroom environment that has high levels of feedback). The difficulty is that as the education system evolves it begins to have all of the stages within its ambit, and the attempt to push it too quickly or slowly can result in failure as either the newer or older teachers become disillusioned or disheartened. There is an angle to reform, the art is to not make it too sharp or flat and to realize that one does not have to imitate the end point at the beginning.

### 2.1.2 McKinsey and Company

A similar stage model can be found in recent work on school improvement by the McKinsey foundation (2010). Led by Mourshed, the report identifies four system types ordered in a hierarchical fashion from poor to fair to good to excellent (McKinsey & Company Education: How the world’s most improved school systems keep getting better). These are similar to Beeby’s distinction between level 1 Dame schools, level 2 formal schools, level 3 shifting to meaning schools, and level 4 teaching for meaning schools. At the level of shifting schools from poor to fair levels, a very similar set of recommendations to Beeby’s shift from level 1 to 2 – basic curriculum, basic pedagogy, simple but effective resources that get teaching and learning going in a structured but elementary way. Two key points are made by the report: school systems at similar stages of development have adopted similar strategies for school improvement; and it makes more sense to learn from strategies of school systems at your own level *that are showing improvement* rather than trying to apply strategies that work for the best school systems of the world. Nevertheless, there are key lessons that any school system, no matter at what stage, needs to pay heed to. These were identified in an earlier McKinsey report (2007). Three key factors that were crucial for school systems improving were identified:

* The quality of an education system cannot exceed the quality of its teachers
* The only way to improve outcomes is to improve instruction
* High performance requires every child to succeed

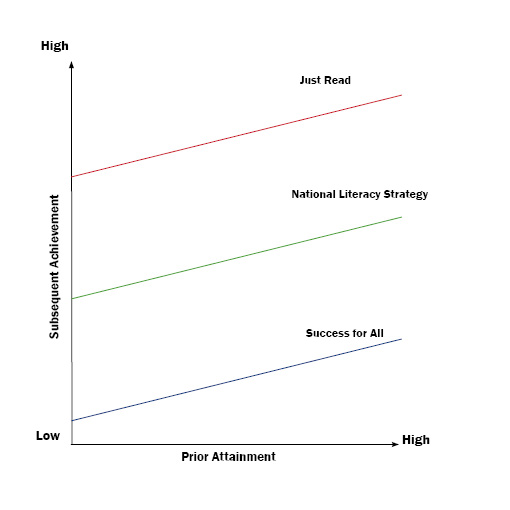
These three factors hold across different stages of school systems and provide a useful generic level check for school intervention programme.

These system theories place school systems in time, but they do not clearly articulate the different sub systems and levels of intervention that result in change. In South Africa, through the JET interventions, a coherent model of subsystems and levels of the education system has developed that works from district interventions all the way down to school leadership and management, teachers, learners, community and parents. It’s a coherent model of change but it has not reached the stage of working out how the different subsystems interact and which levers are more important than others. For example, much of the literature reviewed for this report point to the key lever of instruction and the impact of the teacher. If it is the teacher that carries the most leverage in the system then improving their competence and performance goes a long way to improving the quality of education. This should then be given extra ranking weight and causal weight in the model. Effective planning and organization is also important, but does not have the same leverage effect as directly improving teaching, mainly because it is one remove from the direct interface of teacher and learner. Nevertheless, research points to this being the second most important factor, especially if it focuses on the management of teaching and learning. In a similar vein, stakeholder support is crucial but is a number of removes from the actual chalk-face. A simple way to order the dimensions is on how close it is to directly impacting on the actual lesson. On this basis teacher competence and performance comes first, then planning and organization. Parental involvement and district support come next as both provide the school with its closest surrounding level (the family and the ward). Stakeholder mobilization on this ordering pattern would be the final dimension as it is at the furthest remove from the actual classroom (although still strongly linked). Research monitoring and evaluation would stretch across all these rankings depending on its impact on the classroom and how effective its feedback loops are. For example, the research on teacher and learner knowledge has a direct impact on teaching and learning and thus could be seen as taking priority over community engagement research. This lack of a theory of change between and within the various subsystems of education has led to the unfair labelling of such theories as a scatter gun model, where you shoot at everything at the same time and hope it works (Mouton et. al 2013). There is an element of truth to this label, but my own work on JET projects such as the Bojanala school improvement project have indicated to me that the functioning of the model is far more sophisticated than a scatter gun approach. Its more that at project level the simplest possible articulation of the theory of change is needed, otherwise the intervention fall down under the weight of its own sophistication.

## 2.2 Types of schools– a meso level focus with Hopkins and Slavin

*School system* theories of change can be augmented by *school* typologies (Hopkins 2001). These are drawn from the literature of school improvement in more developed countries like England, and one has to be careful about applying these models to a developing context. Nevertheless, these school typologies are useful. Hopkins (2001) develops a typology with three types of schools – failing schools; moderately effective schools; and generally effective schools. They note that type 1 schools need massive amounts of external intervention, as they do not have internal accountability mechanisms in place to in anyway deal with change. Slavin also has three types of schools “Seeds schools are ones capable of developing and implementing their own reform models, and only need general principles and support. “Bricks” schools, a much larger category, are ones that would be unlikely to co-develop their own innovations, but are capable of faithfully and effectively implementing well - developed models created elsewhere. “Sand” schools are ones incapable of either creating their own models or implementing externally developed models” (Slavin 1997, p1). Recommendations at this level are tough – there is a need to be dramatic and powerful, with high external intervention changing the way things are done at the school, often through a removal of leadership figures who are incompetent and a focussing on a few strategies that will turn around a school.

What is interesting about these typologies of schools is that it allows school intervention programmes to differentiate their mediations based on whether the school is type 1, 2 or 3. For example, in England, the National Literacy Strategy (elaborated further on) is an intervention that works best for type 2 schools (moderately effective schools assisted to become more effective). The NLS does not work that well for failing schools that need high levels of external intervention, or already effective type 3 schools that resent outside interference on their already well functioning systems, and could do with more general encouragement. Type 1 schools would do better with an initial turnaround intervention (like Success for All) and type 3 schools with a more general encouragement (like Just Read). See Hopkins (2001) *School improvement for real* London Routledge Falmer, p172-8).

**A Framework for considering the relationship between literacy strategy and school performance**

The issue in South Africa is that these types of schools take on a highly distinct bimodal pattern (Spaull 2011) due to the continued effects of Apartheid and Separate Development. Whole swathes of South Africa have poorly functioning schools of the Type 1 variety that are pushing towards moderate functioning; and then, in very distinct and separate areas, small pockets of moderate to well functioning schools pushing towards excellence. This is key to understanding how change works in South Africa, but the discussions of bimodality tend to be complex, so I include an appendix that uses Spaull’s work to show just how powerful the bimodality effect is in South African schools (Appendix 4)

These theories of change work at a macro and systemic level and do not provide micro details about how to change the micro practices of teaching and learning. There are numerous micro theories of change, of which this literature highlights four that are relevant to the focus of this review:

* Identifying separate instructional variables that impact on learning;
* Core knowledge;
* Direct instruction;
* Cognitive load theory.

The theory of change articulated by Braam Fleisch in South Africa is then used as a South African example of how these theories come together as a theory of instructional change.

## 2.3 Instructional variables that improve learning: a micro level of focus with Hattie, Hirsch, Engelmann and Sweller.

There has been increasing recognition in the literature on school change that instruction plays a key role. Some of the key theories of how instruction results in improvement of learning can be fond in the works of Hattie, Hirsch, Engelmann and Sweller.

### 2.3.1 Hattie on instructional variables that work

One way of going about identifying what interventions work is to survey all extant studies on effective interventions, separate those that are ‘scientific’, and build up a list of strategies ranked from most effective to least effective. This provides a grounded theory of change that allows the key variables resulting in improvement to emerge from the wealth of the world’s published knowledge on the matter. Such an approach does have obvious difficulties in that systematic change is broken up into independent elements and it can be hard to see how they all hang together. But so long as this approach to change is held together with more systematic theories of change, it is very productive. Hattie’s *Visible Learning: a synthesis of over 800 meta-analyses relating to achievement* (2009) works with a gross number of   
236 000 000 students and learners - over ten percent of all the children in the world. The influence of the variables is ranked from highest to lowest, with an effect size of over .40 considered worthwhile (Hattie 1999).

**Influence Effect-Size**

Feedback 1.13

Students’ prior cognitive ability 1.04

Instructional quality 1.00

Instructional quantity .84

Direct instruction .82

Acceleration .72

Home factors .67

Remediation/feedback .65

Student’s disposition to learn .61

Class environment .56

Challenge of Goals .52

Bilingual programmes .51

Peer tutoring .50

Mastery learning .50

Teacher in-service education .49

Parent involvement .46

Homework .43

Questioning .41

Peers .38

Advance organisers .37

Simulation & games .34

Computer-assisted instruction .31

Instructional media .30

Testing .30

Aims & policy of the school .24

Affective attributes of students .24

Calculators .24

Physical attributes of students .21

Learning hierarchies .19

Programmed instruction .18

Audio-visual aids .16

Individualization .14

Finances/money .12

Behavioural objectives .12

Team teaching .06

Ability grouping/Streaming .05

Physical attributes of the school -.05

Mass media -.12

Retention (fail students) -.15

A brief word is needed about the effect sizes to make sense of the list. As Hattie embarked on the synthesis he quickly found that almost any intervention made a difference. As he puts it –

When teachers claim that they are having a positive effect on achievement or when a policy improves achievement this is almost a trivial claim: virtually everything works. One only needs a pulse and we can improve achievement. Setting the bar at zero is absurd. If we set the bar at zero and then ask that teachers and schools “improve achievement”, we have set a very low bar indeed. (Hattie, 2009, p16).

Hattie sets the bar at d = 0.40, which is the average effect size of all the attempts to improve achievement in his synthesis. In effect, he is looking for those interventions that are better than average. That is why, in the table above, there is a separation at 0.40, giving the top 18.

The issue is working out what set of factors work together as education is a systemic whole that relies on the mutual working of its parts. Where Hattie’s meta-analysis helps school improvement interventions is in the featuring of **feedback** as the most vital of variables. On the list above feedback comes up both first and eighth, but it is also found as a major component of other highly rated intervention techniques - instructional quality, direct instruction, acceleration, mastery learning and questioning all contain feedback. Clearly feedback is a vital variable in school improvement interventions, but the issue is **what type of feedback**, given its multiple manifestations. In 2007 Hattie wrote *The Power of Feedback* with Helen Timperley where he grapples with the issue. One of the first things the article does is show how some kinds of feedback are more powerful than others. Here is the breakdown from best to worst inside the world of feedback (Hattie & Timperley, 2007, p84):

Cues (1.10)

Feedback (0.95)

Reinforcement (0.94)

Video or audio feedback (0.64)

Computer assisted instructional feedback (0.52)

Goals and feedback (0.46)

Student evaluation feedback (0.42)

Corrective feedback (0.37)

Delayed vs immediate feedback (0.34)

Reward (0.31)

Immediate vs delayed (0.24)

Punishment (0.20)

Praise (0.14)

Programmed instruction (-0.04)

Cues feature highest as a feedback mechanism and it refers to the subtle process of teachers indicating to learners when they are right and wrong and offering alternative strategies of how to move forward. It is a very difficult skill that only good teachers have as it depends on extensive content knowledge and pedagogic content knowledge. It is very hard skill to teach as it relies on so much background experience and insight, as well as a dynamic and worthwhile classroom space. So although these kinds of meta studies are useful for school improvement interventions to get a sense of what the power of the individual variables are, there is no indication of what a systematic intervention programme would look like, or the difficulty behind inculcating some of the highly rated skills, especially in developing contexts. This should not stop an attempt to glean from these meta-studies as much information as possible. Interventions that try to improve learning have a massive history within education research and a first take on this history is to sort through the research and provide a list of what works and what doesn’t. It’s only a starting point.

At the heart of feedback, for example, is a simple three step process where

* information is imparted to students,
* their understanding is checked, and
* the next act of the teacher works with the level of understanding of the student as the base for a new move.

It is clear that such an approach takes time, needs highly skilled teachers, and if successful, allows for the continual build up of knowledge. The issue is that there is a lack of teachers able to work effectively with feedback, and the coaching of feedback skills is a long and expensive process. Knowing that feedback is the most important variable in effecting changes in learning does not assist an intervention determining how to actually work with feedback.

### 2.3.2 Core Knowledge and Hirsch

The theory is that if you want learners to build upwards in complex knowledge structures within human, social, and natural sciences then you have to organise all the knowledge they need into a specific curriculum sequence that ensures they actually know enough about the various areas being learnt (Hirsch 2006). This is a very difficult and complex task that is way beyond the individual abilities of a teacher and also beyond the usual specifications of a curriculum (Hirsch 1996).

Experts design a fully explicit curriculum that makes clear what knowledge and skills are needed for each subject in each year so that everything works with everything across and between years in an integrated way but still develops subject specific specialisation. The curriculum is not just specified in terms of general expected outcomes and competences, all the necessary content is specified and given: what rivers, mountains, books, music, art works, historical figures they need to know about. **Do this systematically across all subjects and the theory of change predicts that disadvantaged learners in poorer contexts will improve their results, because they actually have the content base to understand what is expected** (Hirsch 1987).Teachers who are inexperienced or who do not have extensive knowledge of their subjects tend to focus on what they already know and stay away from what they are unfamiliar with. This results in large gaps on the one hand, and lots of repetition on the other. Strong specification in and between years results in wider and deeper coverage and frees teachers up to concentrate on how they are teaching, taking them away from laborious hours planning the curriculum. As the learner knowledge base widens and deepens so does their ability to comprehend texts. This was the fundamental insight that struck Hirsch, the founder of the Core Knowledge Foundation, when doing reading tests with students from a university and a community college. Both sets of students could decode the words of the text but they had radically different levels of background knowledge on the topic (the American Civil War), and this resulted in the community college students not understanding what the text was about. This held for all subjects, not just hierarchical ones. Hirsch set about developing a content-based curriculum that ensured all children would have all the content they needed in a structured and systemic manner. Hirsch argued that students from more impoverished backgrounds come to school and university with smaller background sets of cultural literacies and content knowledge needed to understand what is going on in specialised subjects. A tightly specified curriculum that starts in kindergarten (Hirsch and Holdren 1996) and coherently organises content throughout the educational history of a learner overcomes this gap.

