

**An investigation into the impact of school
context on achievement: A situational analysis
of five Western Cape Schools in South Africa**

By

Dr. Emmanuel Mushayikwa Ph.D

Project Manager, MSEP.

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1.0 Introduction

1.1 Background and Context

The Mathematics and Science Education Project (MSEP), is a strategic partnership project between the University of Cape Town (UCT), the Western Cape Education Department (WCED) and the private sector. The project, spearheaded by the School of Education at UCT, was set up in 2006, to enable the partners to mobilize resources at their disposal, to help improve the quality of mathematics and science education in five Dinaledi schools in the Western Cape.

The project resulted from the realization that there has been a progressive decline in enrolment and passes of learners in Mathematics and Science, particularly from disadvantaged communities since 1993. This marked decline in mathematics and science learners presented a major challenge in terms of equitable access to tertiary education. Furthermore, a vicious cycle ensued, as the low output of mathematics and science learners had a direct impact on the system's capacity to produce qualified mathematics and science educators and furthermore, undermined the government's transformation objective to produce sufficient high-quality, "scarce skills" professionals required to accelerate the country's economic and social development (Laugksch et al., 2005).

The South African Government has placed major emphasis on mathematics and science education and the National Strategy for Mathematics, Science and Technology Education highlights three key areas for intervention:

- Raising participation and performance by historically disadvantaged learners in Senior Certificate mathematics and science;
- Providing high-quality mathematics, science and technology education for all learners taking the first General Education and Training Certificate (GET) and Further Education and Training (FET) Certificate; and
- Increasing and enhancing the human resource capacity to deliver quality mathematics, science and technology education. (Mosuwe, 2008)

MSEP's objectives, directly aligned with South Africa's National Strategy for Mathematics, Science and Technology (MST) Education, are as follows:

- i) Increase the number of black African learners taking mathematics and science;
- ii) Increase the number of black African girls pursuing careers in mathematics and science;
- iii) Improve the quality of mathematics and science teaching and learning, and;
- iv) conduct multi-disciplinary research in mathematics and science education at school level so that the Provincial and National Departments of Education will have the much needed information on how, why, and how much it takes to move schools in the disadvantaged sector forward.

As a result, MSEP adopted five schools in Cape Town's greater metropole areas. MSEP intends to run a school-based support program for the Management, Teachers and Learners of these schools, with a view to improving their performance in mathematics and science, from Grade 8 to Grade 12 level. The five schools all support a growing number of learners from disadvantaged backgrounds.

MSEP, as part of the Systemic Education and Extra-mural Development Support (SEEDS) initiative, has received a generous donation of funding from the Kingdom of the Netherlands. This funding will enable MSEP to conduct an intensive, research-led intervention to support the improvement of quality in the five MSEP schools, effective from January, 2009 to June, 2012.

1.2 Purpose of this situational analysis

This situational analysis will be used to build a snap-shot picture of the teaching and learning environment in each of the five schools. The snap shot will facilitate the identification of critical localized and systemic factors that might impact on the intervention. It will also provide a starting point for measuring project outcomes in subsequent years.

1.3 Scope of this study

Due to the severe constraints imposed upon this study by temporal considerations, the study will limit its focus to the general issues affecting mathematics and science aspects of the school curriculum. Specific content and classroom practice issues are addressed through the relevant

disciplines' baseline surveys. Other elements of the curriculum will only be referred to as and when they have a strong bearing on the big picture.

2.0 Towards a theoretical framework of the situational analysis

2.1 Introduction

One of the purposes of carrying out a school-based research component is to understand the elements that form a functional school system.

In the design of a situational analysis, one useful strategy is to consider the intended purpose of the analysis, as this provides guidance on what factors to focus on during the study. As stated in section 1.2 above, situational analyses are used to provide snap shot pictures of organizations. These snapshots provide a temporal window of the organization in space, because organizations are dynamic systems constantly changing and interacting with their environment. However, even in this instance, the temporal window is more than a static image, as it is imbued with historical linkages. In other words, the organization is constantly interacting with its environment, and this interplay of transformation between the organization and its environment constitute the current state of the organization.

In the same light, a school is a dynamic organization that changes with time. In post-modern thinking, the school is considered to be in a state of flux, continuous emergence or transformation, or as Chia (1996) puts it, "...a process of becoming" (p.581). For postmodernists, schools are not composed merely of units of analysis, (i.e. physical objects or resources), but also consist of complex (non-tangible) relationships between the elements that make up the organization.

It is therefore important that any analysis of the school situation takes into account the relationships between the units of the school. This kind of analysis departs from the traditional Cartesian approach, which would isolate elements of the system and thereby infer causation by studying the effects of individual units on the whole. The postmodernist perspective on schooling holds that the whole is bigger than the sum of its individual parts (Cilliers, 1998). Schooling is defined, not only by organizational structure and physical resources, but also by a network of relationships between the various structures and elements. It is the quality of these relationships that by and large determine the effectiveness of the school.

2.2 Introducing complexity theory as an analytical framework for schooling

Social critical theory (Leonardo, 2004) views the school as a network of relationships which are managed to propel societal values through dialogue and communication. These values and ideals mirror the aspirations of the ruling class. For example, during the Apartheid era, DET

schools were designed to produce a subservient social class that would service the needs of the white supremacists. After Independence in 1994, the new democratic and populist dispensation sought to change these value systems through a series of educational reforms, including the commissioning of the National Curriculum Statement (NCS), among other initiatives. The continued failure of ex-DET schools to perform in the new system is attributed to the “legacy of apartheid”, yet according to social critical theory, this is also an indicator of the disharmony that exists between the new school culture and values, and the local community culture and values. To improve school performance therefore, there is a need to identify critical areas that cause disharmony between the intended and the experienced curriculum.

A valid situational analysis would therefore go beyond auditing the physical and structural assets of the school system and attempt to capture as well, the relational factors that network across these structures. This is made possible by viewing the school as a complex system with various layers of organization, and a network of interactions between these layers. Schools and school systems possess the characteristics and qualities of complex systems. Complexity theory can therefore be used to analyze the various layers and relationships in a school system.

Complexity theory as a method of analysis makes the following assumptions about schooling:

- a) The school behaves like a complex open system.
- b) In a complex system there are interactions between the system components and between the system and its environment (Cunningham, 2001). These interactions are so intricate that it is impossible to completely understand the system simply by studying its constituents. What the system portrays at any given moment is a state of equilibrium defined by that instant and which can change within the next instant. Thus complex systems are in a state of constant flux, and this makes it difficult to assign causation agents to the system. For example, in the school system good performance cannot be attributed to good teaching alone, it is an aggregate of different interactions, relationships and shifts between the various school subsystems. The school system is a non-linear organization.
- c) Complex systems ‘learn’ from their interactions with the environment and self-organize (McClure, 1998). The concept of self-organisation as it relates to schooling implies that success in performance cannot be attributed solely to what goes on in the classroom, but that the effect of the environment in shaping that success must also be taken into consideration. The fact that a complex system is a learning organization means that its subsequent equilibrium point is in part determined by its history. A school’s snapshot can therefore be understood better by also looking at its trajectory. Self-organisation also implies that complex systems need to be studied in their natural, unrestricted environments if one is to isolate critical factors at play.

d) As a complex system is in a constant state of flux, changes in the environment will stress the system and cause perturbations. However, the system frequently re-organizes and reaches an equilibrium point with its environment. If the perturbations are more radical, the system cannot establish equilibrium and becomes unstable. As the system approaches the *edge of chaos*, it becomes unpredictable. For example, the ushering in of the new NCS curriculum created dis-equilibrium and school systems are now in a state of agitation. However, past decisions and relationships of the system have a bearing on its future direction, or as McClure (1998) describes it; “history circumscribes the choices” the system makes (p.20). These determining constrainers are called strange attractors. Strange attractors are critical factors capable of tipping over the system (bifurcate) from one level to another. They also ensure that any new equilibrium reached after bifurcation will revolve within particular limits.

Thus through the use of complexity theory, it is possible to hone in on these strange attractors, as the critical issues for intervention.

Figure 2.1 below summarizes what the author views as systemic strange attractors that impact on school performance, and which therefore need to be targeted by the situational analysis. The double arrows (black) depict the relationships matrix between the various systemic components. The blue diamonds represent external influences acting on the system, whilst the gray rectangles represent the system’s sub-components.

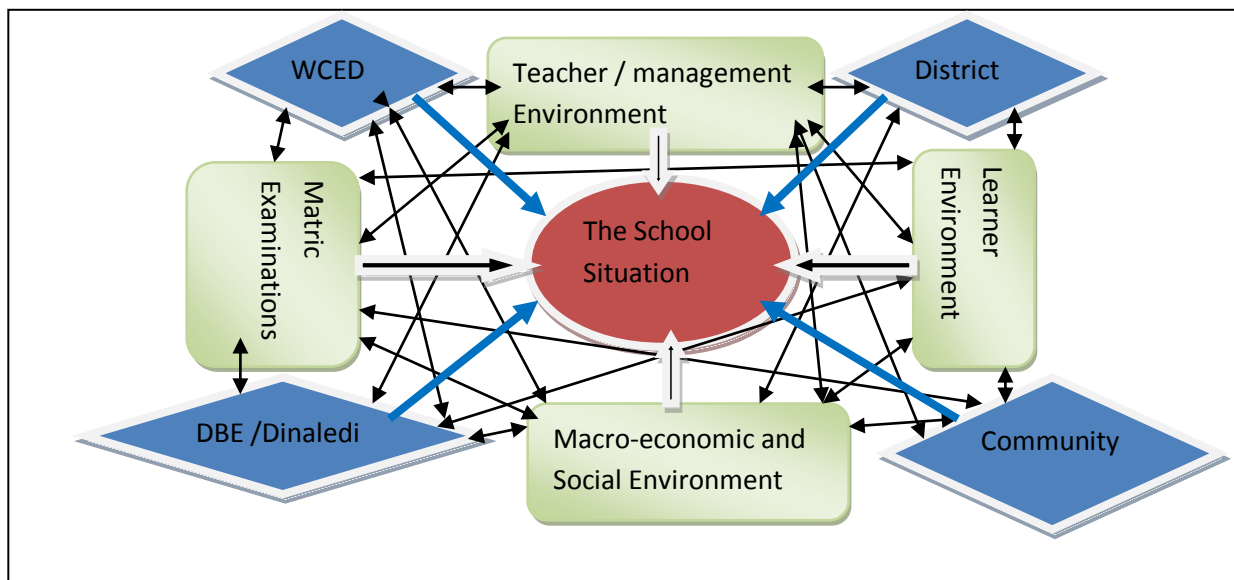


Figure 2.1: Critical issues (strange attractors) that impact on a school situation

The questions to be answered by the situational analysis are:

- a) How is the school organized?

- b) Who delivers the curriculum?
- c) How is the curriculum delivered and for whom?
- d) What are the outcomes of the curriculum delivery?

The rest of this situational analysis report will focus on these questions. Each school will be analyzed with respect to the school environment (comprising of management structure and resources), and curriculum delivery (teacher characteristics and classroom dynamics); the learning environment (comprising of learner characteristics and home background); attainment of learning outcomes (comprising of school performance history). It is expected that other environmental factors, such as the macro-economic environment, will be considered as they arise or as needed.

3.0 Methodology

3.1 Introduction

The questions raised in section 2.2 above require the collection of both quantitative and qualitative data and thus called for a multi-strategy research approach. Multi-strategy research is increasingly becoming the accepted and preferred approach in social surveys (Bryman, 2001; Gorard and Taylor, 2004). The reason for this preference is that using different research methods, combining both qualitative and quantitative approaches to data collection, enables the researcher to triangulate data and thus draw more valid and authentic conclusions from their research (Auerbach and Silverstein, 2003).

Triangulation of data has long been accepted as good research practice (Cohen Manion and Morrison, 2000) as it helps to increase the validity and authenticity of the conclusions drawn from the data. Krathwohl (1993) suggests varying data sources (timing, location and people) and varying data collection methods (interviews, questionnaires, observations, documentary analysis) to increase the quality of the data. In spite of the limited time and human resource constraints, the researcher was able to utilize both methods of triangulation.

A multi-strategy approach is also seen as reducing the “researcher effect” (Gorard and Taylor, 2004) and is therefore more acceptable to the critical theory and post-modernist paradigms as it is seen as favouring relational (or contextual) interpretation of events and data (Lather, 1991).

3.2 Research Design

Table 3.1 provides a summary of the research design for the situational analysis, based on the four questions raised in section 2.2 above.

Table 3.1 : MSEP Situational Analysis Research Design

Component	Information Required	Variables	Data Source	
School Environment	Management	Staffing	School profile documents	
		Enrolments	Class lists	
		Financial Management Status	Interviews, Principals	
	Organisation / Structure	Grading / Enrolments	Class lists	
			Organogram of responsibilities	Interviews, Principals
		Staffing	Docs collected from schools	
			Structure	Time tables / periods / duration
		Resources	Number of classrooms	Observations, Interviews Principals
			Number of laboratories	Observations, Inspections, Interviews
			Library	Observations, Interviews Principals
			Ablution blocks	Observation
			Science Equipment	Observations, inspection, interviews
			Teaching resources	Observations, Interview, Teachers
			Textbooks	Observations
			Computers Calculators	Observations
			Quality classrooms / staffroom	Interview teachers, learners
			Curriculum Deliverables	Cohesion of purpose
Mission statement	Observations, interviews			
Teacher characteristics	Qualifications			Pace setters, interviews HODs
	Experience	Interviews teachers		
	Curriculum Plans	Inspections, Interviews teachers		
	Teacher Organisation	Interview HODs		
	Teacher Background	Interviews Teachers		
Learning Environment Variables	Learner characteristics	Parents Education level	Learner questionnaire	
		Economic status	Learner questionnaire, / observations	
		Socio-cultural capital	Learner questionnaire / interviews	
		Language of instruction	Classroom observations	
		Expectations	Learner interviews / questionnaire	
School Attainment History	Performance Distribution	Internal Assessment	Documents from schools	
		Matric Results	Documents from WCED	
		SDU-Grade 9 results	Documents from SDU	

3.3 Sources of Data

As shown in table 3.1, sources of data included the following:

- a) documentation, obtained from the schools, and from the WCED. The documents included School improvement plans, School enrolment figures, staffing figures, Teachers and SMT responsibilities, Matric Examination Results analysis, internal assessment documents and Examination Item analysis documents. Each school was then assigned a folder containing all the documents collected from the school in hard copy. A checklist of all the documents collected per school is included in the Appendix 1 ;
- b) School observations – the researcher spent at least one day in each school, during which he observed the various school stakeholders as they went about their business. Field notes were taken. Altogether eight such school observation days were carried out;
- c) School visit reports – colleagues of the researcher, mainly science Education Specialists visited the five schools regularly and collected information about their disciplines. In the event of the visits, however, they also noticed and reported on school management and environmental issues that caught their attention. Other colleagues, whilst collecting documents for their areas of focus, also came across constraints, which were noted down and reported upon. During this period, the Education Specialists carried out twenty – one school visits. Education Specialists used standard school visit reporting forms that enabled them to state the purpose of the visit, the people met, the activities engaged in and the outputs of these activities. In addition, the report enabled reporting staff to flag issues of interest / concern which required immediate attention, or tracking. A copy of the reporting template is attached in the Appendix 2. MSEP has opened a Vula archive site which contains all the weekly and monthly reports by school;
- d) Interviews of Principals, Teachers and Learners. Semi-structured and un-structured interviews were held with various stakeholders. The interview method was mainly used as a method for verifying information collected through other channels and was therefore not considered as the main data collection method. The reason for this decision was the observation that, during the first quarter (the period of the situational analysis) the staff at schools and districts, were so busy they were reluctant to have formal interviews. The researcher was careful to read their mood and collect the data in as unobtrusive a manner as was possible. This meant that carefully thought out and focused questions were asked whenever the teacher or the principal was perceived to be in a receptive mood, and the questions were kept to the absolute minimum. Notes were then taken after the interview. Six interviews with Principals, three interviews with deputy principals, eight interviews with teachers and 9 interviews with learners were carried out by the researcher during this period;
- e) Inspection of physical facilities and resources. During the school visits, the researcher and colleagues also took time to visit the schools' classrooms, laboratories and libraries,

with a view to check on the general state of these facilities. School visit reports captured the state of these resources. In some cases, inspection of curriculum materials such as pace-setters, textbooks and equipment was also undertaken during classroom observations;

- f) Finally, learners from the five schools were invited to apply for the MSEP learner component. These learners were required to fill in a learner questionnaire that had been prepared to provide a picture of the learner characteristics within the schools. Altogether 882 learners completed these questionnaires. The questionnaire sought personal information about the learners, their home background, their school performance and activities, support from family / guardians and the learners' aspirations. However, it was discovered that most learners ascribed to themselves test scores that were inaccurate, in a bid to impress, so we decided to collect learner assessment scores independently from the questionnaire. A template for the Learner questionnaire is also attached in the Appendix 3.

3.4 Data Collection

The main objective of the data collection visits for the researcher was to collect baseline documents that could be used to build up a profile of the school. These documents, described in section 3.3 above would then be combined with information from other sources to provide evidence for the situational analysis.

Table 3.2: Summary of type of data collected from each school

	A	B	C	D	E	Totals
Documents	√	√	√	√	√	
Lesson Observations	2	1	1	2	2	8 days
School visit Reports	5	4	4	5	3	21 visits
Semi-structured Interviews: Principals	1	1	1	1	2	6 interviews
Deputy Principals / HODs	1	1			1	3 interviews
Teachers	2	1	1	2	2	8 interviews
Learners	2	2	1	2	2	9 interviews
Inspection of facilities	√	√	√	√	√	
Learner Questionnaires	200	169	164	147	202	882

Table 3.2 shows the type of data collected from each of the five schools. The period of data collection was from mid February to end of March (a period of 6 weeks). This period co-incided with increased school visits by the science team, the learner co-ordinator and the researcher.

In some cases, schools were reluctant to provide information deemed confidential, for example, relating to individual learner performance records. In such instances, the researcher offered to copy by hand, the information required and spent hours in the staff-room, copying

marks onto class lists. However, this time was well spent, as the researcher was able to talk to teachers who dropped into the staffroom from time to time, during their teaching breaks, as well as observing the ongoing dynamics of a school’s staffroom relationships. It was during such times that the researcher struck good rapport with some teachers, to the extent of being invited to attend their next lesson, or to the extent that teachers felt free to discuss personal professional problems. It is the author’s contention that such instances were the tipping points in providing deep insights into the workings of the school, as in both cases mentioned above the relationships developed were spontaneous and rewarding.

Gladwell (2000, p12) defines a tipping point as a dramatic moment when a connection is made that changes a relationship all at once. A point when the researcher-client relationship experiences a subtle, but profound change. Such a point was reached when teachers opened up of their own accord. They were able to provide deep reflections and insights of the critical issues affecting their professional practice. However, as these were not solicited interviews, the researcher was careful to take notes only after the discussions. The researcher had the priviledge of experiencing such encounters at least once in each of the schools.

Table 3.3: Timeline of situational analysis data collection activities

Data Type	January	February	March
School visit reports	All Schools	All Schools	All Schools
Collection of docs		All Schools	All Schools
Interviews		Three schools	All Schools
Inspections	All schools	All Schools	All School
Learner Questionnaire			All Schools
Classroom Observations		All Schools	All Schools

Table 3.3 shows that most data collection occurred in February and March. This period also coincided with a time when classes were in full swing, and thus teachers were quite busy.

3.5 Data Analysis

Data was analyzed through a collation process, using ideas from complexity theory The units of analysis were the School Management Teams, the Teachers and the Learners. For each analysis question, basic data was gathered through the documents collected from the school. These documents included the school improvement plan, the learner schedules and matric results. Strange attractors were identified by collating documentary evidence with anecdotal data from the semi-structured interviews, classroom observations and learner questionnaires. The strange attractors were categorized as either internal strengths / weaknesses, or external context-specific environmental variables (categorized as expectations, opportunities or constraints).

The following constructs were used in defining the strange attractors:

- a) Internal strengths: those systemic attributes that tend to make the system more efficient;
- b) Internal weaknesses: The systemic attributes that reduce the efficiency of the system;
- c) Expectations: The pressures that are brought to bear on the system by the stakeholder expectations (both internal and external);
- d) External Opportunities: The positive changes in the environment that can result in the more efficient functioning of the system;
- e) External constraints: The negative reality within the environment that constrains the efficient operation of the system;

The emerging matrix served as an analysis framework, but also provided the basis for recommendations.

3.6 Ethical Considerations

Prior to the data collection process, the researcher applied for access through the normal WCED channels. At the school level, the researcher had to negotiate access with every individual who provided information used by the research. This was done through full disclosure of the purpose of the visit. An undertaking was made also to provide the schools with individual reports of the results of the situational analysis to assist them with their own planning and to generate debate and reflection on their situation.

4.0 Situational analysis of School A

4.1 Introduction

School A was established in 1996 in the Cape Town suburb of Bellville, to cater for the growing African migrant population (mainly from the Eastern Cape). By 2000, the school was relocated to its present premises. Most of School A's learner population comes from the hinterland in Khayelitsha.

School A is located in Khayelitsha. The school has a community poverty index of 0.80, which means that most of the learners are too poor to afford fees.

4.2 How is the school organized?

4.2.1 Administration structure

The management structure of the school consists of an Executive comprising of the principal and two deputy heads, and the School Management Team made up of subject discipline HODs. The executive is responsible for overall school administration, discipline and finance. The School Management team is responsible for the delivery of the curriculum. Table 4.1 below summarizes the basic school management structure. The school has recently undergone a change of leadership. The previous principal retired at the end of 2008, and one of his deputies has taken over. Thus when the situational analysis was being undertaken, the school was still undergoing transition, the effects of which has still to be quantified.

Table 4.1: Summary of management structure for School A.

	2004	2005	2006	2007	2008	2009
Staff Est: # Principals	1	1	1	1	1	1
Staff Est: # Deputies	2	2	2	2	2	2
Staff Est: # Dept Heads	8	8	8	7	7	6
Staff Est: # Educators	32	33	31	31	30	28
Staff Est: # Adhoc Posts	2	3	1	2	0	2
Staff Est: Total	45	47	43	43	40	39
Number of Learners	1,482	1,549	1,450	1,433	1,330	1,206

4.2.2 Financial structure

In 2008, School A was allocated R581.00 per learner. With a population of 1,229 learners, the school had an operating budget of R772,730.00 with which to run the affairs of this school. The learners cannot afford fees, thus the school gets most of its revenue from the Government. Finance is therefore a constraint for the school as the executive cannot afford resources to strengthen its mission. They have to rely on donations for essential resources. For example, the former principal of the school, had indicated that the school had plans to renovate the science laboratories and equip them, but were waiting for a donor organization to assist.

4.2.3 Human Resources

As can be seen from table 4, School A has been experiencing a slight decline in both staff and learner numbers since 2004. The school population peaked in 2005 and has since been falling. The headmaster had attributed this decline to a more proactive learner selection and retention policy, as well as its new status as a Dinaledi Maths and Science focus school. School A also employs two secretarial staff and two groundsmen. In 2005, the teacher to pupil ratio was 1:33. However, in reality this ratio is much higher, as both the Executive and School Management team have reduced teaching loads to allow for school administration duties. In 2009, the teacher to pupil ratio is 1:31. However class sizes range from between 20 and 45. Lower teacher to learner ratios are strengths to the school as teachers can pay more attention to individual learner needs.