### 2.3.3 Direct Instruction and Engelmann

Core knowledge does not tightly specify the implication sequences of the knowledge. It gives the content but not all the various moves and links necessary to understand how knowledge builds upwards in abstraction and complexity. Direct Instruction, specifically in the form Engelmann gave it, works with **tightly scripted implication sequences that take the learner through the logic of the lesson in small incremental steps** (Engelmann and Carnine 1982). The theory is that each implication within a lesson is small and simple, its how they all come together that is often hard to grasp. If a learner is given each micro move in a carefully organised and tested sequence, with examples that are expertly chosen, and repetitions that reinforce understanding, then learning will follow. Engelmann takes any knowledge system at the heart of the curriculum and breaks it down into its logical classes and relationships Engelmann, Osborn, Osborn, and Zoref 1995). Then he works out sequences that are so logically clear that anyone will get it if they are following and the teacher does it properly. These scripted lessons allow the teacher time and energy to focus on the lesson itself by cutting down on preparation time. By following such set implication sequences both teacher and learners come to a better understanding of the subject at hand, and learn what is needed in more efficient and effective ways.

### 2.3.4 Cognitive Load Theory and Sweller

Although well known as a theory of learning and instruction, cognitive load theory has not been widely cited in school intervention literature. It is the contention of this review that it is crucial for understanding how to work with underperforming teachers and learners and addresses specific dangers and mistakes often made by intervention strategies that try to do too much too quickly.

The key reason for its importance is that it **points to the danger of overloading working memory when trying to do too much in too complicated a way**. When intervention programmes come into schools with suggestions on how to change pedagogy, change content, change discipline, change, change change, what happens is that teachers’ working memory is flooded over with the amount of change asked for, *resulting in a highly restricted ability to actually learn and make sense of the intervention*. Cognitive load theory points to three different kinds of load carried by the teaching and learning process:

**Intrinsic load**: some tasks are more complex than others due to their inner makeup and what they already expect the learner to be able to understand and do. *Doing a calculus problem expects you to have already mastered algebra*. If you do not have a good knowledge of algebra you will really struggle with a calculus problem, even if it is carefully worked out for you. So one way to make the **intrinsic load more manageable is to ensure that the basics needed to do the task are already well understood**. A student with a working understanding of calculus will find a calculus problem easier than a novice calculus student.

**Extraneous load**: instructional strategies to teach and learn a task. You cannot avoid extraneous load, but you can reduce it by becoming skilled in what pedagogic choices work to focus attention on the problem at hand, rather than distract attention away with showy side effects. The six effects listed below provide a guide to pedagogic techniques that work best for novice learners of a task – not experts. Experts enjoy cracking a difficult, obscure, multiple task that a novice will collapse under with cognitive overload.

**Germane load**: the work done by thinking, reflecting and making meaning of a task. It is vital that space is left in working memory for this process, otherwise the academic work done does not make it into the bigger schematic structures of long term memory.

Sweller, Van Merriënboer and Paas (1998) point out six pedagogic techniques that reduce extraneous cognitive load for novices, thus increasing the space for intrinsic and germane load. The theory is that the more space opened out in working memory through simplification, the more space for making meaning and understanding. The six simplification strategies are:

**1. Goal free effect**: Don’t give the long term goal of the problem under exploration at the same time as the problem itself, rather focus on the problem and allow the goal to emerge once the problem has been understood. If you say what the goal is before doing the problem then the learners have to try and work out the relationship between the problem and the goal BEFORE they have understood the problem.

**2. Worked example effect:** Don’t just give novice learners a problem to solve, rather start with a worked example that shows what the steps of the problem are and how to solve it in its simplest form.

**3. Completion problem effect**: Once the learners have been given a worked example provide a problem that has some of the steps already done and get the student to complete it. By reducing the size of the problem space to one or two steps that need completion you reduce extraneous load.

**4. Split attention effect**: Be careful of multiple sources of information that expect the learner to integrate the different bits together. Rather provide one integrated source of information that the learner can focus on.

**5. Modality effect:** If you are going to use different sources, then make sure that you combine the auditory with the visual channels. For example, replace a visual combination of a picture and a written explanation with a visual picture and an auditory explanation.

**6. Redundancy effect**: Be careful of multiple sources of information that all do something similar. Rather have one source that does it all properly.

These strategies point to a critique of minimally guided teaching techniques (Sweller, Kirschner, & Clark, 2007) and strongly argue for a more structured programme that ‘takes the load off a learners mind’ (Van Merriënboer, Kirschner, and Kester, 2003; Van Merriënboer, and Kirschner, 2007).

Some of the most recent efforts of interventions in South Africa (such as the Reading Catch Up programme) harmonise with all three of the above theories, but do so in a systematic way that identifies how to effect change in a developing context within South Africa.

Firstly, like Core Knowledge interventions it identifies all the necessary knowledge needed and provides it in one coherent whole that is carefully sequenced.

Secondly, the actual lessons are sequenced in a scripted manner, much like Direct Instruction.

Thirdly, the lessons go back to the point of actual abilities of the learners, not their expected level according to grade. The reading programme goes back to curriculum demands from at least two years prior to the learners’ current year. This allows learners to actually grapple with the lesson content, make sense of it, and start to place the learning into long term memory and extend the meaning networks that help to make sense of the topics and embed the skills. Care is taken to simplify the pedagogic demands right down to simple and repeated rituals and routines, reducing extraneous load and allowing space in working memory for intrinsic and germane loads to work.

Expert coaches are then used to help teachers take ownership of the programme and assist them to keep up with the new demands, given that they will initially experience the intervention in overload mode, no matter how simple it is.

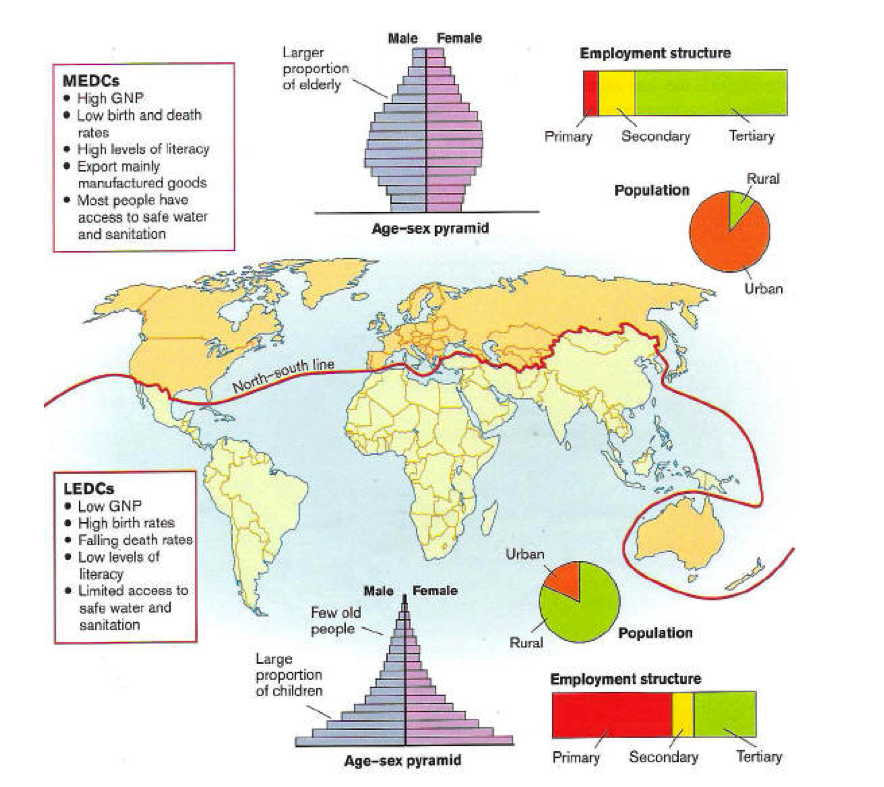
What is clear about the Reading Catch Up Programme is that it understands the difficult balancing act between making new demands on teachers through the intervention, and stripping down the intervention to its simplest elements so that it is not overwhelming, whilst at the same time understanding the actual level learners are working on and then starting from that point in a systematic and organised manner. Although results from this intervention still need to be published, it is to be expected that such an intervention should work if carried out properly, and due care is taken to allow space for learners and teachers to make sense of the practices. The biggest issue with such a strategy, as we shall point to later, will be with the external nature of the intervention that makes ownership of the process a difficult hurdle.

# 3. School interventions within more economically developed countries, less economically developed countries, and Africa

School interventions that try to turn around poorly performing schools exist across the world. In South Africa, we can learn from all of these efforts so long as we clearly discriminate between those interventions that are working in more economically developed countries (MEDC) and those working in less developed economic countries (LEDC). The reasons for this are obvious and have to do with the massively different contexts of these two types.

A number of simple indicators catch the difference between these two worlds. In the more economically developed countries of the ‘North’ fewer babies are born and die less frequently, you live for longer and earn more money; in the less economically developed countries of the ‘South’ more babies are born and die more often, your life expectancy is low and you earn very little. In a MEDC you are very likely to live in an urban area; in a LEDC you are likely to be living in a rural area and either trying to migrate to a city, or squatting near one.

The age-sex pyramid clearly reveals how MEDC’s have a larger proportion of adults in comparison to children, resulting in a more skilled population over all, whereas LEDC’s have a far larger proportion of children to adults, meaning that the burden of economically bringing children to adulthood is carried by a far smaller set of adults. Notice that the employment structure bar graph indicates that most adults in MEDC’s have tertiary degrees and high skilled occupations, whereas in LEDC’s most adults only have a primary education and struggle to secure highly skilled occupations. So you have more adults with higher qualifications and skills in MEDC’s and less adults who mainly only have a primary education in LEDC’s.

All of these indicators correlate fairly strongly with education. The more educated a country is as a whole, the higher the gross national product and higher the life expectancy tend to be. There is not a necessary correlation between the quality of a school building and the quality of education in the school. As human beings we can think on our feet and commit with our hearts in the toughest of conditions, we are not bound to the conditions we find ourselves in – but they do provide the parameters we work within. It’s possible to enable a quality education experience in a poorly built and equipped school. There are always possible human choices and interactions in given circumstances. Nevertheless, having water, electricity, functioning toilets, desks, chairs and windows in a school helps. So as the literature review gives examples of recent school turnaround interventions in the USA and England, it is important to bear in mind the difference in levels of economic development

[**http://www.sln.org.uk/geography/schools/blythebridge/gcsedevelopmentc&m.htm**](http://www.sln.org.uk/geography/schools/blythebridge/gcsedevelopmentc&m.htm)

## 3.1 Recent school intervention programmes in the USA – ‘turnaround’

School turnaround in the USA is a recent policy direction that shifts focus from incremental and continuous school improvement to specific and direct interventions targeted specifically at persistently low-achieving schools. It took centre stage when Arne Duncan became the US Secretary of Education under Barack Obama in 2009. There had been a long history of concern about poor performance in the USA, but with the banking collapse in 2008 a tighter and more focussed policy was inaugurated by targeting America’s 5000 lowest performing schools with concentrated interventions. Precisely what the interventions would be for ‘turnaround’ came from research and experience with improving low-achieving schools. The issue was that much of the extant research on turnaround strategies was anecdotal, with weak causality strength. For example, in 1997, 6000 schools participated in the Comprehensive School Reform Demonstration Program where research based improvement models were used to improve schools that had high levels of student poverty. 500 different models were used and the results were telling. No middle school or high school models showed improvements that reached moderate strength of effect. Only two models at primary school showed moderate strength, and both were instruction based and prescriptive in orientation. Most disappointing was the finding that no models at any grade showed a strong effect (Rhim and Redding, p22).

Combined with this disappointing result was the finding that restructuring schools not making adequate yearly progress was also failing. In 2002 the USA passed the reauthorization of the Elementary and Secondary Education Act that allowed action to be taken against schools that had failed to show AYP for six years. The problem was that only 19% of the restructured schools made AYP (Rhim and Redding p22), resulting in a serious quandary – *schools using research based models for school improvement were not showing much improvement and schools under restructuring were also not showing improvement*. It was in this context that stronger mediations were called for that made more direct and targeted interventions. In 2007, two key publications synthesised extant research on turnaround strategies (Academic Development Institute Center on innovation and improvement; and The Turnaround Challenge (Calkins, Guenther, Belfiore, & Lash) outlined key leadership strategies that resulted in effective turnaround. In 2008, these publications were supplemented by the Institute of Education Sciences report ‘Turning around chronically low-performing schools (Herman et al). The report showed that there were no rigourous control studies on turnaround strategies, forcing a reliance on case studies with low causal validity. Nevertheless, four turnaround strategies were identified:

* Clearly signal the need for dramatic change through strong leadership with an emphasis on change having to happen ‘here and now’
* Consistently focus on improving teaching and learning and make immediate changes that affect instruction. Use data driven strategies that identify student gaps and track performance
* Ensure early quick wins that show visible improvements. Do not try to do too many things too quickly. Keep a narrow focus and ensure it happens
* Concentrate on building a staff in the school committed to the process

This growth in Turnaround literature and research received further impetus in 2009 when Arne Duncan declared his intention of focussing on the lowest 5% of schools with massive monetary incentives for districts who undertook to participate in the transformation programme. The Turnaround strategy was one of the options schools in the bottom 5% could choose and clear evidence emerged of its success (Dee, T. 2012. School turnarounds: evidence from the 2009 stimulus. Cambridge, MA: National Bureau of Economic Research). By 2012, the USA Department of Education set out Turnaround principles that States should use when applying for funding:

* Provide strong leadership in the school
* Ensure teachers are effective and able to improve instruction
* Extend learning time
* Strengthen instruction
* Use data for continuous improvement, and use it in a collaborative way
* Improve school culture by focussing on safety, discipline, and health needs
* Engage with community and family (USA Department of Education, 2011) (p25)

The strengthening of Turnaround research, literature and practices in the USA was given a further lift up with the failure of the No Child Left Behind Policy. Most schools in the USA had not come close to ensuring that all students would be proficient by 2014, forcing the government to introduce a ‘waiver’ loophole, allowing States to apply for latitude in terms of the NCLB standards if they undertook to still hold schools and districts accountable to high standards, and if they outlined specific strategies to deal with the lowest performing schools. To co-ordinate these efforts the U.S. Department of Education established the Center on School Turnaround in 2012. Its mandate is to build support for local turnaround efforts, create a regulatory environment that supports turnaround, administer and manage turnaround grants, and provide technical assistance. Although South African strategies to ‘turnaround’ schools has many differences with the USA, the wealth of knowledge, research and expertise generated in the USA is useful for our own endeavours. At the end of this review, we will use the lessons gained in America with turnaround strategies to assist South Africa’s more recent endeavours in this regard. It should be noted that the American schools are not as dysfunctional as the equivalent South African schools – they are better resourced, have more highly qualified teachers, and have legislative support and financial support for the interventions at national level.

Another experience that is helpful from the school turn around programmes in the USA is their experience with what does not work. Most dangerous is an inundation of fix up strategies from different departments and interventions, forcing these schools into a compliance mode where form after form and promise after promise is made with plan after plan. This is very damaging to any genuine effort at reform. A corollary to this is that the amount of form filling must be kept to a minimum and should almost always only facilitate completion of the current bureaucratic load, not add to it. External expert teams that come for a couple of weeks, make recommendations and then leave are also useless. School improvement offices with inadequate authority or accountability are also problematic (School turnaround strategies that have failed, 2010).

## 3.2 Recent school interventions in England – the National Literacy Strategy

In England there has been a systematic attempt to improve literacy across English schools over a long period of time, starting in 1998. A daily literacy hour was introduced that has direct instruction with explicit objectives and dedicated time. These practices replaced more open practices like free reading time where teachers gave little or no intervention. Reviews of the strategy pointed to a need to increase direct teaching and time on text; using more balanced teaching approaches that provided extensions; use of systematic phonics, and teaching writing (p4 Roger Beard. National Literacy Strategy: Review of research and other related evidence. University of Leeds, undated). The intervention focused on providing detailed teaching and learning at word, sentence and text levels that uses techniques that have research evidence as working. Clear targets were set, data on performance was collected and used, teachers were held accountable and when difficulties occurred, interventions were implemented. The National Literacy Strategy was implemented mostly in inner city schools and the evaluative research clearly pointed to systematic and impressive performance levels (Machin, S and MacNally, S. Large benefits, low cost: is the government’s National Literacy Strategy effective? Centrepiece, 2004)

## 3.3 Lessons learnt from school interventions in less economically developed countries and specifically from Africa

School interventions dealing with poorly functioning school systems in less economically developed countries need a more basic set of intervention guidelines. One such account is given by Helen Abadzi in Efficient learning for the poor (2006) where she recommends seven pillars of basic skills for all:

* Support children’s brain development and health
* Use available instructional time effectively
* Ensure textbooks are available and can be taken home
* Teach fluent reading and calculation in early grades
* Use basic and effective teaching strategies
* Ensure effective teacher incentives and oversight.

These are all key, but she notes that if fluent reading and calculation is not learnt in the early grades, then inefficiencies will reverberate all the way through the education system (Abadzi 2006, p.xi).

If Abadzi gives a generic account of what principles work in developing countries as a whole, we also have research that summarises lesson learnt within sub-Saharan Africa. For example, Curricula, examinations, and assessment in Secondary Education in sub-Saharan Africa (2008) provides a lengthy list of what does not work in terms of interventions (pxii-xxii). It’s a curious list that does not sort through the research literature in terms of what research is valid, but it does provide a picture of hard lessons learnt:

* Beware of spiral build up curricula that do the same topic each year at higher and higher levels of complexity. Experience on the ground suggest that the same topic is simply repeated year after year
* Beware of integrating topics across learning areas
* Accept the reality of code switching
* At junior secondary level reduce possible subject combinations and rather focus on deeper content with fewer subjects
* Implementation of active learner centered strategies have proven problematic across Africa
* Beware of over complicating the job of teaching
* Beware of continuous assessment. In Nigeria Continual Assessment is called ‘continual harassment’
* Failure at primary level will have an extended knock on effect at secondary level
* Be careful of radically replacing one set of pedagogic techniques with another. Rather work incrementally with small changes.

All of the above research on effective intervention strategies at school level sits within a global consensus that has marked education as crucial for human development. There is not much consensus about what the post 2015 targets for education are going to be, given the difficulty of articulating measurable standards and goals at a global level, but there is recognition that quality issues are surfacing after the past 20 year drive to improve the quantity of education. Even at this global level there is an increasing recognition that ‘future development goals will need to tackle the core challenge of learning’ (King 2012, p 34).

# 4. School interventions in South Africa

One of the strongest reasons for the recognition of the need for turnaround strategies in South Africa stems from the poor performance of our students in comparative tests with other countries. The argument that this poor performance was due to our social and economic conditions being worse than more developed countries who participated in international comparative tests (Trends in International Maths and Science Study, Programme for International Student Assessment,) was destroyed when regional comparative tests in Southern and Eastern Africa showed South African to be substantially underperforming in relation to peer countries. Poorer students in neighbouring countries that were spending less money on education were doing substantially better. This pointed to the underperformance of South African schools rather than the socio economic status of its students. The clear conclusion is that there is space for South African schools to improve given existing conditions (Taylor, 2008). If countries close to South Africa were getting better results spending less money with poorer students then there was room for improvement in South African schools.

Research on how to improve school performance in South Africa has tried to address this serious underperformance. The issue is that only some of the published research is reliable enough to make some generalisations from. The most useful current account that exists of the extant research on school interventions that make a difference to learner performance is Johan Mouton, Lauren Wildschut, Teri Richter and Robin Pocock’s Review Project for the Zenex Foundation (2013). The review undertook a rigorous examination of studies on school interventions. What makes it so useful is that it covered four different types of studies: scholarship; meta-evaluations; intervention models; and government/NGO sector programmes. Full lists are provided of all studies and these are ranked by a credibility rating. Although the whole document is of interest, for the purposes of this literature review, *Part Four: A conceptual framework for designing school interventions* provides key insights into both the problems school interventions face as well as lessons learnt. In what follows this literature review resonates with Mouton’s review quite closely.

## 4.1 Types of interventions

The report distinguishes between two types of approaches to school interventions in South Africa:

* the shotgun/scattergun approach;
* and the targeted approach.

The shotgun approach works with the full complexity of education and attempts to make interventions across all levels, whether these be district, school, classroom, officials, principals, teachers, learners, curriculum, pedagogy, health, material infrastructure, learner support materials. The hope is that a really complex problem will be solved by a really complex intervention. An example of this is the district development model.

The targeted approach deals with only a specific problem and tries to focus on it.

The choice of the term ‘shot gun’ is unfortunate and *does not capture the systemic underpinnings of this kind of approach in South Africa*. Long term and large scale school interventions in South Africa have developed powerful theories of change and an understanding of how the different parts of the education system hang together. These have been integrated together by the two main non governmental organisations involved in school interventions – The Joint Education Trust (JET) and ZENEX (Schollar and Roberts 2011). Experiences from both these organisations have flowed into the current massive attempt to improve schools across the country through the National Education Collaboration Trust(NECT). It has taken all the lessons and experiences from previous large scale interventions and synthesised it into one massive effort across South Africa to improve teaching and learning in underperforming schools. The district development model of school change that has informed JET interventions over the last 15 years or so cannot be called ‘shot gun’, even if it still has to develop the model in more detailed ways. This literature review **replaces the term ‘shot gun’ with ‘systemic’**. This gives us our first distinction in terms of approaches to school interventions as being either systemic or targeted or both. Often there is a main approach that is systemic and then a supplementary approach that is targeted to work with those areas needing extra work, especially in hierarchical subjects like Mathematics and Science. This distinction needs to be supplemented by a distinction between long term and continuous interventions on the one hand, and shorter and sharper interventions on the other. Turn around strategies are shorter interventions that attempt to make dramatic changes quickly. This gives us four types of interventions:

* Long term systemic approach
* Long term targeted approach
* Short term systemic approach
* Short term targeted approach

Each type of intervention has advantages and disadvantages. The long term systemic approach works across and between levels of education. Because education is a complex system with many levels, parts, phases, and domains it needs interventions that work across and through its parts, otherwise improvements in one aspect are thwarted by failures and inadequacies at other levels. The danger with these kinds of interventions is that they become very complex themselves and risk failure due to the many components being held together simultaneously. *The project cannot replicate the education system as a whole, it has to provide a simplified model that identifies key components. It is in how a long term systemic model simplifies the complexity of the education system by identifying key variables and leverage points throughout the system in a clear and organised way that the success of such models lie*. The strongest insight in the literature is that this simplification must focus on instruction as a priority across the system.

A long term targeted approach identifies key areas that need massive improvement and concentrates on them. How to identify a key target depends on an analysis of the situation and a theory of change but three basic rules of thumb are clear.

* Identify leverage points that give the most effect for the least effort.
* Identify key blockage points that are preventing the system from functioning normally.
* Identify key variables that are known to be the most important for effecting change.

A short term systemic approach is a sharp and urgent intervention that stresses the immediate necessity of change. Turnaround strategies are provided that look for quick wins and interrupt the current way of doing things. It is used for schools that are dysfunctional and need a radical interrupter to shift attitudes and practices. Quickstart programmes in South Africa fit this model, although this kind of intervention sits within a broader and more systemic model.

A short term targeted approach identifies one selected issue of urgent importance and then works on it until success is shown. It has the merits of providing focus and energy but risks a reversion to normal practice afterwards.

## 4.2 Levels of focus

All of these types of interventions have to identify a level of focus that either focuses one or a number of levels together. Six levels are readily apparent, both in the interventions of JET, ZENEX and the current interventions of the NECT.

* District
* School
* School managers
* Teachers
* Learners
* Parents and the community

District challenges revolved around limited capacity and resources, difficulties of distance and terrain getting to schools, the district office not understanding the school context, and failures of communication, The review points out that functional districts are crucial for the success of school interventions. The more challenges a distinct office faces, the more danger the school intervention faces (p85). If the district is dysfunctional then there has to be an intervention at this level as well. This can be a very difficult process given the entrenchment of staff due to labour laws.

At the school level it is clear that whole school interventions are needed, given the systemic nature of a school. The report puts it strongly: “any intervention that does not target the “whole school” is due to fail’ (Mouton et al. p86). The issue is that whole school improvement takes a long time, is expensive, and is prey to the various changes that happen over the years of the intervention. The more spread out the intervention across schools, the less the impact and the quicker the reversion to older practices. The **more intense the focus on fewer schools**, the higher the impact **but then the schools struggle due to local inefficiencies in their areas.**

At the principal and school management team the report points out that although this group is vital for improving learner performance, ‘many…do not have the capacity to mediate the curriculum and strategise to move schools forward. There is also insufficient evidence to show that interventions targeting principals necessarily result in improved learner performance’ (Mouton et al. p86). Recent interventions that focus on getting the principals to do the actual work mandated of them by the Department have been very successful, precisely because the project has not reinvented the wheel but just got principals to do their current jobs better. The Principals Management Development Programme (PMDP) is a current successful model that focuses on an applied intervention that gets principals to do their current jobs; works on the relationship between the ward manager, the principal, the SMT and the SGB, and builds communities of practice at principal level (Naiker 2011).

At the teacher level the report points to the reality that many teachers have insufficient content knowledge and the difficulty of dealing with this issue, especially given that it is a key variable to improving learning. Reviews of studies on the effect of accredited courses on teacher knowledge points disappointingly to largely limited benefits (Mouton et al. p87). This has forced a rethink of both how universities conduct their courses for teachers. There is no shortcut to improving teacher knowledge, it is a hard and long process that needs sustained mentoring and follow through right into the classroom.

Interventions directed specifically at the learner level can and do produce immediate change, but issues of scale are prohibitive. These kinds of interventions are also mostly content and context specific, making it difficult to use it for systematic reform (Mouton et al. p87). They work for the learners concerned in the short term but do not solve more systemic issues.

At the parent level there are clear benefits to be derived from parental support, but the review points out that poor education levels and exhaustion from work demands strongly mitigate parental involvement (Mouton et al. p87). Research by Wilburn (2013) points to it not being necessary to have strong parental involvement in school affairs. Projects that spend much of their effort on parental support can better optimise their efforts by focussing on instruction, and getting parents involved simply as supporters of the instructional process.

What becomes clear from the review of extant research and experience with targeting the above levels is that they are all important, but each provides specific and highly problematic issues that strongly militate against the success of the intervention. When dealing with a dysfunctional district office, problematic principals, teachers with poor subject knowledge, learners who face extreme living conditions and parents who are illiterate and exhausted, it becomes **clear that school interventions, whether of the systemic or targeted approach, face enormous challenges. School intervention projects have to be humble in the face of such enormous difficulties and backlogs and focus on getting poorly functioning schools to function moderately well, not to aim at excellence. If the intervention focuses on moderately well functioning schools, then excellence can be defined as a long term goal, but the term ‘excellence’ should be used very carefully.**

## 4.3 Phases targeted

A school improvement intervention also has to decide what phase to target – Grade R, Foundation, Intermediate, Senior, FET. It is clear from the review that ‘the earlier the intervention the better’ (Mouton et al. p88). The reasons for this are obvious and have to do with the foundational nature of the skills learnt, on which all the later phases depend. Interventions at the later phases often have to go back to the earlier phases to ensure that the basics are understood, meaning that later phase interventions have a bias towards returning to earlier phases. Learners who do not have the basics of reading, writing, numeracy, and language facility fall further and further behind, meaning that interventions located at the higher phases have to go further and further back to start making an impact. Interventions that do not recognise this reality and attempt to make the intervention at the phase it is located in risk failure. If the intervention is located at the FET phase, then a major part of its focus must be at the senior phase level; if the location is at senior phase, then much of its focus must be at the intermediate level; if the location is the intermediate phase, then much of its focus must be at the foundation phase.