4.2.4 Physical Resources

School A has got 27 classrooms, 2 science laboratories, a library, a computer laboratory and a school hall. The classrooms have study desks and benches, but they look dilapidated and in poor shape. The two science rooms are broken down, with no gas or water faucets. The library has no books and is currently being used as a filing storeroom. The computer laboratory is currently being managed by the Khanya Project and has computers that are connected and online. As mentioned earlier, the school depends on donor funding to carry out major infrastructure renovations. The major renovations

required to provide a conducive physical environment for the school are not even mentioned in the 2008/9 school improvement plan. The inability to raise funding is therefore a threat to the success of the school.

4.2.5 Policies

School A has developed policies to enable basic school functioning over the years. However, at the time of the research, it was not possible to obtain the policy documents. Teachers interviewed mentioned that the school had policies on absenteeism, punctuality and assessment. However, they were unable to furnish documents to support these claims. The researcher had occasion to witness the policy on punctuality in action. Learners who are late are kept outside the school gates for counseling. A non governmental organization sends young people to talk to the learners. The learners were only allowed into the school premises after the counseling session. Truancy and punctuality are problems at School A. One of the Deputy Heads explained that most of the learners come from single parent families, or are staying with guardians and siblings. The parents go early to work and have no idea that their kids arrive late at school. The problem is even more pronounced, if the learner is staying with guardians or siblings, as then they might not have authority to ensure compliance.

4.3 Who delivers the curriculum?

4.3.1 Teacher Qualifications

The researcher was unable to establish the qualifications of most of the teachers at School A, save for those involved in teaching Mathematics, Science and Life Sciences and Life Orientation subjects. The reason for this gap in information was that the school management and teachers believed MSEP to be mainly interested in these subjects and therefore did not supply information they deemed to be irrelevant. Table 4.2 highlights the qualifications and experience of the teachers mentioned above.

Table 4.2: Characteristics of mathematics, science and life orientation teachers

Characteristic		
Gender		
	Male	8
	Female	5
Qualifications		
	HDE	3
	BSc	4
	BSc + PGCE	6
Experience		
	Less than 5 Years	4
	Between 5 and 10 Years	6
	More than 10 years	3

The table shows that most of the maths, science and LO teachers at School A, qualified after 1998 . The teachers are therefore, familiar with the Outcomes Based Education curriculum. The majority of the teachers have adequate (M+4) teacher qualifications and have over the years acquired additional

qualifications through the Advanced Certificate in Education (ACE). Documents also show that most of the teachers are actually teaching only one subject, but at multiple grade levels.

4.3.2 Departmental Organisation of Teaching

School A's curriculum is organized around six discipline departments (Learning Areas): These are Mathematics, Languages, Sciences, Life Orientation, Geography and Commerce. The HODs of these learning areas are also members of the school management team. School Management Teams meet weekly to keep abreast of the day to day developments. Formal, whole staff meetings take place at least twice a quarter.

4.4 How is the curriculum delivered and for whom?

4.4.1 Cohesion of purpose

Cohesion of purpose is defined as a shared understanding and commitment to the school's mission, by all stakeholders. Cohesion of purpose is evident when all stakeholders are aware of the school's mission, identify with it, and actively seek, individually and in groups, to realize the mission. The mission of the school focuses on the quality of teaching and learning as its central function. The school improvement plan also emphasizes focus areas that deal with improving quality of teaching and learning, and learner achievement as priority areas for development. To this end, the school has identified the deepening and enhancement of subject co-ordinators' content knowledge, and the provision of additional (afternoon) classes as possible interventions towards improving curriculum quality. The main constraint, also identified towards achieving this goal, is the lack of adequate funding to provide resources for these activities.

4.4.2 Curriculum Planning

Though the WCED delayed in delivering pace-setters to the school, School A was fully operational by the first week of February. One of the HODs mentioned that they had developed departmental pace setters which they could use in the meantime. These were based on the examination guidelines provided by the department last year, and last year's pace setters. The official medium of instruction is English, but in both science lessons observed teachers used extensive code-switching with isiXhosa, which is the mother tongue of the majority of learners and teachers in the school. In addition, isiXhosa is widely spoken within the school, giving rise to the simultaneous existence of two language sub-cultures.

4.4.3 Time Tabling, Periods

By the beginning of February, the time tables had been finalized. The length of each period at School A is 35minutes long. As there are no double periods, it is difficult for teachers to include practical work sessions within the course of a normal lesson and so teachers reported that they seldom do practical work with learners during the course of the lessons. Learners carry out investigations during their own time (after lessons). The lack of provision for adequate practical work is considered by science teachers as a constraint that limits their effectiveness.

4.4.4 Learner Characteristics

School A has a learner population of 1206 learners (grades 8-12). Of these learners, 672 learners are in the FET phase (Grades 10 – 12). 278 learners in Grades 10 – 12 are taking both Mathematics and Physical Sciences and of these learners, 202 applied to participate in the learner component of MSEP. The learner characteristics for School A will be drawn from these learners. Table 4.3 provides basic information about the learners.

Table 4.3: Summary of School A Learner Characteristics

Characteristic	Number of Learners
Gender	
Male	110
Female	92
Province of Primary Schooling	
Gauteng	1
Eastern Cape	39
Western Cape	162
Guardian	
Both Parents	130
Father	4
Mother	25
Siblings	10
Relatives / other	33
Highest Qualification of Father	
Unknown	46
No formal education	11
Primary (up to Grade 9)	55
High School drop out	43
Matriculation	42
College / Professional qualification / Diploma	4
University	1
Highest Qualification of Mother	
Unknown	21
No formal education	6
Primary (up to Grade 9)	63
High School Drop Out	60
Matriculation	50
College / Professional qualification / Diploma	1
University	1
Progression	
Repeated a grade	72
Straight progression	130
Grade	
Grade 10	68
Grade 11	80
Grade 12	54
Total Applicants	202

The learners who applied to be on the program constitute 73% of learners taking Mathematics and Science at the school, and roughly 17% of the total learners in the school.

The learner characteristics above highlight the following issues pertaining to learners taking mathematics and science at the school.

- a) Roughly 20% of the learners did their primary education in other provinces. This is a significant issue, because teachers at School A and other MSEP schools have identified the fact that some of their learners come from diverse primary backgrounds has a bearing on the quality of baseline knowledge they bring to the school.
- b) More than one third (72) of the learners are not living with both biological parents, and of this number, 43 (out of 72) live with relatives and siblings. Informal talks with some learners from the same school revealed that they live with their grandparents (mostly grandmom). This is an issue of concern, especially when considering the locus of control and guidance for these learners. Without parental authority, learners are vulnerable to external control from peers and others, which might not always be aligned with school objectives.
- c) 23% (46/202) of the learners did not know their father's academic level. The vast majority of the remainder, (109/156) reported that their fathers had not matriculated. These learners are academic pioneers in their families and face the challenge that their fathers might not always appreciate the demands of modern schooling, and thus might not be able to provide them with the support that they need.
- d) Similarly, 21 (10%) of the 202 learners reported that they did not know their mother's educational level, and 130 (72%) of the remaining 181 learners reported that their mothers had not matriculated. This is again an issue of concern, as mentioned in (c) above.
- e) To cap it all, almost 35% (72) of the learners reported that they had repeated some of the grades. This fact is also borne out by the observation that the learners' ages range vary from 15 to 22 within the three grades – a variation of seven years. This variation and the points raised in (a) above pose problems for teachers because their classrooms are academically heterogenous. A point that will be re-visited in the discussion.

It is reasonable to assume that these same characteristics apply equally to the rest of the school learner population. Thus the learner characteristics provide major challenges for teachers in the quest to improve the quality of education at the school.

4.5 What are the outcomes of the curriculum delivery?

4.5.1 Internal Assessment of performance

The challenges that the school is facing in its efforts to improve the quality of teaching and learning are reflected in the performance outcomes for the school. Table 4.4 shows the 2008 internal assessment results analysis for grades 8 – 11. The general trend appears to have been that the average pass mark for each grade decreases as the grade increases. For example, the average pass mark for maths at grade 8 level was 46% compared to 18% in grade 10 and 26% in grade 11. In fact, in grade 11 only two learners got pass marks that were over 40%.

Apart from the fact that the average marks for mathematics and physical science subjects at FET level, are very low, table 4.4 also shows that the number of learners taking these subjects decreases from grade 10 to 11.

Table 4.4: Summary of Internal Assessment Results Analysis for School A

Grade	Subject	No of Learners	No. Pass	No. Fail	Av. Mark %
8	Mathematics	206	188	18	46
	Natural Science	206	162	44	45
9	Mathematics	240	160	80	30
	Natural Science	240	129	111	37
10	Mathematics	251	45	206	18
	Life Science	219	171	48	37
	Physical Science	150	51	99	23
11	Mathematics	135	55	80	26
	Life Science	114	111	3	39
	Physical Science	67	34	33	29

For example, out of the 67 learners in Grade 11 in 2008, only 54 proceeded into Grade 12. Teachers indicate that some of the learners repeat Grade 11, while others drop out completely. At the lower levels, (Grades 9 and 10), repeats clog up the system, so that more learners, and therefore, class numbers increase in the lower grades. This results in teachers being overwhelmed and, considering the diversity of needs that these learners bring, as indicated in section 4.4 above, the quality of curriculum delivery is compromised.

4.5.1 Annual Matric Outputs / Trends

Table 4.5: Progressive performance in Maths and Science.

	Mathematics	Physical Sciences	Overall pass rate
2004	75% (9/12)	46% (12/26)	
2005	77% (7/9)	100% (2/2)	
2006	100% (13/13)	94% (15/16)	77%
2007	53% (8/15)	36% (8/22)	68%
2008	44% (46/105)	72% (38/53)	68%

From 2004 – 2006 School A enjoyed high matric pass rates in Maths and Science. This was due to the fact that the school traditionally enrolled very few learners at the Higher Grade level. In 2008 however, the New Curriculum Statement came into effect, and with it, changes in the assessment of matric examinations. This also meant that, as a Dinaledi school, School A had to enroll a much larger group of matriculants in mathematics and science. As a result, School A experienced a dip in pass rates for Mathematics, though there was an increase in the Physical Sciences pass rate. School A is expected to continue experiencing challenges in mathematics especially as they are required by the Dinaledi project to enroll most of their learners in maths as opposed to Maths Literacy.

4.6 Discussion and recommendations

The situational analysis has revealed that School A high school has several overarching issues that need to be addressed if learner performance is to be improved. Some of these can be addressed directly by

the project, but the others would require systemic intervention from WCED. Table 4.6 provides a summary of these issues in the form of a matrix.