Identifying the targeted group therefore has to deal not only with who is targeted at what level, but also the phase. One the one hand we have a shift in organisational levels from district all the way down to the classroom, on the other we have the phases of learning. But even this does not go far enough in identifying the target of an intervention. The substantive focus of an intervention still needs specification – is it non-learning areas (governance, school leadership, curriculum management); or is it a learning area (Literacy, Numeracy, English, Maths, Science, Other); or both?

## 4.4 Domain of the intervention

By domain we mean the actual focus of the project. It can be a specific subject or learning area on the one hand or a non subject area like management on the other. The literature on school improvement points to the following factors as important within non subject areas of a school.

* Governance – to be effective, school governing bodies show skills of change management, conducting effective meetings, conflict resolution, co-operation, financial planning, policy knowledge, problem solving, sound knowledge of schooling and the school, teacher discipline, team work, time management, writing (Mouton et al. p92-93)
* School leadership and management – the literature points to a lack of management skills that negatively affect student learning. In dire cases the principal needs to be removed, and clear focus given to a limited set of factors like attendance, the timetable, and the learning course (p94). Basic accountability is needed. Partnerships with external agencies and with the community assist leadership structures. The Principal Management Development Programme is an excellent example of how to deal with inadequacies at this level.
* Curriculum management was reported as crucial with the following factors improving performance – teacher teamwork and collegiality, monthly meetings that plan and monitor with participation from leadership, adjusted pacing to the levels of learning (Mouton et al. p97).
* Other non learning areas included barriers to learning where emotional and social well being of learners was focussed on; and ICT development enabled increased learning

In terms of learning areas and subjects, the literature focussed predominantly on literacy and mathematics.

Literacy – the importance of reading and the language of learning and teaching (LOLT) was pointed to. Good reading skill is obviously important for learning but research in South Africa like Howie, Venter and van Staden (2008) point to very low levels of reading ability in most South African students. It is clear that two home factors improved learning: reading and homework (Taylor 2009). To improve literacy a culture of reading needs to be established by increasing access to books, allocating specific times to reading, and by monitoring reading achievement (Mouton et al. p100). The LOLT is a very complex issue in South African education and is responsible for much of the poor performance of learners. Most teachers cannot speak English properly, and learners struggle to negotiate the transition from home language to English. This creates enormous difficulties from foundation phase all the way through the schooling system. Interventions that directly address reading skills must show an improvement in learning, with current interventions showing enormous promise (see the Reading Catch Up Programme discussed further on).

Mathematics – teachers’ knowledge of mathematics and how to teach mathematics is weak across the country (Mouton et al. p108). This is aggravated by poor understanding of English, which is mostly the language of instruction for mathematics. Due to the complexity of mathematics, interventions need to be sustained and long term in order to produce results, with many interventions struggling to show any marked improvement in mathematics learning. There is very poor coverage of the mathematics curriculum meaning that interventions have to go far back and develop basic concepts and skills supposedly taught many grades before.

Similar points hold for Science. It is also a hierarchical subject that depends on what has been understood and learnt before. Any hierarchical subject demands an intervention at the current level of learner understanding, not the level of the grade the learner is in. In addition to this basic tenant – the learner will not be able to understand the subject if she cannot read and write. What both these tenants point to is the massive amount of work needed at subject level to get learners within poorly performing schools minimally functional.

## 4.5 Selection of schools

It is also important for an intervention project to carefully decide what schools are being selected. Geographic location of schools directly impact on learner performance. Furthermore, the success of interventions is often correlated to whether the school is dysfunctional or minimally functional. Scholar and Roberts (2011) have clearly pointed to the need for basic functionality of the school as a pre-condition for the success of an intervention. The difficulty is that there is a moral and communal urge to focus on the worst performing schools. District officials will often recommend dysfunctional schools for interventions precisely because they are so bad, often condemning the intervention in the process. *Interventions that work with dysfunctional schools must build into their expectations a high degree of failure*. A detailed understanding of the context of the schools is needed to enable decision making within the project. This can be done by doing district level analyses that provide the intervention with contextual information about the sets of conditions school are working under. Finally, rigourous selection of schools is needed to improve evaluation of the project. Only recently has it become important to work with randomised control trials in terms of the selection of schools, but this is set to become an increasingly important factor in project evaluations.

So far we have identified a number of variables that need to be considered when designing and implementing a school improvement intervention – the level (district, school, teacher, learner, community); the phase (foundation, intermediate, senior, further education and training); the domain (non learning areas like governance, management, barriers to learning; or learning areas like literacy, numeracy, language, mathematics, science); and the selection of the schools. When all these factors are combined we have identified the target group and also reviewed extant research findings on all the sub components of the target group. We still need to review findings on the intervention mode and implementation issues.

## 4.6 Mode of intervention

A school intervention needs to know how it intends to change the target group. On the one hand this is a fairly simple issue as there are different modes of intervention like training, support, resource allocation, or learner interventions. On the other hand there is a theory of change that underpins the intervention. The biggest education intervention organisations (JET and ZENEX) have explicit theories of change. JET works with a Quality Learning Programme that has a clear change model working with a number of precise variables that identify key performance areas at the district, school, teacher and community level. The ZENEX Foundation has a project model that it uses across its different projects, enabling more precise project evaluations and accumulation of evidence and recommendations. The current effort of the NECT also has a coherent theory of change based on the accumulated experiences within JET and ZENEX. However, when looking across all extant literature on school interventions in South Africa, there is substantial weakness in identifying an explicit and coherent model of change. The earlier part of this review dealt with this issue by suggesting a model that worked at macro, meso, and micro levels. **But even with an implicit theory of change, all interventions have to have a certain mode being used to drive the change.**

There are many modes of interventions. *Incentives schemes* have been put in place in the Western Cape with monetary rewards and incentives for schools doing well in system wide tests like our Annual Assessments. National government’s Dinaledi programme also offered incentives but take up was slow. Far more predominant that incentive schemes are *training interventions* for teachers, heads of department and principals. Most training interventions provide clear areas of focus, but these range from management skills and teaching methods to actual subject knowledge content (Mouton et al. p118). There was no clear evidence that accredited training resulted in better performance than non accredited training, but some basic and obvious findings emerge from the literature on training-

* it should be targeted and specific,
* it must be of high quality,
* it must not try do too much,
* it should have on site follow up, and
* at a teacher level there needs to be a critical mass within a school before training effects sustain themselves (Mouton et al. p120-121).

Another mode of intervention is to provide support to the school or the teacher by providing mentoring, teacher assistants, help with the management of the school, and developing partnerships between the school and the community. Feedback from schools generally show appreciation for support but sometimes point to the support strategies wasting their time, being ineffective, or doubling up on existing tasks. Once the support structures leave the school, there is a tendency to revert to older practices. Direct material assistance is also provided to schools through the extra provision of resources that range from computers and technology to learner support materials, to extra chairs and desks, stationery, laboratories, libraries, and other instructional aids. Again there are some obvious findings that emerge from the literature:

* use existing textbooks and materials rather than completely designing new material as it is often lack of availability that is the problem, not the materials themselves;
* provide a variety of texts for reading;
* ensure resources come with careful training; and
* use workbooks and textbooks together (Mouton et al. p124-125).

It is the way existing resources are managed that is crucial, not so much the pouring of new resources into a school, unless the school is badly under resourced. Learner interventions consist of enrichment programmes that provide additional teaching and placement where talented poor learners are placed in highly functioning schools. Both of these strategies are successful when done properly, but there are issues with sustainability and going to scale.

been a sense that giving without expecting forms of accountability and extra demands results in a loss of effectiveness in the intervention. There has been increasing calls for accountability of schools, principals and teachers to drive school improvement from outside monitoring as well as provision of extra support. Research on the effectiveness of this strategy still needs to come forward.

Mouton’s review of school interventions in South Africa provides us with the most up to date and coherent account of research in the field, and it has been very useful in compiling the current account before you. Mouton’s review came out before the key publication *What makes schools effective? Report of South Africa’s National School effectiveness study.* Nor does the report deal with recent developments in the Gauteng Primary Language and Mathematics Strategy and specifically the Reading Catch Up Programme within it. These are key to understanding recent developments in strategies to improve performance in poorly performing schools in South Africa.

## 4.7. What makes schools effective? Report of South Africa’s National School Effectiveness Study

The National School Effectiveness Study (NSES) did a longitudinal study over 3 years of a cohort of around 8000 students in 268 schools. It started with Grade 3 learners in 2007 and ended with the same learners in Grade 5 in 2009. *What makes schools effective* provides a detailed account of the process and what was learnt from the study. A useful detailed summary of the findings has been provided by the authors (<http://www.jet.org.za/events/creating-effectives-schools-summary.pdf>) which this review found helpful and used below.

Rigourous testing of learners as they moved through the grades provided a clear snapshot of their performance through the years. Notable in the literacy tests was the consistent inability throughout the grades to work with inferential reasoning. Continuous failure in writing full sentences to interpret texts was evident – a very serious finding given that this skill underpins almost all work done at later levels. The study identified the slow pace of literacy development as the reason for this failure. Little work was done in lessons, and the work that was done was of low cognitive demand. Numeracy tests showed that learners struggled with questions involving English words, and that this problem remained over the three years. There was improvement in numeracy skills over the three years, especially with addition, but there was also a large amount of learners who did not show much progress (around 25%) resulting in a substantial minority of learners increasingly falling behind.

The NSES was able to track how literacy and numeracy scores improved in different types of schools. It was clear that historically black schools performed far worse than historically white schools, and the difference in performance increased through the grades. The historically white schools are not ‘white’ anymore, they serve the middle and upwardly mobile classes, but the reproduction of inequality continues unabated in South Africa. The mean socio economic status of all the children in a school is the most powerful predictor of educational performance, meaning that a massive amount of the potential of our youth is being lost.

The study was able to identify a number of other variables that play a significant role in learner performance. Over age learners performed far worse than their ‘peers’. Exposure to English through whatever means (even TV) resulted in higher achievement. Children reading at home on their own did better, as did children reading more often. The recommended intervention is clear ‘stimulate the use of English in the home and the broader community, and find ways of encouraging children to undertake individual reading’ (p7).

School level factors did not feature highly as key variables in learner performance. Only when school resources were well managed did the variables increase in importance, indicating the obvious but crucial truism that it is not so much the resources that count but how they are managed. All the proxies for time management as a variable showed impact, as did up to date inventories of textbooks and readers. A curious finding of the study was the lack of influence of curriculum planning in historically black schools, pointing to the need for far more and deeper interventions than any plan can give.

At the classroom level there were slightly different findings for literacy and numeracy, although both showed the importance of teacher assessment, teacher commitment and knowledge, and curriculum coverage. The quantity and quality of writing in workbooks was a key indicator of performance in literacy. In numeracy, sustained assessment had a stronger effect than in literacy. Other key indicators were frequency of homework, number of exercises completed in workbook and number of curriculum topics covered.

Within the domain of school leadership and management the study undertook ten case studies using a matched pair design that twinned schools with similar conditions but different performance levels. Although difficult to make generalisations, it was clear that better functioning schools had better systems in place to deal with the various complexities and demands of teaching, learning, and living at school. Two key variables were ‘setting and communicating learning goals’ and ‘time management. They work together with one engaging and bringing together all parties around teaching and learning, and the second ensuring that systems and practices are in place to ensure that it happens. It was also important to set in place clear regulatory conditions around behaviour, clearly define and distribute leadership and management roles, and get teachers working together around curriculum, pedagogy and assessment issues. Parental involvement and an effective SGB were not clearly linked to improved performance. However, a dysfunctional SGB and unhappy parents were negative indicators. It is clear that indicators such as these do not give the full picture of why there is dysfunctionality and unhappiness. The most important finding of this section of the study was that leadership and management needs to focus on those activities that directly impact on and improve learning. Three areas that do this are highlighted:

* Develop ability in the language of instruction as the medium of learning
* Use books as key carrier of knowledge
* Develop teachers’ subject knowledge and pedagogic knowledge

The study notes that in all 10 poorly functioning schools these were all poorly developed.

The NSES also threw some light on the intractable problem of languages in South African education. Because the NSES did the tests in English across all schools it was able to compare results with the same schools that did the Department of Education’s systemic evaluation tests in the home language of the learners. The results in literacy scores were significant, with the same students doing significantly better in the tests written in their home language. A similar but smaller difference was found in numeracy. This gives some indication that staying with home language for longer and enriching its use is valuable and productive.

In the domain of numeracy and mathematics startling findings appeared in terms of curriculum coverage that are crucial for any school intervention project to understand that is dealing with any school subject that has a hierarchical knowledge structure. Two tables from the summary report (p17) dramatically illustrate the issue:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Outcome (LO)** | **Grade 4** | | **Grade 5** | |
| **Number of topics** | **Mean % Coverage** | **Number of topics** | **Mean % Coverage** |
| Numbers, operations and relationships (LO1) | 32 | 35 | 34 | 38 |
| Patterns, functions and algebra (LO2) | 12 | 13 | 12 | 12 |
| Space and Shape (geometry) (LO3) | 15 | 23 | 14 | 18 |
| Measurement (LO4) | 14 | 17 | 17 | 15 |
| Data Handling (LO5) | 11 | 12 | 12 | 10 |
| **Total** | **84** | **24** | **89** | **24** |

The actual coverage of the mathematics curriculum was very low, and fell off dramatically in topics that were more difficult than counting and basic operations. This means that learners in the higher grades have no ability to do the mathematics demanded of them, even if time and effort is spent on designing an effective curriculum at that level, because they have not reached the level yet. Interventions have to locate themselves at the level of understanding of the learner, not the grade they are in, and the higher the grade, the more grades down the intervention will have to go.

|  |  |  |
| --- | --- | --- |
| **50% or more** | **Between 5% and 20%** | **5% or less** |
| Counting  Writing Numbers  Operations:  Addition,  Subtraction,  Multiplication | Ratio and rate  Relationship between multiplication and division  Checking solutions  Additive and multiplicative inverses  Commutative, associative and distributive properties  Shapes, especially 3 dimensional models | Patterns:  Completing, describing and  formulating numerical  patterns  All topics on data collection  and analysis |

This is the most dramatic of findings, even though we have known something like this was happening for a long time. In effect, it points to the impossibility of school interventions coming in at the grade the learner is in without providing massive catch up time and support for earlier levels of learning that simply are not there.

It also points to a serious lack of knowledge within the teaching core with more difficult and complex areas of their disciplinary knowledge. This points to a second dramatic point – that it does not matter what the pedagogy of the teacher is if she does not understand the topic at hand. Pedagogy works on top of subject understanding, not with it. It is a secondary zone. Lack of teacher knowledge was confirmed by the SACMEQ **teacher** tests where under 50% was achieved in the crucial areas of mathematical knowledge at grade 6 level – fractions, ratio’s, proportions, algebraic logic, rates of change. School interventions need to focus on this serious lack of knowledge in the teaching core as a priority and no amount of innovative pedagogic techniques can overcome this lack.

The nature of these findings point to a range of specific options around how to go about interventions within poorly performing schools.

* If teachers do not know the content they are supposed to teach then interventions need to script the lessons for them and at the same time provide opportunities for the teachers to learn the required knowledge.
* If learners do not have the fundamentals needed in reading, writing, numeracy, literacy, mathematics, English, science, then the interventions have to go back to the earlier states and ensure that the learners catch up to a point where lessons at their own grade make sense.
* If schools are dysfunctional because teachers don’t understand what they are teaching, and learners don’t understand what they are being taught, and a general malaise has set in where the bare minimum is being done, then strong and direct interventions are needed that interrupt the de facto incompetence and declare a new start.

This literature review ends the survey with an account of two interventions that work with these two different strategies: the Reading Catch-Up Programme within the Gauteng Primary Language and Mathematics Strategy (GPLMS); and a still developing project of Jill Adler (National Research Foundation Chair in Mathematics Education – Wits University) that uses a community of practice model.

## 4.8 The Reading Catch Up Programme

The theory of change behind the Reading Catch Up Programme has already been sketched out earlier in the review, but it should be clearer now why it is such a crucial intervention strategy to highlight as it exemplifies many of the conclusions the review is pushing towards. This account works closely from an unpublished ‘Proposal for a randomised control trial of the reading catch-up programme’ kindly provided by the author, Braam Fleisch.

The programme consists of three elements – scripted lesson plans, high quality learning materials and coaching for teachers in the process of teaching the intervention. Each week is ritualised into a predictable sequence, with assessment always on Friday. The scripted lessons went back to earlier grades to allow learners the chance to catch up on the skills and knowledge they had missed. It’s a genuine catch up programme. No apologies are made for taking the learners back to far simpler skills supposedly already learnt. The teachers learn to interrupt their existing pedagogic practices by repeating the new rituals week after week. This simplification allows space for teachers to make sense of the changes. They also learn new ways to teach reading they were not familiar with by following the scripted lessons and learning from the coaches who were on hand to help them.

What also makes this intervention highly impressive is the way it is using randomised control trials to establish effectiveness. It will clearly become a reference point for literature reviews on school interventions in the future. As important as the intervention is, it can be predicted to encounter specific problems. Firstly the expectation that teachers keep to a strict pace that is driven by assessment will struggle to entrench itself in practice once the project ends. Secondly the designed materials will also struggle to find a continuous home in the schools once the intervention ends as the teachers have no ownership or investment in the materials and will revert to what they already are familiar with. Thirdly, the coaching practices will struggle due to the difficulty of finding good coaches who genuinely buy into the project. Fourth, socio-political-cultural forces will subvert processes within the intervention. Community of practice models that take a far slower and more internal approach to interventions address many of the above concerns, but have different problems attached.

## 4.9 Community of practice models that work with an internal building up of instruction

As impressive as the Reading Catch Up Programme is, it does not focus on how teachers can take ownership of their practice and become independent professionals who take up the task of improving their own practice. Professor Jill Adler is currently engaged in a project that uses the principles of Lesson Study as a basis for getting teachers to take ownership of their own learning. Lesson study works by getting a community of teachers together to focus on one lesson and work on it until the lesson is worthwhile and works in practice. The lesson then becomes a part of the community of teachers’ repertoire, and another lesson is worked on, slowly building up a coherent core of lessons that work but at the same time getting the participating teachers to learn how to design good lessons, rather than becoming dependant on hand-outs. Unfortunately this project is still in the inception phase so there is no literature on it, but this review mentions it as it provides a useful model for school intervention projects to think of that is different to the current building consensus that takes the Braam Fleisch line. Rather than provide already scripted lessons, Adler works on the teachers building a scripted lesson together and developing the skills to become effective teachers through their own participation in a community of practice that is guided by experts.

This approach marks a very different way of working with teachers that builds their competence from internal practices within a community rather than an external intervention. At a broader level, this community of practice idea has been used to drive instructional change across wider and wider communities as more and more teachers become involved in the practices. The instructional practices become a social movement, almost like a church, and spread through internal conversion to its functioning. This gives the instructional practices an internal energy and drive that external interventions find hard to develop. It’s a radically different model to current intervention strategies in South Africa, but the review ends with a brief account of how social movements work to mark a functioning alternative to the building consensus in South Africa that is pushing for strong external interventions using strict pacing and assessment criteria.

Ricon-Gallardo and Elmore (2012) Transforming teaching and learning through social movement in Mexican public middle schools. Harvard Education Review 82, 4, p471- 490 point to **social movements** as providing key insights into why large scale reforms struggle to keep going once the intervention impetus is removed. The Learning Community Project in Mexico has evolved from a small intervention to a national strategy across 9000 schools that is aimed at transforming teaching and learning. By using **social movement theory** it shows how to use internally powerful transformation mechanisms that work on a social level to transform teaching and learning in the classroom. Learning Community Project picks up on key elements of social movements, how it mobilises collective motivations and structures to change practice by shifting from a hierarchical intervention that works from the top down to a more horizontal practice that gets the leaders of the interventions to work hand in hand with the teachers and learners. There is a history of such practices in South Africa, but it has not manifested strongly within the educational intervention literature, and will increasingly struggle to do so as evaluation practices become more scientific and focussed on measurables. Nevertheless, it provides a key answer to the continual struggle within intervention projects to sustain their gains once the intervention ends.

# 5. Short term systemic interventions that turnaround schools – a practice guide for Fresh Start Schools

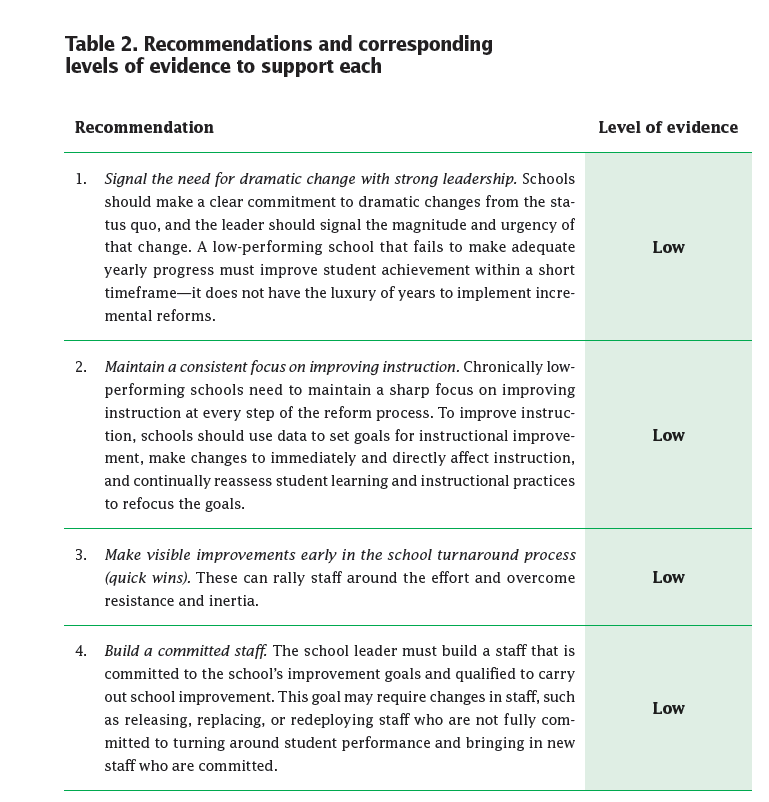
The literature review above provides a basic framework to understand the various distinctions that need to be made when attempting to improve learning in low performing schools. What it does not do is provide a guide to the specific factors needed to turn around poorly functioning schools that are close to dysfunctionality. This entails a short term systemic intervention that is dramatic, urgent, and simple. It is not a long term systematic intervention. *Getting these two types of interventions confused can result in a turnaround strategy getting buried under the complexity of systemic long term change.* A key qualification to make at this point is that **even with the best turnaround strategies in the world there is a high failure rate**. Dysfunctional schools are mostly not functional for single or minor reasons. *Often the dysfunctionality runs deep into the core of how the school, its staff and learners function. Even in business circles, where one can hire and fire and latitude to change is far higher than in the schooling systems there is still a high rate of failure with turnaround strategies.* **There must be a built in recognition of the possibility of failure into the project design, otherwise it will collapse under its own impossible expectations.**

**Secondly the turnaround does not result in excellence, it results in basic functioning**. To expect anything more is to again set a project up for failure. Turnaround literature in the USA points to four basic interventions that have some record of success if done together. These have usefully been systematised into a practice guide that is useful to use when looking at the South African version of turnaround strategies in the Fresh Start Schools Programme (Herman, Dawson, Dee, Greene, Maynard, Redding, and Darwin (2008).

The guide works with four recommendations that have been shown to have some success with turnaround interventions:

* signal dramatic change;
* focus on instruction;
* get quick wins;
* build a committed staff.

The low level of evidence points to the lack of randomised control group studies within turnaround literature.



It uses these four recommendations to set up a clear checklist of how to go about designing and implementing a turnaround strategy.

**Recommendation 1: Signal the need for dramatic change with strong leadership.**

A change in leadership practices is key to a turnaround strategy. Often it is simplest to remove a dysfunctional principle but this is difficult under current South African labour laws. If it is not possible to remove a dysfunctional leader then the leadership team must clearly indicate to the school that practices are going to change. The leadership structure must take responsibility of instructional management and become visible within the organisation of the teaching and learning activities of the school. Public announcement of the anticipated changes and new actions must be given so that expectation and engagement with change is enabled.

**Recommendation 2: Focus on instruction**

* Data on student performance must be gathered and gaps identified that need addressing
* Teachers must become involved in this process and actively look for solutions to problems and gaps in learner understanding
* Specific instructional interventions must be given priority that directly address lack of knowledge in teachers and learners
* Targeted professional development of teachers must be implemented that gets at their specific weakness in subject area knowledge and pedagogic practice
* Teachers must become involved in curriculum review where weaknesses and gaps are identified and addressed
* Progress in learning must be monitored and used for feedback purposes to adapt and learn as turnaround intervention progresses

**Recommendation 3: Quick Wins**

* Identify goals that provide visible improvement quickly
* Ensure that the goal can be accomplished with current school resources
* Key quick wins can be: improving the use of time; improving discipline, improving access to resources

**Recommendation 4: Build committed staff**

Given that current staff members who are ineffective or incorrectly placed are hard to move, this is a very difficult recommendation to carry out in practice. Often it is because staff are defensive about their own inadequacies that results in sabotage, passive aggressive behaviour, non or minimal compliance with the turn around strategy. Staff mobilisation behind a cause that gets learners, community, parents, teachers and leadership on the same page can help in this regard, as can successful quick wins and targeted professional improvement that results in renewed confidence and interest.

# 6. Application of insights of the literature review to the Fresh Start School’s Programme (FSSP)

The FSSP is a turnaround programme for the worst performing schools in selected districts that show some potential for change. The first point to note is that turnaround strategies have a high failure rate due to the enormity of the task and the intractability of the systemic problems, but with this qualification firmly in place, what do the insights of this literature have to say about the FSSP?

The concept of a Fresh start school is defined as ‘an initiative that is established to provide underperforming schools with a new opportunity or a ‘fresh start’ to attain more positive learner outcomes. It is a school turnaround or change process which builds commitment from within to recreate, nurture and sustain conditions for success. It is a process of empowering schools to take responsibility for and mange their own development and define and embrace new pathways for progress and enhanced performance. The Fresh Start programme is a customised and properly tailored educational intervention that seeks to move a designated school from under-performance to excellence’. National Education Collaborative Trust: Fresh Start School Programme (2014).

The first issue with the concept is the *overload of expectations in the shift from ‘under-performance to excellence’*. The Change theories reviewed in this literature review point to the need for a long term point of view that accepts slow rates of change that go through stages. The initial shifts might be large through quick wins, but these quickly taper off once foundational logjams are cleared. A dysfunctional school can only hope, in almost all scenarios, to become a barely functioning school, certainly not ‘excellence’ (p3), unless a long term view stretching over decades is used. The programme must accept both a high possibility of failure and small improvements in performance that are hard won and difficult to sustain.

Secondly, the nature of a turnaround strategy is that it involves high levels of external intervention and pressure that creates elevated anxiety responses and pretence compliance. The intervention might be dramatic and focussed, but this should not mean that the expectation is that dramatic results should follow. The Fresh Start School Guide document lists the following aims of the FSSP (p3):

* Produce significant gains in learner achievement
* Create basic conditions to facilitate transformation towards high performance and sustained excellent
* Empower schools to embrace, manage and sustain development through standards which guide self improvement and promote self reliance
* Provide schools with tools to measure their ongoing development and performance so that they can compare themselves to their counterparts across the country

This is an over optimistic set of aims that sets up the FSSP for failure.