Table 4.6: Summary of over-arching issues pertaining to School A

	Socio-cultural Expectations E1: Guardianship E2: Social Support for learner achievement E3: Development of self-efficacy	Internal Strengths S1: The lower teacher – learner ratios in mathematics and physical science classes S2: Community (NGOs) and youth involvement in counseling learners.	Internal Weaknesses W1: Inadequate physical resources and books constrain the delivery of the curriculum W2: Large numbers of repeaters in the school's grades weakens cohesion of purpose. W3: Learners from diverse backgrounds need special skills
External Threats T1: Dilapidated infrastructure (Library, Science Labs) T2: Inadequate finance to support the school's improvement plan	1. Most learners live with either single parents or guardians and thus are unable to raise the required funds to pay for renovations (T1, E1) Support the school's fundraising efforts through lobbying WCED. 2. Support the school's improvement plan through targeted training support for Management and subject co-ordinators (Bursaries?)(T2)	1. More learners can be accommodated in the existing facilities – or support smaller groups of learners in afternoon classes. (S1, T1)	1. Provide on-site support for teachers to acquire skills for multi-level teaching in existing classrooms 2. Learners come from predominantly poor families and cannot afford to pay fees or financial support for renovations – support executive to fund-raise. (Lobby WCED) T1, W1,
External Opportunities O1: The change of leadership at School A has placed the school in a state of flux, with new leadership opportunities O2: Although school policies on absenteeism, truancy and discipline do exist, they are not explicit and cohesion of purpose is not evident.	1. Lack of parental guidance can lead to lowered self efficacy and susceptibility to peer influence – Increase learner and peer support at school. (E2, O1) 2. Provide support and personnel for afternoon classes and thus enable learners to spend more time on academic engagement. (E2, O2)	1. Involve the community and SGB in learner counseling and other school activities. (O2,S2) a) The leadership at School A is in transition and needs to be supported carefully to ensure that the system does not collapse on itself. There is need to develop a leadership mentorship program for School A (O2, S2)	1. Support the development of a multi-grade / multi-level skills training for teachers to enable them to respond adequately to learners needs. (O1, W3)

Table 4.6 reveals that the performance of school A can be improved by:

- a) increasing the time on task. This could be achieved by increasing the cohesion of purpose with respect to discipline, absenteeism, truancy, punctuality and efficient use of time by teachers. This problem has been observed elsewhere in South Africa. (See Chisholm, et al., 2005; Van derberg and Louw, 2006; Reeves and Muller, 2005 and Taylor, 2008)
- b) Increasing support for behavioural change and role modeling among learners as they do not have viable academic role models to emulate. Educational Psychologists, such as Luiselli et al., (2005) argue that peer mentorship can have positive effects on student discipline and academic behavior. The intervention could include inviting NGOs into the school to train peer leaders, or involving community role models in the activities of the school.

4.7 Summary and conclusion

Table 4.6 shows a TOEWS analysis matrix for School A. The matrix identifies the main strange attractors (over-arching issues) pertaining to School A. Throughout the preceding discussions, it was highlighted that apart from the infrastructural and physical components of the school system, the interrelationships between the sub-components are also crucial for the effective operation of the school system.

The issues identified which can inform the future of the intervention include:

- i) Matching the MSEP subject interventions to the school improvement plan, e.g.
 - a. Supporting the establishment of afternoon classes as part of the learner program. MSEP can assist by providing support for the teachers and additional staff support to enable more learners to participate in the program.
 - b. Providing professional development support to teachers so that they can teach to individual learner needs. Considering the diversity of the learner backgrounds and age ranges, this may also include looking at learner developmental needs. It must also include strategies to develop learners self-efficacy, as this is essential if learners are to overcome the socio-economic barriers to learning, that are endemic within their society.
 - c. Supporting the school to extend the academic day by including afternoon and weekend sessions, so that learners spend much more time engaging with their school work. This might actually mean seconding ad-hoc staff to assist with the teaching programs .
- ii) Supporting a smooth transition of the school management through a mentorship program for the executive and the SMTs.

5.0 Situational analysis of School B

5.1 Introduction

School B was established as a model C (formerly, whites only) school in the Cape Town suburb of Observatory. The school was later relocated to its present location, where it has slowly undergone transformation since 1994. The school is administered in circuit 1 of the Metro Central Education District and has a community poverty index of 0.38, which means that learners pay subsidized fees.

5.2 How is the school organized?

5.2.1 Administration structure

The management structure of the school consists of an Executive comprising of the principal and two deputy heads, and the School Management Team made up of three administrative HODs. The School Management team and the Deputy Principals also act as the Grade Heads. In addition, the management structure includes sixteen heads of subject, responsible for each learning area in the school curriculum. The executive is responsible for overall school administration, discipline, safety and security and finance. The subject heads are responsible for the delivery of the curriculum. Table 5.1 below summarizes the basic school management structure.

Table 5.1: Summary of management structure for School B.

	2004	2005	2006	2007	2008	2009
Staff Est: # Principals	1	1	1	1	1	1
Staff Est: # Deputies	1	1	1	1	1	2
Staff Est: # HODs	3	3	4	4	4	3
Staff Est: # Subject Heads	8	8	8	6	6	6
Staff Est: # Educators	16	16	16	17	16	16
Staff Est: # Adhoc Posts	3	4	4	3	14	13
Staff Est: Total	30	31	31	30	40	39
Number of Learners	722	737	766	803	836	845

5.2.2 Financial structure

In 2008, School B was allocated R275.00 per learner. With a population of 836 learners, the school had an allocated budget of R230,000.00 with which to run the affairs of this school. However, learners at the school pay a subsidized fee of R5,870.00 per learner per year. This increases the schools revenue to R 5,000,000.00 per year. With this amount of funding, the school can afford to pay for additional staff through School Governing Body (SGB) posts. For example, in 2009 the school has 13 SGB posts in addition to the established posts.

5.2.3 Human Resources

From table 5.1, School B, has a small staff complement due to its small learner population, staff numbers are boosted by SGB funding. The school demographics has been changing drastically since Independence. The pre-dominantly white learner population has given way to a majority of coloured learners. In turn, since 2000, the black African population has been steadily growing, and it currently constitutes about 44% of the total learner population.

5.2.4 Physical Resources

School B has got twenty-three classrooms, five science laboratories, a library, three computer laboratory and a school hall and a workshop. The classrooms have study desks and chairs and they are well maintained. One computer laboratory is currently being managed by the Khanya Project and has computers that are connected and online. The school identified classroom space as one of the constraints that constrain its effectiveness. There are plans to build more classrooms and ablution blocks.

5.2.5 Policies

School B has developed policies to enable basic school functioning over the years. However, at the time of the research, it was not possible to obtain the policy documents. The Deputy Head mentioned that the school was currently grappling with an issue arising from the increasingly multi-cultural nature of the school.

5.3 Who delivers the curriculum?

5.3.1 Teacher Qualifications

The researcher was unable to establish the qualifications of most of the teachers at School B, except for those involved in teaching Mathematics, Science and Life Sciences and Life Orientation subjects. The reason for this gap in information was that the school management and teachers believed MSEP to be mainly interested in these subjects and therefore did not supply information they deemed to be irrelevant. Table 5.2 highlights the qualifications and experience of the teachers mentioned above.

Table 5.2: Characteristics of mathematics, science and life orientation teachers

Characteristic	
Gender	
Male	8
Female	6
Qualifications	
BSc	6
BSc + PGCE	8
Experience	
Less than 5 Years	2
Between 5 and 10 Years	5
More than 10 years	7

The table shows that most of the Mathematics, Science and Life Orientation teachers at School B qualified before 1998 . In fact documents show that three of these teachers have over 25 years experience. The majority of the teachers have adequate (M+4) teacher qualifications and have over the years acquired additional qualifications through the Advanced Certificate in Education (ACE). Most of the Physical Sciences teachers are also teaching Mathematics. School B has a stable staff complement who have taught at the school over many years. However, because of their vast experience, teachers tend to be more conservative and critical of innovations and therefore need to understand the reason for change before they take it up (Steffy, 1999).

5.3.2 Departmental Organisation of Teaching

School B' curriculum offers 16 subject areas. These are headed by the subject head and include the following Afrikaans, Mathematics and Mathematical Literacy, Information Technology, Economics, English, Xhosa, Arts and Culture, Drama, Accounting, Sciences, Life Orientation, consumer studies, Geography and Commerce. The subject heads meet with their teams at least once a week.

5.4 How is the curriculum delivered and for whom?

5.4.1 Cohesion of purpose

The School B's improvement plan identifies understanding and dealing with cultural diversity as being central to the realization of the school's mission. The mission of the school focuses on the quality of teaching and learning as its central function. The school improvement plan also emphasizes focus areas that deal with improving quality of teaching and learning, and learner achievement as priority areas for development. To this end, the school has identified the enhancement of classroom management practices, up-skilling and innovative teaching approaches as areas of focus in the next five years. School B has also planned a series of in-house workshops towards this end. The school has also identified staff and learner inter-personal relationships and the full utilization of the school's resources as other central objectives.

5.4.2 Curriculum Planning

Though the WCED delayed in delivering pace-setters to the school, School B was fully operational by the first week of February. However, time tabling was problematic this year. The time table had to be modified at least six times in the first term alone. The official medium of instruction is English, but the school also offers classes in Afrikaans. Although there is a significant minority of African Xhosa – speaking learners, there is very little code switching that takes place within the classrooms. English is predominantly spoken both within the school, and in the classroom, thus providing a unified language sub-culture.

5.4.3 Time Tabling, Periods

School B experienced a time-table glitch this year and had to modify its time table several times. This interfered with the teaching program. The length of each period at School B is 60 minutes long. This time is adequate for the planning and running of science practical sessions. Learners carry out

investigations during their own time (after lessons), but they do receive practical instructions during lessons.

5.4.3 Learner Characteristics

School B has a learner population of 845 learners (grades 8-12). Of these learners, 486 learners are in the FET phase (Grades 10 – 12). 180 learners in Grades 10 – 12 are taking both Mathematics and Physical Sciences and of these learners, 169 applied to participate in the learner component of MSEP. The learner characteristics for School B will be drawn from these learners. Table 5.3 provides basic information about the learners.

Table 5.3: Summary of School B Learner Characteristics

Characteristic	Number of Learners
Gender	
Male	83
Female	86
Province of Primary Schooling	
Limpopo	1
Western Cape	167
Outside South Africa	1
Guardian	
Both Parents	124
Father	9
Mother	29
Siblings	1
Relatives / other	6
Highest Qualification of Father	
Unknown	53
Primary (up to Grade 9)	5
High School drop out	14
Matriculation	42
College / Professional qualification / Diploma	15
University	40
Highest Qualification of Mother	
Unknown	30
Primary (up to Grade 9)	7
High School Drop Out	27
Matriculation	46
College / Professional qualification / Diploma	20
University	39
Progression	
Repeated a grade	12
Straight progression	157
Grade	
Grade 10	67
Grade 11	50

	Grade 12	49
Total Applicants		169

The learners who applied to be on the program constitute 93% of learners taking Mathematics and Science at the school, and roughly 35% of the total learners in the school.

The learner characteristics above highlight the following issues pertaining to learners taking mathematics and science at the school.

- a) 99% of the learners did their primary education in the Western Cape. However, School B has probably the highest diverse learner background among the MSEP schools. One Deputy Principal estimated during discussions that School B has probably more than forty feeder schools. The clientele is mostly lower middle class, with learners coming from as far as Khayelitsha, Bellview, the Cape flats, District Six and the Southern Suburbs. Thus learners bring with them diverse knowledge and primary skills.
- b) Slightly more than one quarter (27%) of the learners are not living with both biological parents, and of this number, 7(out of 45) live with relatives and siblings. Informal talks with some learners from the same school revealed that they live with their grandparents (mostly grandmom). This is an issue of concern, especially when considering the locus of control and guidance for these learners. Without parental authority, learners are vulnerable to external control from peers and others, which might not always be aligned with school objectives. The fact that these learners are drawn from different locations and sub-cultures also tends to exacerbate the problem.
- c) 31% (53/169) of the learners did not know their father's academic level. 16% (19/116) of the remaining learners reported that their parents did not matriculate. However, of the 97 who matriculated, 55 (56%) went on to gain higher qualifications. Thus the majority of these fathers act as academic models for their children. This is also evidenced by the academic and other support that the school receives from the parents through the School Governing Body (SGB).
- d) Similarly, 30 (17%) of the 169 learners reported that they did not know their mother's educational level, and 34 (24%) of the remaining 139 learners reported that their mothers had not matriculated. 59 of the 105 mothers who matriculated, had reportedly gone on to acquire tertiary education and qualifications, with the majority obtaining university degrees. Based on this emerging picture, it is possible to speculate that the majority of School B learners come from homes where both parents are working.
- e) To cap it all, only 7% (12) of the learners reported that they had repeated some of the grades. The age range of School B learners varies from 15 to 19 years over the three grades. Compared to other MSEP schools, School B can be said to have a homogenous learning environment in terms of learners' chronological development.

It is reasonable to assume that these same characteristics apply equally to the rest of the school learner population. Thus the overall learner characteristics appear to be a strength (supportive) with respect to

creating a conducive learning environment for school effectiveness. However, the diversity of the learner backgrounds remains a strong constraint.

5.5 What are the outcomes of the curriculum delivery?

5.5.1 Internal Assessment of performance

The challenges that the school is facing in its efforts to improve the quality of teaching and learning are reflected in the performance outcomes for the school. Table 5.4 shows the 2008 internal assessment results analysis for grades 8 – 11. The general trend appears to have been that the pass rate for each grade decreases as the grade increases. For example, the pass rate for maths at grade 8 level was 80% compared to 53% in grade 10 and 39% in grade 11. The same trend is repeated for Physical Sciences and Life Sciences, with the greatest drop occurring in Physical Science.

Table 5.4: Summary of Internal Assessment Results Analysis for School B

Grade	Subject	No of Learners	No. Pass	No. Fail	Pass Rate %
8	Mathematics	178	142	36	80
	Natural Science	178	159	19	89
9	Mathematics	185	172	13	93
	Natural Science	185	133	52	72
10	Mathematics	171	91	80	53
	Life Science	72	36	36	50
	Physical Science	64	48	16	75
11	Mathematics	102	40	62	39
	Life Science	60	34	26	57
	Physical Science	52	15	37	29

A possible reason for this drop in the quality of passes by grade could be due to poor resolution of the complexity of the subject content matter. Table 5.4 also shows that the number of learners taking these subjects decreases from grade 10 to 11.

5.5.2 Annual Matric Outputs / Trends

Table 5.5: Progressive performance in Mathematics and Science.

	Mathematics	Physical Sciences
2004	42.4% (14/33)	43.9% (18/41)
2005	25.6% (10/39)	46.7% (14/39)
2006	12.5% (4/32)	60% (6/10)
2007	23.4% (11/47)	47.2% (17/36)
2008	75% (50/66)	97% (31/32)

From 2004 – 2007 School B had rather low pass rates in Mathematics, whilst the Physical Science pass rates were also rather low. In 2008, School B experienced very good passes in both Mathematics and Physical Science. Teachers interviewed attributed the success to the lower cognitive demand of the new Mathematics and Physical Science curricula. In 2008, the New Curriculum Statement came into effect, and with it, changes in the assessment of matric examinations. One teacher, who is an examiner for

Mathematics, but teaches both Mathematics and Physical Science explained that the examination memos last year were considerably more lenient than in the past.

5.6 Discussion and recommendations

The situational analysis has revealed that School B has several overarching issues that need to be addressed if learner performance is to be improved. Some of these can be addressed directly by the project, but the others would require systemic intervention from WCED. Table 4.6 provides a summary of these issues in the form of a TOEWS (Threat, Opportunity, Expectations, Weakness and Strength) analysis matrix.

Table 5.6: Summary of over-arching issues pertaining to School B and recommendations

	Socio-cultural Expectations E1: Guardianship – Education level of parents increases learners’ expectations through modeling. E2: Parental Support for learner achievement E3: Development of self-efficacy	Internal Strengths S1: The lower teacher – learner ratios in mathematics and physical science classes S2: SGB involvement in the academic affairs of the school	Internal Weaknesses W1: Large learner catchment area increases cultural diversity within the school W2: Learners from diverse backgrounds need special skills W3: High level of conservatism among older more experienced teachers
External Threats T1: Large catchment area for learners coming into the school – diverse background of learners	ET1. Minimize disruptive cultural influences on learner performance through promotion of high learner expectations. (T1, E2, E3)	ST1. Support individualized learner tutorial programs in the school to cater for learners’ diverse needs. (T1, S2, S1)	WT1. Provide on-site support for teachers to acquire skills for multi-level teaching in existing classrooms (T1, W2, W3) WT2. Encourage cultural integration through life orientation (LO) activities to minimize cultural and racial conflicts (T1, W1)
External Opportunities O1: Narrow age range of learners mean that learners share similar interests O2: Educated parents provide a dynamic and supportive SGB.	EO1. Enhance learners self efficacy through promoting parental models of success (E1, O2)	SO1. Continue promoting SGB support for school development. Support SGB-Management programmes and attend SGB meetings to promote MSEP (O2, S2)	WO1. Promote the increase of parental involvement in the academic affairs of the project through Prize –giving days, advocacy aimed at parents etc. (W1, O2)

Table 5.6 suggests that it is possible to improve the performance of the learners at school B by:

- a) providing motivational influences through parental role modeling. For this strategy to work, parents across the ethnic divide, representing diverse professional / vocational occupations need to be selected to work closely with the learners to provide them with role models they can identify with;
- b) promoting the development of individualized mentorship programmes for learners, to cater for their diverse needs. This will be more effective, if teachers are also provided with on-site continual support to deal with multi-level teaching for diverse classrooms (See Tomlinson, 1999).

5.7 Summary and conclusion

The TOEWS analysis matrix (table 5.6) for School B identifies the main strange attractors (over-arching issues) pertaining to the school. For MSEP to intervene effectively, it will be necessary to pay closer attention to the interaction dynamics, and not just the classroom content knowledge.

The issues identified, which can inform the future of the intervention, include:

Matching the MSEP subject interventions to the school improvement plan, e.g.

- a. Supporting the establishment of afternoon classes as part of the learner program. MSEP can assist by providing support for the teachers and additional staff support to enable more learners to participate in the program (ST1).
- b. Providing professional development support to teachers so that they can teach to individual learner needs. Considering the diversity of the learner backgrounds may include looking at learner developmental needs. Individualized learner support must also include strategies to develop learners' self-efficacy, as this is essential if learners are to overcome the socio-economic barriers to learning, that are endemic within their different backgrounds. (WT1 and WT2)
- c. Supporting the school to extend the academic day by including afternoon and weekend sessions, so that learners spend much more time engaging with their school work. This might actually mean actually seconding ad-hoc staff to assist with the teaching programs.

6.0 Situational analysis of School C

6.1 Introduction

School C was established in 1998 in the Cape Town suburb of Phillipi, to cater for the growing African migrant population (mainly from the Eastern Cape) in the Cape Flats.

The school is administered in circuit 5 of the Metro South Education District and has a community poverty index of 0.70, which means that most of the learners are too poor to afford fees.

6.2 How is the school organized?

6.2.1 Administration structure

The management structure of the school consists of an Executive comprising of the principal and two deputy heads, and the School Management Team made up of subject discipline HODs. The executive is responsible for overall school administration, discipline and finance. The School Management team is responsible for the delivery of the curriculum. Table 6.1 below summarizes the basic school management structure. The school has recently undergone a change of leadership. The previous principal was promoted to the District Circuit team at the end of 2008, and one of his deputies has been appointed to take over. Thus when the situational analysis was being undertaken, the school was still undergoing transition, the effects of which has still to be quantified.

	2004	2005	2006	2007	2008	2009
Staff Est: # Principals	1	1	1	1	1	1
Staff Est: # Deputies	2	2	2	2	2	2
Staff Est: # Dept Heads	4	4	4	4	5	5
Staff Est: # Educators	21	21	20	21	22	22
Staff Est: # Adhoc Posts	2	2	2	2	1	1
Staff Est: Total	30	30	30	29	31	31
Number of Learners	974	984	969	1001	1012	1088

Table 6.1: Summary of management structure for School C.

6.2.2 Financial structure

In 2008, School C was allocated R581.00 per learner. With a population of 1,088 learners, the school had an operating budget of R587,972.00 with which to run the affairs of this school. The learners cannot afford fees, thus the school gets most of its revenue from the Government. Finance is therefore a constraint for the school as the executive cannot afford resources to strengthen its mission. The District Circuit Manager responsible for the school, who also happened to have been one of the pioneer teachers at the school's establishment, mentioned that the school was sited at premises that had poor infrastructure. Thus the school is also limited in terms of space for expansion.

6.2.3 Human Resources

As can be seen from table 6.1, School C has been experiencing a slight increase in both staff and learner numbers since 2000. The school population peaked is also increasing gradually, but expansion is limited by the inadequate facilities mentioned above. Most of the learner population at School C came originally from the Eastern Cape and usually migrate back every holiday. School C has class sizes ranging from 36 (Grade 12) to 51(Grade 8). Large class sizes are a constraint to the school's improvement of performance, as teachers cannot employ individualized teaching methods to match the learning styles of their learners..

6.2.4 Physical Resources

School C has got 24 classrooms, 3 science laboratories, a library, 2 computer laboratories and a school hall. The two science rooms are not furnished, with no gas or water faucets. The computer laboratory is currently being managed by the Khanya Project and has computers that are connected and online. One teacher at the school also revealed, that the school had received some lap-tops for the SMTs, but that these were still locked up.

6.2.5 Policies

School C has developed policies to enable basic school functioning over the years. However, at the time of the research, it was not possible to obtain the policy documents. Juvenile delinquency, punctuality and absenteeism are challenges that the school has to grapple with. Teachers interviewed attributed the problem to the fact that a significant number of learners stay alone, or with working single parents, and are therefore susceptible to influence from gangs.

6.3 Who delivers the curriculum?

6.3.1 Teacher Qualifications

The researcher managed to establish the qualifications of mathematics and science teachers at School C. Table 6.2 highlights the qualifications and experience of the teachers mentioned above.

Characteristic		
Gender		
Male		7
Female		9
Qualifications		
HDE		8
BSc		4
BSc + PGCE		4
Experience		
Less than 5 Years		4
Between 5 and 10 Years		9
More than 10 years		3

Table 6.2: Characteristics of mathematics, science and life orientation teachers

The table shows that most of the maths, science and LO teachers at School C qualified after 1998 . The teachers can therefore be expected to be familiar with the OBE curriculum. The majority of the teachers have adequate (M+4) teacher qualifications and have over the years acquired additional qualifications through the Advanced Certificate in Education (ACE). Documents also show that most of the teachers are actually teaching only one subject, but at different grade levels. School C has also managed to secure the services of substitute teachers through the SGB.

6.3.2 Departmental Organisation of Teaching

School C's curriculum is organized around five discipline departments (Learning Areas): These are Mathematics and Physical Sciences; Languages; Life Sciences, Natural Sciences and Technology; Social Sciences and Commerce. The HODs of these learning areas are also members of the school management team. School Management Teams meet weekly to keep abreast of the day to day developments. Formal, whole staff meetings take place at least twice a quarter.

6.4 How is the curriculum delivered and for whom?

6.4.1 Cohesion of purpose

The mission of the school focuses on the improvement of performance. The school improvement plan identifies the strengthening of school management and leadership; the quality of teaching and learning and learner improvement, as the core focus areas. The main constraint, also identified towards achieving this goal, is the lack of adequate funding to provide resources for these activities. The school has identified the EMDC, and NGOs (including MSEP) as possible service providers. Over the years, School C has developed cordial relationships with various NGOs and other organizations that provide services for teachers and learners after school.

6.4.2 Curriculum Planning

School C experienced delays in implementing the first term's work because the WCED had not provided pace-setters by the first week of February. For this reason, MSEP was unable to carry out scheduled classroom observations in mathematics until the second week of February. The official medium of instruction is English, but in both science lessons observed teachers used extensive code-switching with isiXhosa, which is the mother tongue of the majority of learners and teachers in the school. The use of code-switching was not followed up by requesting learners to re-conceptualize scientific concepts in English. If this is the regular practice at the school, then the learners do not acquire the Bernstein's *vertical discourse* (Bernstein, 2000) that enables them to communicate and understand the language of the scientific discourse.

6.4.3 Time Tabling, Periods

By the beginning of February, the time tables had been finalized. The length of each period at School C is 45 minutes long. As there are no double periods, it is difficult for teachers to include practical work sessions within the course of a normal lesson and so teachers reported that they seldom do practical work with learners during the course of the lessons. Learners carry out investigations during their own

time (after lessons). The lack of provision for adequate practical work is considered by science teachers as a constraint that limits their effectiveness.