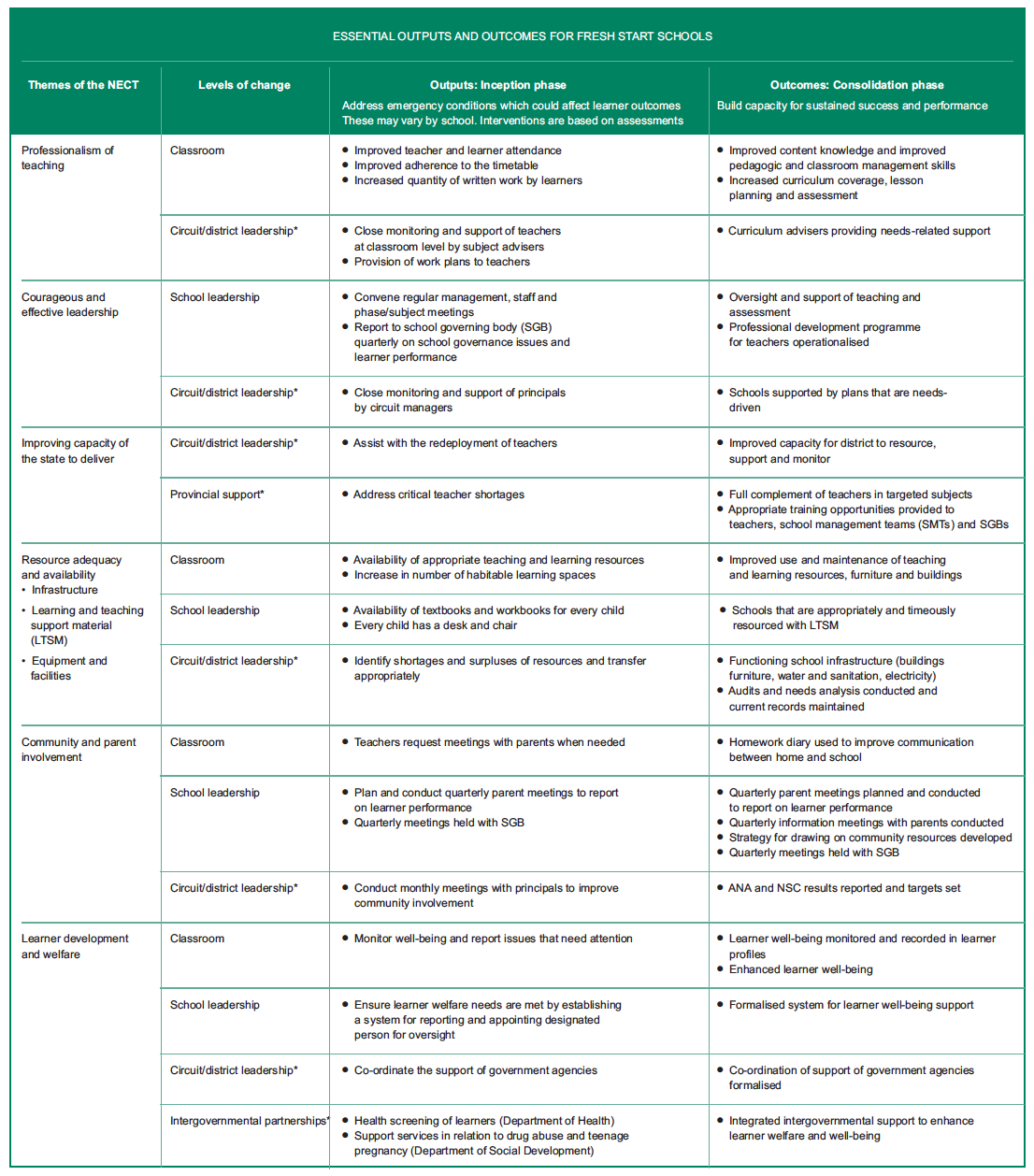
There will only be minimal gains in learner achievement in most cases, especially in hierarchically ordered subjects that demand enormous amounts of prior knowledge. The best the FSSP can aim to do is address the backlog in learning, not performance at the current grade. It has to accept that learners are a number of years behind in their subject areas and that trying to improve their performance in the current year’s curriculum demands assumes that prior knowledge is in place. It is not. Learners need to be taught basic skills and knowledge that goes back to where their understanding actually is, not what their current grade says it should be. The aim of a fresh start programme should not be to produce significant gains in learner achievement but to address the backlog in understanding and skills.

The FSSP cannot aim at creating basic conditions for sustained excellence. It has to aim at *basic conditions for basic elementary functioning shifting to moderate functioning.* It takes decades of sustained systemic interventions to create the conditions for excellence in a schooling system, something the fresh start programme has no ability to do.

To expect schools that are aiming at becoming minimally functional to develop and sustain an interest in comparing their improvements to other schools in the country is to firstly assume notable improvements that in all likelihood will not manifest, or if it does, will not sustain itself.

To expect turnaround schools to embrace new pathways for progress is to set the bar far too high. Rather the aim should be to get these schools to one level above dysfunctionality – what Beeby refers to as a *shift to basic formalist schools*, McKinsey and Company *as the shift from poor to fair schools*, and Hopkins as the *shift from poor to moderately functioning* schools. As in the first point, proper realistic targets for turnaround schools must be set that *aim at only one level up, not from ‘zero to hero’.* It is apparent throughout the official report on the FSSP that excellence is expected by the end of the intervention. The three phases of the project go from *inception* where emergency conditions are identified and dealt with through quick wins; the *establishment* phase where foundations for a fully functional school are put in place; and then the *consolidation phase* that builds the school towards excellence. The end point of the three phases should be a minimally effective school shifting towards moderate success, no more.

The outputs and outcomes of the inception and consolidation phase are clearly listed for fresh start schools as can be seen below (p9).

A key footnote at the bottom of this table states that ‘it is important to note that change in the FSSP occurs mainly at classroom level and that the focus is on infrastructure and curricular support.’ This is a vital point, but it must be noted, when looking at the list as a whole, that there is a clear focus on instruction as the main driver of the FSSP both at the inception phase and the consolidation phase. However, the essential outputs when taken as a whole, will probably result in overload for schools that are dysfunctional, so it must be expected that many of the outputs will not be reached. Within this set of outputs there should be a ranking order in which some of the outputs are non-negotiable, with others having more flexibility. It is understandable that an intervention needs to show outputs to justify the monetary and time investment, but with every additional output comes less energy and focus on other outputs. Intergovernmental partnerships, for example, are very difficult to sustain and are out of the zone of control of the school system, so its achievement needs to be flexible.

These criticisms aside, it is notable that the FSSP takes seriously the need to turnaround dysfunctional schools and recognises that interventions at this level are different to those working with moderately functioning schools. *The flexibility given to the change agents to diagnose logjams and difficulties in individual schools is highly innovative at a project level that has set outputs to achieve*. The focus on instruction is clear, as is the need to address specific problems directly impacting on instruction. **The FSSP is very close to a best practice model for turnaround schools so long as it narrows its expectations and builds in a failure possibility that does not strip the model of its bite.**

# 7. Conclusion

It is clear from the above review of International and South African reports on school interventions that we have become clearer on what the various variables are that impact on school effectiveness all the way from district to learner, from foundation phase to FET, from literacy to mathematics, from training interventions to support mechanisms. The issue with almost all of the reports and studies is that they cannot make causal claims as to what is actually creating the effect, only what areas tend to assist in dealing with poor education and learning. Almost all the reviewed items in this literature review would be ranked as of low causal worth, given the lack of scientific rigour of the studies. This is being addressed within current project designs, but skills in this area are very hard to find and scarce on the ground. Serious amounts of training of supposed ‘experts’ will be needed to develop their skills around randomised control trials and other techniques to make more rigourous causal claims.

It is also clear that there has been increasing recognition that targeted interventions at the level of instruction provide the most intense forms of educational change. There is no surprise here, as instruction is right at the chalk face of teaching and learning. Braam Fleisch points to recent research by Cohen (2011) on instructional infrastructure being coherent. Different facets of instruction ranging from teacher professional development to curriculum frameworks and learner materials need to speak to each other in systematic ways. To introduce a new text on top of the existing curriculum that teachers are not familiar with is risky. The basic insight is that if there is alignment across the various instructional processes there will be less time wastage and more familiarity with what is happening. Cohen goes on to argue that general alignment is not enough, specific and prescriptive accounts of the curriculum and how it translates into learner materials is needed to ensure alignment (Fleisch 2014 The instructional turn and change theory Draft version kindly provided by author). Fleisch goes on to detail what key elements of the instructional architecture are that ensure a focus on instructional practice, coherence and prescriptiveness.

* *Detailed lesson plans* that are tightly scripted provide clear sequencing, guidance to new instructional practices, and aligned assessment tasks.
* *High quality learning materials* are needed that go beyond departmental workbooks (useful as these are).
* Graded readers, wall graphics, rich library resources all assist a tightly specified lesson plans.
* Instructional coaching ensure that novice teachers learn from experts and are able to implement the lesson plans and use the learning materials. Coaches model new practice, respond to the teachers attempts to use the new practices, mediate emotional issues, and encourage the teacher to reach independence and participate in peer teaching communities (Fleisch 2014).

Even with an aligned and specified instructional infrastructure that has specified lesson plans, good learning materials, and effective coaches, there is still a massive risk of failure. **This is simply because most learners in South Africa are not at the level of learning their grade requires**. It does not matter how well structured the intervention is if it does not identify the level of understanding learners are actually at. Often this is a number of grades below their official grade. To get a structured intervention right, the lessons have to be at a level the learners can understand and work with, rather than the official level demanded by the curriculum of the grade.

Finally, the consequences of scripted interventions can be severe on teacher professional practice as they become used to being mere carriers of the script. Coaches of teachers are needed to firstly ensure that teachers actually learn how to work with the scripted lessons, but secondly that the teachers begin to take ownership of their own practices with their peers and develop communities that take teaching and learning seriously. The NECT has a clear statement that it is working towards teachers taking internal ownership of the processes of improvement. However, the nature of external interventions is that they force themselves onto an already existing situation and make changes. District officials, principals, and teachers might all express enthusiasm about the project, but this is often a forced level of emotional labour where they have to be enthusiastic because the intervention demands it. Once the intervention stops and the need for this emotional labour goes away, many teachers and principals breathe a sigh of relief and return to their previous ways of doing things. Ways of developing internal conversion processes where communities of practice spring up that are committed and faithful to the overall project because they are all participants in a process that works from the ground up needs to be held up as an alternative to external interventions, if only so that we recognise another way of working towards massive and sustained change in the performance of poorly functioning schools.

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Rhim, L. M., & Redding, S. (Eds). (2014) The state role in turnaround: emerging best practices. San Francisco, CA: WestEd.

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Van Merriënboer, J.J.G., Kirschner, P.A., and Kester, L. (2003). “Taking the load off a learner’s mind: Instructional Design for Complex Learning”. *Education Psychologist*, 38 (1), pp. 5-13.

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Verspoor, A.M. and Leno, J. L. (1986). *Improving Teaching: a key to successful educational change. Education and Training*. Department Report No EDT50. Washington DC, The World Bank

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# Appendix 1: Table of articles published on school interventions in South Africa (p28-29 ERA Final SDP Review Report)

|  |  |  |  |
| --- | --- | --- | --- |
| **Author** | **Year** | **Title** | **Source** |
| Bridgemohan, R., Van Wyk, N., & van Staden, C. | 2005 | Home-school communication in the early childhood development phase | Education Vol. 126 No. 1 |
| de Wet, C. | 2002 | Factors influencing the choice of English as a language of learning and teaching (LoLT) - a South African perspective | South African Journal of Education Copyright © 2002 EASA Vol 22(2) 119 – 124 |
| Howie, S., Venter, E., & van Staden, S. | 2008 | The effect of multilingual policies on performance and progression in reading literacy in South African primary schools | Educational Research and Evaluation: An International Journal on Theory and Practice, 14:6, 551-560 |
| Julie, C., & Mbekwa, M. | 2005 | What would Grade 8 to 10 learners prefer as context for mathematical literacy? The case of Masilakele Secondary School | Perspectives in Education, Volume 23(3), September 2005 31 |
| Kamper, G. | 2008 | A profile of effective leadership in some South African high-poverty schools | South African Journal of Education Copyright © 2008 EASA Vol 28:1–18 |
| Kazime, M., Pillay, V., & Adler, J. | 2008 | Mathematics for teaching: observations from two case studies | South African Journal of Education Copyright © 2008 EASA Vol 28:283-299 |
| Kruger, A. | 2003 | Instructional leadership: The impact on the culture of teaching and learning in two effective secondary schools | South African Journal of Education, Copyright © 2003 EASA Vol 23(3) 206 – 211 |
| Legotio, M., Maaga, M., & Sebego, M. | 2002 | Perceptions of stakeholders on cases of poor performance in Grade 12 learners in a province in South Africa | South African Journal of Education Copyright © 2002 EASA Vol 22(2) 113 – 118 |
| Makina, A. | 2010 | The role of visualisation in developing critical thinking in mathematics | Perspectives in Education, Volume 28(1), March 2010 |
| Maree, K., Aldrous, C., Hattingh, A., Swanepoel, A., & van der Linde, M. | 2006 | Predictors of learner performance in mathematics and science according to a large-scale study in Mpumalanga | South African Journal of Education Copyright © 2006 EASA Vol 26(2)229–252 |
| Matjila, D., & Pretorius, E. | 2004 | Bilingual and Biliterate? An exploratory study of grade 8 reading skills in Setswana and English | Per Linguam 2004 20(1):1-21 http://dx.doi.org/10.5785/20-1-77 |
| Mestry, R., Hendricks, I., & Bisschoff, T. | 2009 | Perceptions of teachers on the benefits of teacher development programmes in one province in South Africa | South African Journal of Education, Copyright © 2009 EASA, Vol 29:475-490 |
| Mji, A., & Makgato, M. | 2006 | Factors associated with high school learners' poor performance: a spotlight on mathematics and physical science | South African Journal of Education Copyright © 2006 EASA Vol 26(2)253–266 |
| Morrow, N., Jordaan, H., & Fridjhon, P. | 2005 | The effects of educational context on the understanding of linguistic concepts in English and isiZulu by Grade 7 learners | South African Journal of Education Copyright © 2005 EASA Vol 25(3)164–169 |
| Mpungose, J. | 2010 | Constructing principals' professional identities through life stories: an exploration | South African Journal of Education Copyright © 2010 EASA Vol 30:527-537 |
| Nel, N., & Muller, H. | 2010 | The impact of teachers' limited English proficiency on English second language learners in South African schools. | South African Journal of Education Copyright © 2010 EASA Vol 30:635-650 |
| Ngcobo, T., & Tikly, L. | 2008 | Key Dimensions of Effective Leadership for Change: A Focus on Township and Rural Schools in South Africa | CCEAM Conference\_http://www.emasa.co.za/files/full/Dr.Thandi.Ngcobo.pdf |
| Ngidi, D., & Qwabe, J. | 2006 | The partnership of parents, educators and principals in creating a culture of teaching and learning in schools | South African Journal of Education, Copyright © 2006 EASA, Vol 26(4)529–539 |
| Niemann, R., & Kotze, T. | 2006 | The relationship between leadership practices and organisational culture: an education management perspective | South African Journal of Education Copyright © 2006 EASA Vol 26(4)609–624 |
| Onwu, G., & Stoffels, N. | 2005 | Instructional functions in large, under-resourced science classrooms: Perspectives of South African teachers | Perspectives in Education, Volume 23(3), September 2005 |
| Pretorius, E., & Ribbens, R. | 2005 | Reading in a disadvantaged high school: issues of accomplishment, assessment and accountability | South African Journal of Education Copyright © 2005 EASA Vol 25(3)139–147 |
| Roberts, J., & Roach, J. | 2006 | Leadership Styles and Practices in Effective Schools - Matthew Goniwe School of Leadership & Governance | Zenex |
| SAIDE | 2010 | Grade R Project: Final report | Zenex foundation report |
| Setati, M. | 2008 | Access to mathematical versus access to the language of power: the struggle in multilingual mathematics classrooms | South African Journal of Education Copyright © 2008 EASA Vol 28:103–116 |
| Simkins, C. | n.d. | School Quality | University of Witwatersrand |
| Simkins, C., & Perreira, C. | n.d. | Exploratory Data Analysis Using The Baseline Study Of The Khanyisa Education Support Programme | http://www.jet.org.za/publications/research/SimkinsPerreira.pdf |
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| Smith, M. | 2011 | Which in- and out-of-school factors explain variations in learning across different socio-economic groups? Findings from South Africa | Comparative Education; Vol. 47, No. 1, February 2011, 79–102 |