6.4.4 Learner Characteristics

School C has a learner population of 1024 learners (grades 8-12). Of these learners, 568 learners are in the FET phase (Grades 10 – 12).

Table 6.3: Summary of School C Learner Characteristics

Characteristic	Number of Learners
Gender	
Male	58
Female	107
Province of Primary Schooling	
Eastern Cape	29
Western Cape	136
Guardian	
Both Parents	89
Father	4
Mother	38
Siblings	4
Alone	1
Relatives / other	29
Highest Qualification of Father	
Unknown	57
No formal education	10
Primary (up to Grade 9)	45
High School drop out	22
Matriculation	28
College / Professional qualification / Diploma	2
University	1
Highest Qualification of Mother	
Unknown	10
No formal education	8
Primary (up to Grade 9)	60
High School Drop Out	43
Matriculation	42
College / Professional qualification / Diploma	1
University	1
Progression	
Repeated a grade	52
Straight progression	113
Grade	
Grade 10	58
Grade 11	84
Grade 12	23
Total Applicants	165

345 learners in Grades 10 – 12 are taking both Mathematics and Physical Sciences and of these learners, 165 applied to participate in the learner component of MSEP. The learner characteristics for School C will be drawn from these learners. Table 6.3 provides basic information about the learners. The learners who applied to be on the program constitute 48% of learners taking Mathematics and Science at the school, and roughly 16% of the total learners in the school.

The learner characteristics above highlight the following issues pertaining to learners taking mathematics and science at the school.

- a) Roughly 17% of the learners did their primary education in other provinces. This is a significant issue, because teachers at School C and other MSEP schools have claimed that the quality of baseline knowledge that learners bring with them to the school is affected by the diversity of the primary school backgrounds of their learners.
- b) 46% (76) of the learners are not living with both biological parents, and of this number, 34 (out of 76) live with relatives and siblings or alone. This is an issue of concern, especially when considering the locus of control and guidance for these learners. Without parental authority, learners are vulnerable to external control from peers and others, which might not always be aligned with school objectives. This is the essence of Bandura's social cognitive theory (See Bandura , 1991)
- c) 35% (57/165) of the learners did not know their father's academic level. Whilst 46% (77/165) of the learners also reported that their fathers had not matriculated. These learners are academic pioneers in their families and face the challenge that their fathers might not always appreciate the demands of modern schooling, and thus might not be able to provide them with the support that they need.
- d) On the other hand, only 10 learners (6%) of the 165 learners reported that they did not know their mother's educational level, and 111 (72%) of the remaining 155 learners reported that their mothers had not matriculated. This is again an issue of concern, as mentioned in (c) above.
- e) To cap it all, almost 32% (52) of the learners reported that they had repeated some of the grades. This fact is also borne out by the observation that the learners' ages range vary from 15 to 21 within the three grades – a variation of six years. This variation and the points raised in (a) above pose problems for teachers because their classrooms are academically heterogenous.

It is reasonable to assume that these same characteristics apply equally to the rest of the school learner population. Thus the learner characteristics provide major challenges for teachers in the quest to improve the quality of education at the school.

6.5 What are the outcomes of the curriculum delivery?

6.5.1 Internal Assessment of performance

The challenges that the school is facing in its efforts to improve the quality of teaching and learning are reflected in the performance outcomes for the school. Table 6.4 shows the 2008 internal assessment results analysis for grades 9 – 11. Even where the majority of learners passed, the average pass rates

were very low. One reason for this observation was that the mark ranges were too wide, for example, from 16 % to 66%.

Table 6.4: Summary of Internal Assessment Results Analysis for School C

Grade	Subject	No of Learners	No. Pass	No. Fail	Av. Mark %
9	Mathematics	227	165	62	42
	Natural Science	227	164	63	47
10	Mathematics	218	145	73	31
	Life Science	133	101	32	39
	Physical Science	133	51	82	42
11	Mathematics	127	55	72	34
	Life Science	114	81	33	45
	Physical Science	94	34	60	31

Apart from the fact that the average marks for mathematics and physical science subjects at FET level, are very low, table 6.4 also shows that the number of learners taking these subjects decreases from grade 10 to 11. The low internal results and issues highlighted in the preceding sections underline the need for an intervention targeting both teachers and learners, if learner performance is to be consistently improved.

6.5.2 Annual Matric Outputs / Trends

Table 6.5: Progressive performance in Maths and Science.

	Mathematics	Physical Sciences
2004	50% (7/14)	57% (4/7)
2005	43% (6/14)	67% (6/9)
2006	55% (5/9)	100% (7/7)
2007	30% (3/10)	57% (4/7)
2008	54% (43/79)	38% (20/52)

The table shows that School C's matric performance has been quite erratic over the years, with the lowest Mathematics Matric pass rate occurring in 2007. In Physical Science, 2008 was the worst performance. Teachers could not shed any light on reasons for this low performance, as the current HOD was only recently appointed.

6.6 Discussion and recommendations

The situational analysis has revealed that School C has several overarching issues that need to be addressed if learner performance is to be improved. Some of these can be addressed directly by the project, but the others would require systemic intervention from WCED. Table 6.6 provides a summary of these issues in the form of a matrix.

Table 6.6: Summary of over-arching issues pertaining to School C

	Socio-cultural Expectations E1: Guardianship E2: Social Support for learner achievement E3: Development of self-efficacy	Internal Strengths S1: Community (NGOs) and SGB involvement in assisting teachers and learners. S2: Involvement of EMDC in providing management support for the school	Internal Weaknesses W1: Inadequate physical resources and books constrain the delivery of the curriculum W2: Large numbers of repeaters in the school's grades weakens cohesion of purpose. W3: Learners from diverse backgrounds need special skills W4: High Teacher-learner ratio in classes
External Threats T1: Inadequate infrastructure (Library, Science Labs) T2: Inadequate finance to support the school's improvement plan	1. Most learners live with either single parents or guardians and thus are unable to raise the required funds to pay for renovations (T1, E1) Support the school's fundraising efforts through lobbying WCED. 2. Support the school's improvement plan through targeted training support for Management and subject co-ordinators (Bursaries?)(T2)	1. Promote use of afternoon classes to provide individualized instruction to learners. MSEP could consider providing ad-hoc staff (S1, T2) 2. Align MSEP intervention to the school's identified needs so as to maximize school development.	1. Provide on-site support for teachers to acquire skills for multi-level teaching in existing classrooms 2. Learners come from predominantly poor families and cannot afford to pay fees or financial support for renovations – support executive to fund-raise. (Lobby WCED) T1, W1,
External Opportunities O1: The change of leadership at School C has placed the school in a state of flux, with new leadership opportunities O2: Although school policies on absenteeism, truancy and discipline do exist, they are not explicit and cohesion of purpose is not evident.	1. Lack of parental guidance can lead to lowered self efficacy and susceptibility to peer influence – Increase learner and peer support at school through the use of mentors. (E2, O1) 2. Provide support and personnel for afternoon classes and thus enable learners to spend more time on academic engagement within the school. (E2, O2)	1. Encourage the school to Involve the community and SGB in learner counseling and other school activities. (O2,S2) 2. The leadership at School C is in transition and needs to be supported carefully to ensure that the system does not collapse on itself. There is need to develop a leadership mentorship program for School C (O2, S2)	1. Support the development of a multi-grade / multi-level skills training for teachers to enable them to respond adequately to learners needs. (O1, W3)

6.7 Summary and conclusion

Table 6.6 shows a TOEWS analysis matrix for School C. The matrix identifies the main strange attractors (over-arching issues) pertaining to School C. Throughout the preceding discussions, it was highlighted that apart from the infrastructural and physical components of the school system, the interrelationships between the sub-components are also crucial for the effective operation of the school system.

The issues identified which can inform the future of the intervention include:

- i) Matching the MSEP subject interventions to the school improvement plan, e.g.
 - a) Supporting the establishment of afternoon classes as part of the learner program. MSEP can assist by providing support for the teachers and additional staff support to enable more learners to participate in the program.
 - b) Providing professional development support to teachers so that they can teach to individual learner needs. Considering the diversity of the learner backgrounds and age ranges, this may also include looking at learner developmental needs. It must also include strategies to develop learners' self-efficacy, as this is essential if learners are to overcome the socio-economic barriers to learning that are endemic within their society.
 - c) Supporting the school to extend the academic day by including afternoon and weekend sessions, so that learners spend much more time engaging with their school work. This might actually mean seconding ad-hoc staff to assist with the teaching programs.
- ii) Supporting a smooth transition of the school management through a mentorship program for the executive and the SMTs.
- iii) Involving other NGOs to assist in developing capacity at the school
- iv) The teachers reported that lack of laboratory resources constrain the way they teach. One way of minimizing this constraint would be to lobby the department to provide laboratory facilities and resources to the school. In the meantime, through the MSEP learner component, students could be supported to attend weekend practical demonstrations at the university.

7.0 Situational analysis of School D

7.1 Introduction

School D was established in the Cape Town suburb of Mitchell's Plain, on the Cape Flats, to cater for the coloured population. Most of School D's learner population comes from within the hinterland in Mitchell's Plain. The school is administered in circuit 2 of the Metro South Education District.

7.2 How is the school organized?

7.2.1 Administration structure

The management structure of the school consists of an Executive comprising of the principal and two deputy heads, and the School Management Team made up of Learning Area HODs. The executive is responsible for overall school administration, discipline and Curriculum Management. The School Management team is responsible for the delivery of the curriculum. The School Management posts are organized around Learning areas. Table 7.1 below summarizes the basic school management structure.

Table 7.1: Summary of management structure for School D .

	2004	2005	2006	2007	2008	2009
Staff Est: # Principals	1	1	1	1	1	1
Staff Est: # Deputies	2	2	2	2	2	2
Staff Est: # Dept Heads	4	4	4	5	5	5
Staff Est: # Educators	33	34	35	36	38	38
Staff Est: # Adhoc Posts	2	3	3	4	2	2
Staff Est: Total	35	37	38	40	40	40
Number of Learners	980	988	1000	1,206	1,190	1,202

7.2.2 Financial structure

School D High School is a section 21 school. The school manages its own financial affairs and the SGB has made a post available for a school accountant. The school appears to have a vibrant SGB.

7.2.3 Human Resources

As can be seen from table 7.1, School D has been experiencing a steady increase in both staff and learner numbers since 2004. The school has also diversified and is a satellite centre for post matric colleges that offer a number of post matric qualifications. Recently, the school benefited from a huge Science Centre project provided by some NGOs. Class sizes range from between 12 and 25 learners. Lower teacher to learner ratios are a strength to the school as teachers can pay more attention to individual learner needs.

7.2.4 Physical Resources

School D is a very well resourced school, with more than 40 classrooms, several Biology, Physics and Chemistry laboratories, a library, a reading/resource room, computer laboratories and workshops. The classrooms have study desks and benches. All the science laboratories are fully functional. The library does not have any books because the room had to be moved from the Science Centre to the main school. However, the books have all been catalogued on the Dewey system and can be lent out. One of the computer laboratories is currently being managed by the Khanya Project and has computers that are connected and online.

7.2.5 Policies

School D has developed policies to enable basic school functioning over the years. However, at the time of the research, it was not possible to obtain the policy documents. Teachers interviewed mentioned that the school had policies on truancy, punctuality, gangsterism and drug abuse. The SGB plays a very pro-active role in assisting the school to address these problems.

7.3 Who delivers the curriculum?

7.3.1 Teacher Qualifications

The researcher was unable to establish the qualifications of most of the teachers at School D, save for those involved in teaching Mathematics, Science and Life Sciences and Life Orientation subjects. The reason for this gap in information was that the school management and teachers believed MSEP to be mainly interested in these subjects and therefore did not supply information they deemed to be irrelevant. Table 7.2 highlights the qualifications and experience of the teachers mentioned above.

Table 7.2: Characteristics of mathematics, science and life orientation teachers

Characteristic	
Gender	
Male	8
Female	10
Qualifications	
HDE	7
BSc	5
BSc + PGCE	6
Experience	
Less than 5 Years	5
Between 5 and 10 Years	6
More than 10 years	7

Most of the mathematics, science and LO teachers at School D qualified after 1998 . The teachers can therefore be expected to be familiar with the OBE curriculum. The majority of the teachers have adequate (M+4) teacher qualifications and have over the years acquired additional qualifications

through the Advanced Certificate in Education (ACE). Documents also show that most of the teachers are actually teaching only one subject, but at different grade levels.

7.3.2 Departmental Organisation of Teaching

School D's curriculum is organized around individual subjects. The HODs of these learning areas are also members of the school management team. School Management Teams meet weekly to keep abreast of the day to day developments. Formal, whole staff meetings take place at least twice a quarter, but teachers attend a briefing everyday.

7.4 How is the curriculum delivered and for whom?

7.4.1 Cohesion of purpose

The mission of the school focuses on the quality of teaching and learning as its central function. The school improvement plan also emphasizes focus areas that deal with improving quality of teaching and learning, and learner achievement as priority areas for development. To this end, the school has identified the deepening and enhancement of subject co-ordinators' content knowledge, and the provision of additional (afternoon) classes as possible interventions towards improving curriculum quality. They have also suggested measures to improve learner performance, including remediation and individual tutoring.

7.4.2 Curriculum Planning

Though the WCED delayed in delivering pace-setters to the school, School D was fully operational by the first week of February. The school developed departmental pace setters which they could use in the meantime. These were based on the examination guidelines provided by the department last year, and last year's pace setters. The official media of instruction are English and Afrikaans and science lessons are taught using both media.

7.4.3 Time Tabling, Periods

By the beginning of February, the time tables had been finalized. The length of each period at School D is 60 minutes long. Classes are allocated per teacher, so teachers can plan ahead in their classrooms. This also means that practical sessions can be planned well in advance. The school has split Physical Science into Physics and Chemistry subjects starting from Grade 10. The school has also started a program to support learners as they prepare their scientific investigations. Learners carry out investigations during their own time (after lessons). Two teachers whose lessons were observed reported that they still had problems with planning the curriculum in such a way as to adequately cover the work planned for the year. The researcher also noted that the problem of pacing is identified as a core problem to be addressed in the school improvement plan.

7.4.4 Learner Characteristics

School D has a learner population of 1202 learners (grades 8-12). Of these learners, 608 learners are in the FET phase (Grades 10 – 12). 478 learners in Grades 10 – 12 are taking both Mathematics and Physical Sciences and of these learners, 139 applied to participate in the learner component of MSEP.

The learner characteristics for School D will be drawn from these learners. Table 7.3 provides basic information about the learners.

The learners who applied to be on the program constitute 29% of learners taking Mathematics and Science at the school, and roughly 12% of the total learners in the school.

Table 7.3: Summary of School D Learner Characteristics

Characteristic	Number of Learners
Gender	
Male	45
Female	94
Province of Primary Schooling	
Western Cape	139
Guardian	
Both Parents	124
Father	1
Mother	6
Relatives / other	8
Highest Qualification of Father	
Unknown	4
No formal education	5
Primary (up to Grade 9)	35
High School drop out	41
Matriculation	27
College / Professional qualification / Diploma	21
University	6
Highest Qualification of Mother	
Unknown	2
No formal education	4
Primary (up to Grade 9)	41
High School Drop Out	46
Matriculation	28
College / Professional qualification / Diploma	14
University	4
Progression	
Repeated a grade	9
Straight progression	130
Grade	
Grade 10	66
Grade 11	40
Grade 12	33
Total Applicants	139

The learner characteristics above highlight the following issues pertaining to learners taking mathematics and science at the school.

- a) None of the learners did their primary education in other provinces. School D has a well defined network of 10 feeder schools, all located within Mitchell’s Plain. This is a significant issue, because the learners are a homogenous group, with the same geo-social subculture.
- b) The majority (89%) of the learners are staying with both parents. They have access to parental support and guidance from both parents. This support was identified by Bandura (1999) as being crucial in the development of learners self efficacy.
- c) Only 3% (4/139) of the learners did not know their father’s academic level. The vast majority of the remainder, (65/139) however reported that their fathers had not matriculated. Similarly, only 2 of the 139 learners reported that they did not know their mother’s educational level, and 91 (66%) of the remaining 137 learners reported that their mothers had not matriculated.
- d) To cap it all, only 9 of the learners reported that they had repeated some of the grades. This assertion is also borne out by the observation that the learners’ ages range vary from 15 to 19 within the three grades – a variation of four years. This variation is chronologically homogenous. A point that will be re-visited in the discussion.

It is reasonable to assume that these same characteristics apply equally to the rest of the school learner population.

7.5 What are the outcomes of the curriculum delivery?

7.5.1 Internal Assessment of performance

The challenges that the school is facing in its efforts to improve the quality of teaching and learning are reflected in the performance outcomes for the school. Table 7.4 shows the 2008 internal assessment results analysis for grades 10 – 11. The research team was unable to access data for the Grades 8 and 9 internal assessment results. The table seems to support similar findings from the other schools that generally the higher Grades are doing less well. This could be due to the fact that teachers are failing to teach to the required standard.

Table 7.4: Summary of Internal Assessment Results Analysis for School D

Grade	Subject	No of Learners	No. Pass	No. Fail	Av. Mark %
10	Mathematics	132	53	79	44
	Life Science	94	28	66	34
	Physical Science	36	21	15	42
11	Mathematics	70	36	34	39
	Life Science	68	41	27	45
	Physical Science	43	10	33	34

The data average marks in table 7.4 shows that the majority of the learners at School D are struggling to pass virtually all the three subjects. The measures suggested by the school, such as introducing a seventh period, might help to improve the marks, but there is need for focused work with learners, if significant gains are to be realized.

7.5.2 2008 Matric output

In 2008, School D had a modest pass rate in both Mathematics and Physical Science. In Mathematics out of the 57 learners who sat the exam, 25 (44%) passed with 40% and above (i.e. symbol C and above). In Physical Science, the learners fared much better. 17 of the 33 learners (52%) who sat the examination passed with a grade symbol C and above (40% and above). The Science HOD explained that in 2008 the learners wrote a completely new examination that was intermediate between the old Higher Grade and Standard Grade systems. As such, he felt, the learners were better prepared in Physical Science. He however feels that the more can still be done to increase the number of passes.

7.6 Discussion and recommendations

The situational analysis has revealed that School D several overarching issues that need to be addressed if learner performance is to be improved. Some of these can be addressed directly by the project, but the others would require systemic intervention from WCED. Table 7.6 provides a summary of these issues in the form of a matrix.

Table 7.6: Summary of over-arching issues pertaining to School D

	Socio-cultural Expectations E1: Guardianship E2: Social Support for learner achievement E3: Development of self-efficacy	Internal Strengths S1: The lower teacher – learner ratios in mathematics and physical science classes S2: Community (NGOs) and youth involvement in counseling learners.	Internal Weaknesses W1: School Improvement Plan identified the need to empower teachers to cater for learners different learning styles
External Threats T1: Drug abuse, truancy and gangsterism threaten to disrupt the smooth running of the school	1. Support the school's improvement plan through targeted training support for Management and subject co-ordinators (Bursaries?)(T2)	1. Canvass the support of other SEEDS partners eg GOLD Peer Education, to assist in providing counseling on drug abuse (S2, T1)	1. Provide on-site support for teachers to acquire skills for multi-level teaching in existing classrooms (W1)
External Opportunities O1: Although school policies on absenteeism, truancy and discipline do exist, they are not explicit and cohesion of purpose is not evident.	1. Provide support and personnel for afternoon classes and thus enable learners to spend more time on academic engagement. (E2, O1)	1. Involve the community and SGB in learner counseling and other school activities. (O2,S2)	1. Support the development of a multi-grade / multi-level skills training for teachers to enable them to respond adequately to learners needs. (O1, W3)

7.7 Summary and conclusion

Table 7.6 shows a TOEWS analysis matrix for School D. The matrix identifies the main strange attractors (over-arching issues) pertaining to the school. Throughout the preceding discussions, it was highlighted

that apart from the infrastructural and physical components of the school system, the interrelationships between the sub-components are also crucial for the effective operation of the school system.

The issues identified which can inform the future of the intervention include matching the MSEP subject interventions to the school improvement plan, e.g.

- a. Supporting the establishment of afternoon classes as part of the learner program. MSEP can assist by providing support for the teachers and additional staff support to enable more learners to participate in the program.
- b. Providing professional development support to teachers so that they can teach to individual learner needs. Considering the diversity of the learner backgrounds and age ranges, this may also include looking at learner developmental needs. It must also include strategies to develop learners self-efficacy, as this is essential if learners are to overcome the socio-economic barriers to learning, that are endemic within their society.
- c. Supporting the school to extend the academic day by including afternoon and weekend sessions, so that learners spend much more time engaging with their school work. This might actually mean actually seconding ad-hoc staff to assist with the teaching programs.

8.0 Situational analysis of School E

8.1 Introduction

School E is located in Mowbray. The school is administered in circuit 1 of the Metro Central Education District and has a community poverty index of 0.65, which means that the learners pay subsidized fees.

8.2 How is the school organized?

8.2.1 Administration structure

The management structure of the school consists of an Executive comprising of the acting principal and two deputy heads, and the School Management Team made up of subject discipline HODs. The executive is responsible for overall school administration, discipline and finance. The School Management team is responsible for the delivery of the curriculum. Table 8.1 below summarizes the basic school management structure. The school is in a transitory leadership and has been in this state for at least two years.

	2004	2005	2006	2007	2008	2009
Staff Est: # Principals	1	1	1	1	1	1
Staff Est: # Deputies	2	2	2	2	2	2
Staff Est: # Dept Heads	4	4	4	5	5	5
Staff Est: # Educators	23	22	19	20	19	24
Staff Est: # Adhoc Posts	2	2	1	1	1	2
Staff Est: Total	33	32	27	28	33	34
Number of Learners	1,083	1,060	947	889	1084	1,128

Table 8.1: Summary of management structure for School E.

8.2.2 Financial structure

In 2008, School E was allocated R457.00 per learner. With a population of 1,084 learners, the school had an operating budget of R495,388.00 with which to run the affairs of this school. The learners paid a subsidized fee of R320.00 per year. Finance is therefore a constraint for the school as the executive cannot afford resources to strengthen its mission. They have to rely on donations for essential resources.

8.2.3 Human Resources

As can be seen from table 8.1, School E's staffing situation have been relatively stable for the past five years. The school population dropped to its lowest in 2007 and has since been rising. In 2009, the teacher to learner ratio is currently 1:33. However, in reality this ratio is much higher, as both the

Executive and School Management teams have reduced teaching loads to allow for school administration duties. Class sizes range from between 30 and 42.

8.2.4 Physical Resources

School E has got 23 classrooms, 2 science laboratories, and a computer laboratory. 12 of the classrooms are pre-fabricated and they are in a bad shape. At least four of the pre-fabricated structures that were inspected had deep potholes on the floor. In some cases, these were covered with cardboard. The walls had rusted and were leaky. The classrooms have study desks and benches, but they look dilapidated and in poor shape. The two science labs have been recently renovated. The library room has been converted into a khanya lab, and the library books are stored in cupboards. The computer laboratory is currently being managed by the Khanya Project and has computers that are connected and online. The school depends on donor funding to carry out major infrastructure renovations. The major renovations required to provide a conducive physical environment for the school are not even mentioned in the 2008/9 school improvement plan. The inability to raise funding is therefore a threat to the success of the school.

The school is also located close to two highways and subjected to potentially disruptive high noise levels. The principal has admitted that the noise levels from the truckers and construction equipment has been quite disruptive for the school.

8.2.4 Policies

School E has developed policies to enable basic school functioning over the years. The school has also identified possible partners to assist with discipline and other counseling services. An example is the relationship with the Mowbray Peace program. The school has also developed a learner code of conduct which is currently under review.