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| Stears, M., & Gopal, N., | 2010 | Exploring alternative assessment strategies in science classrooms | South African Journal of Education Copyright © 2010 EASA Vol 30:591-604 |
| Stears, M., & Malcolm, C. | 2005 | Learners and teachers as co-designers of relevant science curricula | Perspectives in Education, Volume 23(3), September 2005 |
| Taylor, N. | 2009 | The state of South African schools Part 1: Time and the regulation of consciousness | Journal of Education, No. 46, 2009 |
| Thakathi, T., & Lemmer, E. | 2002 | Community strategies of women in educational management | South African Journal of Education Copyright © 2002 EASA Vol 22(3) 193 – 197 |
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| Van der Berg, S. | 2008 | How effective are poor schools? Poverty and educational outcomes in South Africa | Studies in Educational Evaluation 34 (2008) 145–154 |
| van der Mescht, H., & Tyala, Z. | 2008 | School principals' perceptions of team management: a multiple case-study of secondary schools | South African Journal of Education Copyright © 2008 EASA Vol 28:221–239 |
| van der Walt, M., & Maree, K. | 2007 | Do mathematics learning facilitators implement metacognitive strategies? | South African Journal of Education Copyright © 2007 EASA Vol 27(2)223–241 |
| van Rooyen, D., & Jordaan, H. | 2009 | An aspect of language for academic purposes in secondary education: complex sentence comprehension by learners in an integrated Gauteng school | South African Journal of Education Copyright © 2009 EASA Vol 29:271-287 |
| van Staden, S., & Howie, S. | 2012 | Reading between the lines: contributing factors that affect Grade 5 student reading performance as measured across South Africa's 11 languages | Educational Research and Evaluation: An International Journal on Theory and Practice, 18:1, 85-98 |
| van Wyk, N. | 2004 | School governing bodies: the experience of South African educators | South African Journal of Education Copyright © 2004 EASA Vol 24(1) 49 – 54 |
| Vithal, R. | 2008 | An analytical framework for mathematics teacher education from a critical perspective | Perspectives in Education, Volume 26(2), June 2008 |
| Winburg, C., & Botes, G. | 2005 | Building school-based reading practices | South African Journal of Education Copyright © 2005 EASA Vol 25(2) 95–99 |
| Xaba, M. | 2006 | The difficulties of school development planning | South African Journal of Education Copyright © 2006 EASA Vol 26(1)15–26 |
| Zimmerman, L., Howie, S., & Smit, B. | 2011 | Time to go back to the drawing board: organisation of primary school reading development in South Africa | Educational Research and Evaluation: An International Journal on Theory and Practice, 17:4, 215-232 |

# Appendix 2: Intervention evaluations within South African Education (p38-39 ERA Final SDP Review Report)

|  | Author | Year | | Title | | Intervention name | | Source | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Balfour | 2005 | | Transforming a language curriculum: Shifting pedagogy for meaningful learning | | Syllabus for Explicit English (SEE) project | | Perspectives in Education, Volume 23(1), March 2005 | |
| 2 | Botes & Mji | 2010 | Language diversity in the mathematics classroom: does a learner companion make a difference | | The learner companion | | South African Journal of Education, Copyright © 2010 EASA, Vol 30:123-138 | |
| 3 | Bush et al | 2009 | | The Zenex Ace: School Leadership Research. Final Report: Executive Summary | | The Zenex Ace | | Zenex foundation report | |
| 4 | Bush, Joubert & Moloi | 2006 | | Matthew Goniwe School Of Leadership And Governance - Mid-Term Evaluation - Interim Report: July 2006 | | Matthew Goniwe School Of Leadership And Governance (MGSLG) | | Zenex foundation report | |
| 5 | Bush, Kiddungu & Moorosi | 2011 | | Preparing new principals in South Africa: the ACE: School Leadership Programme | | Advanced Certificate in Education: School Leadership | | South African Journal of Education, Copyright © 2011 EASA, Vol 31:31-43 | |
| 6 | de Chaisemartin | 2010 | | CTLI Evaluation 2010 Report | | Cape Teaching and Leadership Institute (CTLI) | | MEPP Zenex ISP | |
| 7 | du Toit | n.d. | | The effect of ICT curriculum support on the measured skills levels of learners of two sub-projects of the Khanya Project | | Khanya Project | | N.A. | |
| 8 | Dye, Horn, Naidoo, Weber & Wolf | 2003 | | Evaluation Of The District Development Support Project Usaid/South Africa | | District Development Support Program (DDSP) - including READ, LINK, MSTP | | COUNT Zenex ISP | |
| 9 | Feedback | 2008 | | Maths Centre /ELET Educator Training Initiative: Limpopo Evaluation | | Maths Centre | | Zenex foundation report | |
| 10 | Fleisch | 2006 | | Bureaucratic accountability in the Education Action Zones of South Africa | | The Education Action Zone programme | | South African Journal of Education Copyright © 2006 EASA Vol 26(3)369–382 | |
| 11 | Fleisch, Taylor, du Toit, and Sapire | 2010 | | Evaluation of Back to Basics mathematics workbooks: a randomised control trial of the Primary Mathematics Research Project | | Primary Mathematics Research Project PMRP (PM) - Back to Basics! Getting Learning Outcome One Right Intermediate Phase | | South African Journal of Education, Vol 31:488-504 | |
| 12 | Hattingh, Rogan, Aldous, Howie & Venter | 2005 | | Assessing the attainment of learner outcomes in Natural Science of the New South African Curriculum | | The Mpumalanga Secondary Science Initiative (MSSI) | | African Journal of Research in SMT Education, Volume 9(1), 2005, pp. 13-24 | |

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| --- | --- | --- | --- | --- | --- |
| 13 | Hofmeyer | 2008 | Getting The Talented Poor To Good Schools: The ISASA Mathematics And English Programme | The ISASA Mathematics and English (M&E) Programme | ISASA |
| 14 | JET | 2006 | Evaluation Of The Zenex Funded Read Mother Tongue Literacy Programme | READ Literacy Project | Zenex foundation report |
| 15 | JET | 2007 | Summative Impact Report: North-West Province | Zenex Foundation Educator Support Programme of the Mindset Network Project | Zenex foundation report |
| 16 | Kanjee & Prinsloo | 2005 | Improving Learning in South African Schools: Executive Summative Report to the Business Trust on the Quality Learning Project (QLP) | Quality Learning Project | Zenex foundation report |
| 17 | King | n.d. | Assessing the effect of an instructional intervention on geometric understanding of learners in South African primary schools | Instructional intervention on Geometrics | http://www.aare.edu.au/01pap/kin01220.htm |
| 18 | Lessing & de Witt | 2007 | The value of continuous professional development: teachers' perspectives | No name: Follow up CPD workshop: Support for learners with learning difficulties in the inclusive Classroom workshop | South African Journal of Education, Copyright © 2007 EASA, Vol 27(1)53–67 |
| 19 | Louw, Muller & Tredoux | 2008 | Time-on-task, technology and mathematics achievement | Khanya Project | Evaluation and Program Planning 31 (2008) 41–50 |
| 20 | Malcolm, Kowlas, Stears & Gopal | 2004 | Evaluation of the Western Cape Primary Science Programme (PSP): Stage 3, 2003 | Primary Science Programme (PSP) | Zenex foundation report |
| 21 | Marais, Smith & Duveskog | 2007 | TekkiKids: Technology clubs for children | TekkiKids | researchspace.csir.co.za/dspace/bitstream/.../1/Duveskog\_2007.pd |
| 22 | Mestry & Singh | 2007 | Continuing professional development for principals: A South African perspective | Advanced Certificate in Education | South African Journal of Education, Copyright © 2007 EASA, Vol 27(3)477–490 |
| 23 | MGSLG | 2008 | Evaluation Report on Governance Training conducted by Matthew Goniwe School of Leadership and Governance funded by the Gauteng Department of Education in the 2006/2007 and 2007/2008 financial years | Matthew Goniwe School of Leadership and Governance (MGSLG) | Zenex |
| 24 | Msomi & Mkhize | 2005 | THE EVALUATION Of THE JULA CARNERGIE PROJECT | THE JULA CARNERGIE PROJECT | http://www.casme.org.za/docs/The%20Jula%20Carnegie%20Project%203.pdf |

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| --- | --- | --- | --- | --- | --- | --- | --- |
| 25 | Nel & Theron | 2008 | Critique of a language enrichment programme for Grade 4 ESL learners with limited English proficiency: a pilot study | | Story-based Language Enrichment Programme | South African Journal of Education | |
| 26 | Ngidi | 2005 | Evaluation of the effectiveness of the competences of the NPDE programme | | National Professional Diploma in Education | South African Journal of Education | |
| 27 | Niemann et al | 2002 | Management development in education: fact or fiction - some preliminary findings | | Assessment Centre for Educational Leaders | South African Journal of Education, Copyright © 2002 EASA, Vol 22(2) 132 – 135 | |
| 28 | Nieuwoudt, Nieuwoudt & Monteith | 2007 | Influence of a video class system on learners’ study and learning strategies and their achievement in mathematics. | | The Video Class System (VCS) | African Journal of Research in Mathematics, Science and Technology Education, 11(1), 29−35. Available from | |
| 29 | Ono & Ferreira | 2010 | A case study of continuing teacher professional development through lesson study in South Africa | | The Mpumalanga Secondary Science Initiative (MSSI) | South African Journal of Education Copyright © 2010 EASA Vol 30:59-74 | |
| 30 | Padayachee, Boshoff, Olivier & Harding | 2011 | A blended learning Grade 12 intervention using DVD technology to enhance the teaching and learning of mathematics | | The Mathematics Incubator School Project (ISP) | Pythagoras, 32(1), Art. #24, 8 pages. | |
| 31 | Pietersen | 2006 | Evaluation of a number skills development programme | | Shuttleworth/Rotary Number Skills Development Programme | South African Journal of Education, Copyright © 2006 EASA, Vol 26(3)413–426 | |
| 32 | Pretorius & Mampuru | 2007 | Playing football without a ball: language, reading and academic performance in a high-poverty school | | Reading intervention | Journal of Research in Reading, ISSN 0141-0423, Volume 30, Issue 1, 2007, pp 38–58 | |
| 33 | Prew | 2007 | Successful principals: why some principals succeed and other struggle when faced with innovation and transformation | | Soshanguve School Development Project | South African Journal of Education Copyright © 2007 EASA Vol 27(3)447–462 | |
| 34 | Prinsloo | 2009 | Extra classes, extra marks? Report on the PlusTime Project | | Plus Time | Human Sciences Research Council | |
| 35 | Prinsloo & Stein | 2004 | What's inside the box? Children's early encounters with literacy in South African classrooms | | Children's Early Learning Literacy Project | New Perspectives in Education | |
| 36 | Prinsloo, Netshitangani & Ntabanyane | 2008 | The Mveledzandivho (Knowledge Creation) Final evaluation: Summary report | | The Mveledzandivho Project | http://www.hsrc.ac.za/Research\_Publication-20878.phtml | |
| 37 | QPiE\_ISASA | 2008 | ISASA M&E project: Implementation evaluation report | | ISASA M&E programme | Zenex project report | |
| 38 | QPiE\_RUMEP | 2010 | RUMEP Bed Project: Summative evaluation report | | RUMEP | Zenex foundation report | |
| 39 | RIEP | 2008 | Report On The Impact Study In The Eastern Cape And Kwazulu-Natal On Literacy And Numeracy Of Grade 4 | | Maths Centre: Teacher upgrading | Zenex foundation report | |
| 40 | Rodseth | 2002 | Developing main language instruction. Developments in the Molteno Project - Literacy, language and educator development | | Molteno's Breakthrough to Literacy Project | Perspectives in Education, Volume 20 Number 1 2002 | |
| 41 | SAIDE\_COUNT | 2007 | Evaluation of COUNT Family Maths School Pilot Project | | Family Maths Programme | ISP\_Count | |
| 42 | Schaffer | 2011 | Case Studies for web | | PSP teacher development | ISP\_Marlene Rossouw | |
| 43 | Schaffer & Hobden | 2009 | Zenex Inkanyezi Project: Implementation evaluation | | Inkanyezi Project | Zenex project report: Schaffer and Associates and Quality Projects in Education | |
| 44 | Schaffer & Watters | 2008 | Summative Evaluation of the LEAP Science and Maths School | | LEAP | Zenex foundation report | |
| 45 | Schaffer & Watters | 2010 | Barriers And Bridges To Learner Understanding And Performance In Grade 11 English, Maths And Science | | Zenex-Dinaledi English Language Teaching Training Programme | Zenex foundation report | |
| 46 | Schaffer et al | 2009 | Impact Evaluation Of The Psp Cluster Project: 2007 To 2009 | | PSP Cluster programme | ISP\_Marlene Rossouw | |
| 47 | Schollar | 2005 | Final Report: the evaluation of the Learning for Living project, a project of the Business Trust and the READ organisation 2000-2004 | | The READ/Business Trust Learning for Living Project (LFL) | JET | |
| 48 | Schollar | 2006 | Case Study The Quality Of Education In Twelve Khanyisa Schools | | The Khanyisa School Transformation Programme | ESA | |
| 49 | Schollar | 2008 | Integrated Education Program (Iep) Report: Review Of The Impact Of The Integrated Education Program (IEP) | | The Integrated Education Program (IEP) | RTI International | |
| 50 | Schollar | 2011 | Baseline Study Of The Evaluation Of The Primary Mathematics Research Project Under The Management Of The Limpopo Department Of Education In Vhembe District | | The Primary Mathematics Research Project (PMRP) | Zenex foundation report | |
| 51 | Summers | 2008 | Maths Centre/Zenex Foundation Project: Upgrading of Teacher Qualifications at Foundation Phase, KwaZulu-Natal and the Eastern Cape (2005-2008) | Maths Centre: Teacher upgrading | | | Zenex foundation report |
| 52 | Taylor & Prinsloo | 2005 | The Quality Learning Project Lessons for High School Improvement in South Africa | | The Quality Learning Project | JET | |
| 53 | van Loggerenberg-Hattingh | 2003 | Examining learning achievement and experiences of science learners in a problem-based learning environment | Problem-based learning | | | South African Journal of Education, Copyright © 2003 EASA, Vol 23(1) 52 – 57 |

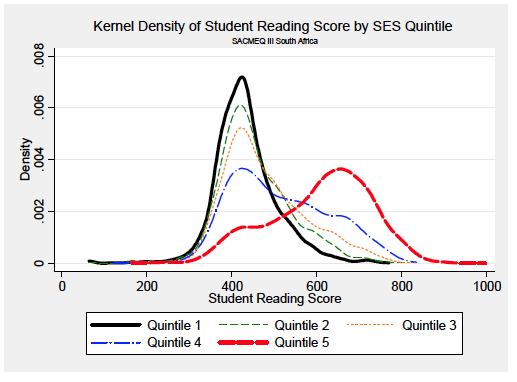
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| --- | --- | --- | --- | --- | --- | --- |
| 54 | Villanueva & Webb | 2008 | Scientific investigations: The effect of the ‘Science Notebooks’ approach in Grade 6 classrooms in Port Elizabeth, South Africa | | The Science Notebooks approach | African Journal of Research in SMT Education, Volume 12 (2) 2008, pp. 3–16 |
| 55 | Wessels | 2010 | School Libraries As A Literacy Intervention Tool In Primary Schools: Action Research In Atteridgeville | Reading is FUNdamental Literacy Project | | http://uir.unisa.ac.za/bitstream/handle/10500/3597/dissertation\_wessels\_n.pdf?sequence=1 |
| 56 | Williams | 2011 | A Summary And Analysis Of The Results Of The Questionnaire Surveys | | Joint Mentoring Project (JMP) | www.psp.org.za/component/attachments/download/90 |
| 57 | Wium, Louw & Eloff | 2011 | Evaluation of a programme to support foundation-phase teachers to facilitate literacy | | Programme to support Foundation-Phase Teachers | SAJCD, Vol 58, December 2011 |

# Appendix 3: Meta Evaluation studies of interventions within South African Education (ERA Final SDP Review Report, p61-62)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Author | Year | Title | Intervention name | Source |
| CDE | n.d. | Learner Improvement in ZENEX-funded Projects | Zenex funded programmes | Zenex |
| Roberts & Schollar | 2006 | The Evaluation Of Development Projects Of The Zenex Foundation Between 1995 And 2005 | Zenex funded programmes | Zenex |
| Roberts & Schollar | 2011 | Meta-analysis of programmes and projects supported by the Zenex Foundation between 2006 and 2011 | Zenex funded programmes | Zenex |
| Schollar | 2001 | A Review of Two Evaluations of the Application of the READ Primary Schools Programme in the Eastern Cape Province of South Africa | READ |  |

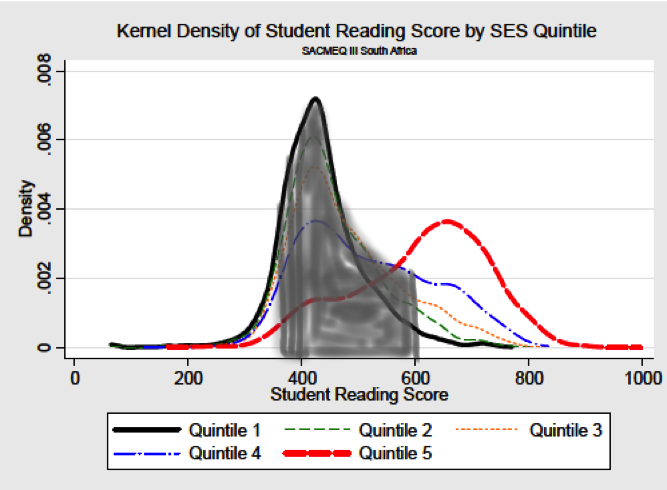
# Appendix 4: An illustration of bimodality using Spaull (2011)

We can demonstrate bimodality through the excellent work of Spaull (2011). In South Africa we classify schools in quintiles, with quintile 1 being schools located in the poorest of socioeconomic areas and quintile 5 being schools located in the wealthiest areas. What is interesting about school performance in the different quintiles is that performance in the SACMEQ tests is pretty much the same for schools in the first three quintiles, with quintile 5 showing a massive improvement in performance (Spaull 2011, p9):

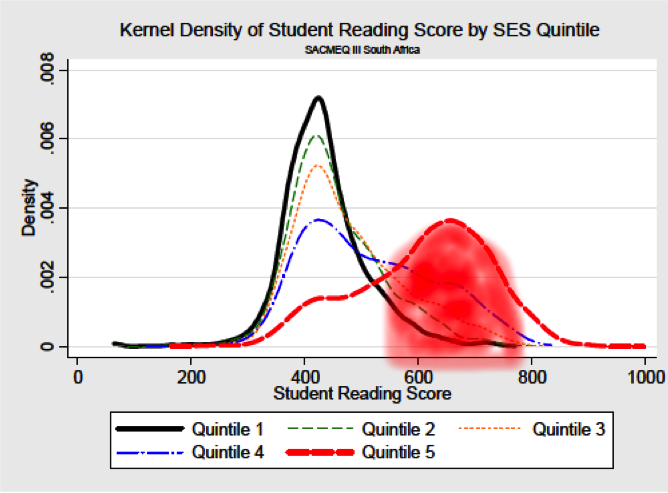


South African Student reading scores in SACMEQ II by quintile. (Kernal density in simple terms is a more accurate type of histogram that smoothens hard edges and represents data in a clear and more continuous way)

The black, green and orange profiles of the first three quintiles all show poor reading scores with hardly any students getting beyond 600 and most scoring around 400.

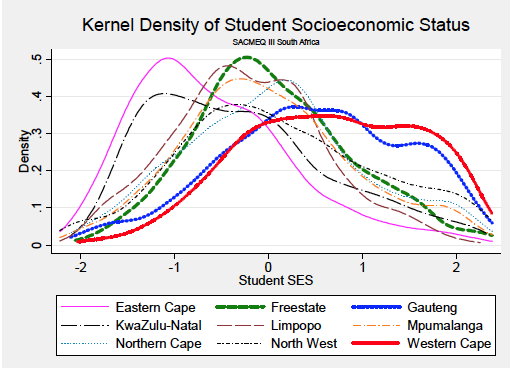


The results are not much better for quintile 4 schools in blue. Quintile 5 schools show a radically different profile in red with most of its schools performing at far higher levels, with a peak at around the 700 mark.

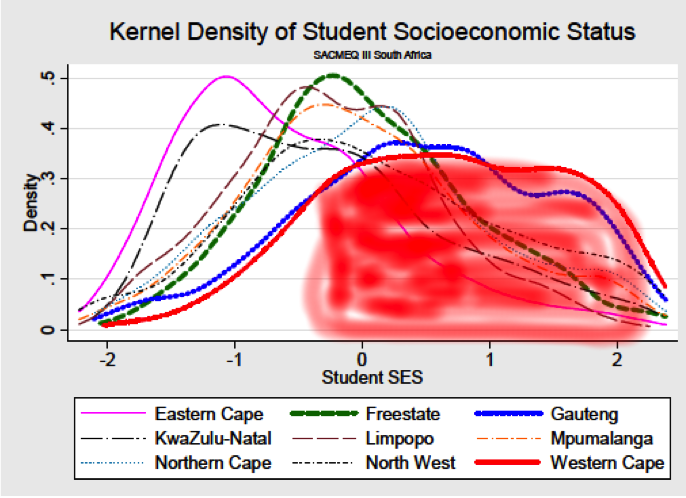
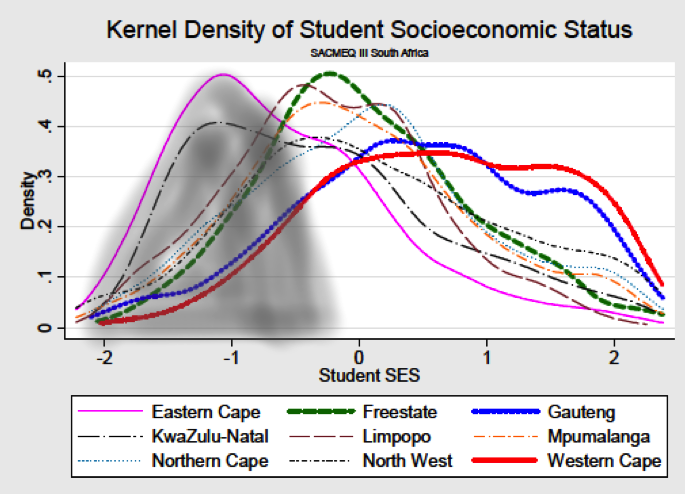


If you are located in the first four quintiles then the probability is high that your life chances will not be enhanced by education; if you are in the fifth quintile, then your chances are much better, resulting in the rich getting richer and the poor remaining poor. It is a sobering figure to contemplate. In South Africa we have a bimodal education system with the first four quintiles showing one pattern and the fifth quintile another pattern. It is appalling that where you were thrown into this world as a baby determines your success at school. We might want to believe that education provides everyone with an equal opportunity to succeed, the truth is the far harder reality of where you are born strongly influencing your performance.

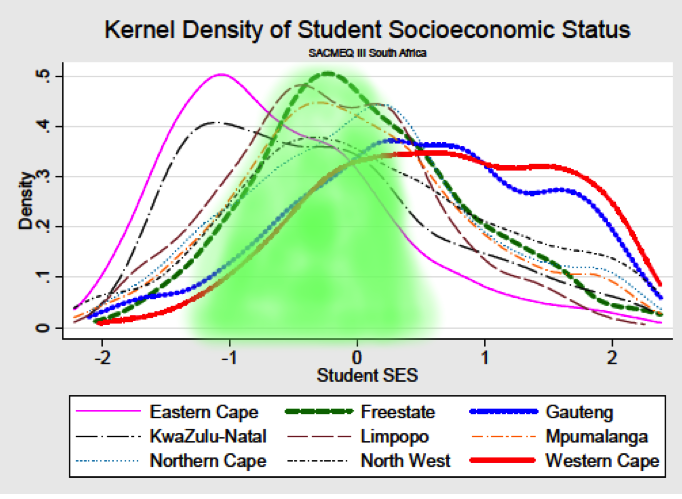
Keep this pattern in mind and take a look at the following graph that breaks down student socioeconomic status in provincial terms (Spaull, 2011, p.9):



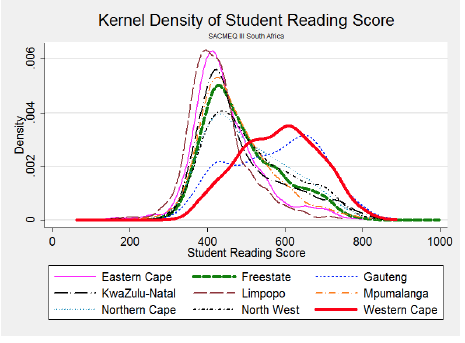
It provides a clear representation of the socioeconomic levels of the students who took the SACMEQ tests, with the Western Cape and Gauteng clearly the most well off and the Eastern Cape and KwaZulu-Natal deeply impoverished.



But if you look closely you will notice that many of the other provinces sit in-between the Eastern Cape/KZN on the one side and Western Cape/Gauteng on the other:



Now take a look at the following graph that represents how the different provinces have performed in the SACMEQ III reading test (Spaull 2011, p.10):



What jumps out is how the more spread out socio economic status levels of the provinces suddenly sharpens into a bimodal pattern with all the provinces, bar the Western Cape and Gauteng, performing poorly. It is similar to the student scores based on quintiles, with the quintile 1-4 school pattern reflected in the Limpopo, Eastern Cape, KwaZulu-Natal, Mpumalanga, Free State, Northern Cape and North West; and the quintile 5 pattern reflected in Gauteng and the Western Cape. Schooling in South Africa is intensifying socioeconomic inequalities, whether one organises schools on the level of quintiles or provinces. Either way, the majority of students in our country lose out. This is the magnitude of the problem facing school intervention programmes in South Africa.