School E currently faces a huge challenge in terms of learner punctuality to school. The principal explained that the school has a wide catchment area. Their learners, come from Khayelitsha, Langa, Gugulethu and Bellville and use public transport to come to school, so sometimes they are late – not intentionally, but they will always be those who take advantage of the situation. The principal mentioned that the school is looking into what can be done to reduce the punctuality problem.

8.3 Who delivers the curriculum?

8.3.1 Teacher Qualifications

The researcher was unable to establish the qualifications of most of the teachers at School E, save for those involved in teaching Mathematics, Science and Life Sciences and Life Orientation subjects. The reason for this gap in information was that the school management and teachers believed MSEP to be mainly interested in these subjects and therefore did not supply information they deemed to be irrelevant. Table 8.2 highlights the qualifications and experience of the teachers mentioned above. The table shows that most of the mathematics, science and LO teachers at School E qualified after 1998. The teachers can therefore be expected to be familiar with the OBE curriculum.

Table 8.2: Characteristics of mathematics, science and life orientation teachers

Characteristic		
Gender		
	Male	15
	Female	6
Qualifications		
	HDE	4
	BSc	14
	BSc + PGCE	3
Experience		
	Less than 5 Years	9
	Between 5 and 10 Years	6
	More than 10 years	6

The majority of the teachers have adequate (M+4) teacher qualifications and have over the years acquired additional qualifications through the Advanced Certificate in Education (ACE). Documents also show that most of the teachers are actually teaching only one subject, but at different grade levels.

8.3.2 Departmental Organisation of Teaching

School E's curriculum is organized around five discipline departments (Learning Areas): These are Mathematics, Languages, Sciences, Life Orientation, Geography. The HODs of these learning areas are also members of the school management team. School Management Teams meet weekly to keep abreast of the day to day developments. Formal, whole staff meetings take place at least twice a quarter. However, regular briefings with staff take place everyday.

8.4 How is the curriculum delivered and for whom?

8.4.1 Cohesion of purpose

The mission of the school focuses on the quality of teaching and learning as its central function. The school improvement plan also emphasizes focus areas that deal with improving quality of teaching and learning, and learner achievement as priority areas for development. To this end, the school has identified the deepening and enhancement of subject heads content knowledge, and the provision of additional (afternoon) classes as possible interventions towards improving curriculum quality. The main constraint, also identified towards achieving this goal, is the lack of adequate funding to provide resources for these activities.

8.4.2 Curriculum Planning

School E was fully operational by the first week of February. One of the HODs mentioned to the Science MSEP Team that they needed assistance with the development and planning using pace-setters, and they were able to access some assistance from MSEP. The official medium of instruction is English, but in both science lessons observed teachers used extensive code-switching with isiXhosa, which is the mother tongue of the majority of learners and teachers in the school.

8.4.3 Time Tabling, Periods

By the beginning of February, the time tables had been finalized. The length of each period at School E is 50 minutes long. The Science Department has also approached MSEP to assist with planning for practical work and investigations. Several joint lessons have been held with the MSEP contact person. Site visit field reports from MSEP Science education specialists have portrayed School E teachers as very proactive and eager to learn.

8.4.4 Learner Characteristics

Table 8.3: Summary of School E Learner Characteristics

Characteristic	Number of Learners
Gender	
Male	92
Female	115
Province of Primary Schooling	
Gauteng	2
Eastern Cape	45
Western Cape	159
Free State	1
Guardian	
Both Parents	123
Mother	28
Siblings	11
Alone	1
Relatives / other	44
Highest Qualification of Father	
Unknown	58
No formal education	7
Primary (up to Grade 9)	25
High School drop out	39
Matriculation	63
College / Professional qualification / Diploma	7
University	8
Highest Qualification of Mother	
Unknown	5
No formal education	5
Primary (up to Grade 9)	30
High School Drop Out	77
Matriculation	69
College / Professional qualification / Diploma	13
University	8
Progression	
Repeated a grade	74
Straight progression	133
Grade	
Grade 10	75
Grade 11	70
Grade 12	62
Total Applicants	207

School E has a learner population of 1128 learners (grades 8-12). Of these learners, 613 learners are in the FET phase (Grades 10 – 12). 329 learners in Grades 10 – 12 are taking both Mathematics and Physical Sciences and of these learners, 207 applied to participate in the learner component of MSEP. The learner characteristics for School E are shown in Table 8.3.

The learners who applied to be on the program constitute 63% of learners taking Mathematics and Science at the school, and roughly 18% of the total learners in the school. The learner characteristics above highlight the following issues pertaining to learners taking mathematics and science at the school.

- a) Roughly 23% of the learners did their primary education in other provinces. This is a significant issue, because teachers at School E and other MSEP schools have identified the fact that some of their learners come from diverse primary backgrounds has a bearing on the quality of baseline knowledge they bring to the school.
- b) More than two fifths (84) of the learners are not living with both biological parents, and of this number, 56 (out of 84) live with relatives and siblings. Informal talks with some learners from the same school revealed that they live with their grandparents (mostly grandmom). This is an issue of concern, especially when considering the locus of control and guidance for these learners. Without parental authority, learners are vulnerable to external control from peers and others, which might not always be aligned with school objectives.
- c) 28% (58/207) of the learners did not know their father's academic level. More than one third (71) of the learners reported that their father did not matriculate. These learners are academic pioneers in their families and face the challenge that their fathers might not always appreciate the demands of modern schooling, and thus might not be able to provide them with the support that they need.
- d) Similarly, 5 (2%) of the 207 learners reported that they did not know their mother's educational level, and 112 (55%) of the remaining 202 learners reported that their mothers had not matriculated. This is again an issue of concern, as mentioned in (c) above.
- e) To cap it all, almost 36% (74) of the learners reported that they had repeated some of the grades. This fact is also borne out by the observation that the learners' ages range vary from 14 to 22 within the three grades – a variation of eight years. This variation and the points raised in (a) above pose problems for teachers because their classrooms are academically heterogenous.

It is reasonable to assume that these same characteristics apply equally to the rest of the school learner population. Thus the learner characteristics provide major challenges for teachers in the quest to improve the quality of education at the school.

8.5 What are the outcomes of the curriculum delivery?

8.5.1 Internal Assessment of performance

The challenges that the school is facing in its efforts to improve the quality of teaching and learning are reflected in the performance outcomes for the school. Table 8.4 shows the 2008 internal assessment results analysis for grades 8 – 11.

Table 8.4: Summary of Internal Assessment Results Analysis for School E

Grade	Subject	No of Learners	No. Pass	No. Fail	Pass Rate %
8	Mathematics	218	78	140	36
	Natural Science	218	209	9	96
9	Mathematics	220	135	85	61
	Natural Science	220	133	87	60
10	Mathematics	256	82	170	32
	Life Science	144	82	62	57
	Physical Science	143	81	62	57
11	Mathematics	225	85	140	38
	Life Science	129	84	45	65
	Physical Science	225	104	121	46

Table 8.4 shows that there is a progressive decrease in the number of learners taking Science and Mathematics as the Grade Increases, especially at FET level. As noted earlier in table 8.3, School E has a large number of repeating learners. At the lower levels, (Grades 9 and 10), repeats clog up the system, so that more learners, and therefore, class numbers increase in the lower grades. This results in teachers being overwhelmed and, considering the diversity of needs that these learners bring, as indicated in section 8.4 above, the quality of curriculum delivery is compromised.

8.5.1 Annual Matric Outputs / Trends

Table 8.5: Progressive performance in Maths and Science.

	Mathematics	Physical Sciences
2004	32% (8/25)	14% (2/14)
2005	67% (8/12)	100% (9/9)
2006	50% (8/16)	70% (7/10)
2007	19% (4/21)	91% (10/11)
2008	57% (72/126)	83% (53/64)

From 2004 – 2006 School E's performance over the years has been rather erratic, even given the small numbers of learners taking Mathematics and Science. School E is expected to continue experiencing challenges in mathematics especially as they are required by the Dinaledi project to enroll most of their learners in maths as opposed to Maths Literacy.

8.6 Discussion and recommendations

The situational analysis has revealed that School E high school several overarching issues that need to be addressed if learner performance is to be improved. Some of these can be addressed directly by the project, but the others would require systemic intervention from WCED. Table 8.6 provides a summary of these issues in the form of a matrix.

Table 8.6: Summary of over-arching issues pertaining to School E

	Socio-cultural Expectations E1: Guardianship E2: Social Support for learner achievement E3: Development of self-efficacy	Internal Strengths S1: Community (NGOs) and youth involvement in counseling learners.	Internal Weaknesses W1: Inadequate physical resources and books constrain the delivery of the curriculum W2: Large numbers of repeaters in the school's grades weakens cohesion of purpose. W3: Learners from diverse backgrounds need special skills
External Threats T1: Dilapidated infrastructure T2: Inadequate finance to support the school's improvement plan.	1. Support the school's improvement plan through targeted training support for Management and subject co-ordinators (Bursaries?)(T2)	Canvass support to involve other NGOs such as GOLD and EMEP to provide more supporting services to learners, and to turn the school into a hub of learning.	1. Provide on-site support for teachers to acquire skills for multi-level teaching in existing classrooms 2. Learners come from predominantly poor families and cannot afford to pay fees or financial support for renovations – support executive to fund-raise. (Lobby WCED) T1, W1,
External Opportunities O1: The transitional leadership at School E is quite proactive and ready to accept innovative ideas	1. Most learners live with either single parents or guardians and thus are unable to access adequate support for their studies. Lack of parental guidance can lead to lowered self efficacy and susceptibility to peer influence – Increase learner and peer support at school. (E2, O1) 2. Provide support and personnel for afternoon classes and thus enable learners to spend more time on academic engagement. (E2, O2)	1. Involve the community and SGB in learner counseling and other school activities. (O2,S2) 2. The leadership at School E is in transition and needs to be supported carefully to ensure that the system does not collapse on itself. There is need to develop a leadership mentorship program for School E (O2, S2)	1. Support the development of a multi-grade / multi-level skills training for teachers to enable them to respond adequately to learners needs. (O1, W3)

8.7 Summary and conclusion

Table 8.6 shows a TOEWS analysis matrix for School E. The matrix identifies the main strange attractors (over-arching issues) pertaining to School E. Throughout the preceding discussions, it was highlighted that apart from the infrastructural and physical components of the school system, the interrelationships between the sub-components are also crucial for the effective operation of the school system.

The issues identified which can inform the future of the intervention include:

Matching the MSEP subject interventions to the school improvement plan, e.g.

- Supporting the establishment of afternoon classes as part of the learner program. MSEP can assist by providing support for the teachers and additional staff support to enable more learners to participate in the program.
- Providing professional development support to teachers so that they can teach to individual learner needs. Considering the diversity of the learner backgrounds and age ranges, this may also include looking at learner developmental needs. It must also include strategies to develop learners self-efficacy, as this is essential if learners are to overcome the socio-economic barriers to learning, that are endemic within their society.
- Supporting the school to extend the academic day by including afternoon and weekend sessions, so that learners spend much more time engaging with their school work. This might actually mean actually seconding ad-hoc staff to assist with the teaching programs .
- Supporting a smooth transition of the school management through a mentorship program for the executive and the SMTs.
- Canvassing support for other partners and NGOs to assist the school with counseling of learners and or infrastructural development.

9.0 Cross – School Issues arising from the situational analysis

9.1 Introduction

The situational analysis described in sections 3 to 8 above have revealed some critical issues pertaining to the schools as individual systems, and some cutting across the different schools. The author reiterates that understanding these critical factors strange attractors will help MSEP to bring about change. Most intervention projects fail because they fail to appreciate the relationship between the strange attractors and systemic development. Focusing on development whilst ignoring these factors will only result in short term unsustainable gains. Strange attractors act like leashes that anchor the system and give it limited leverage. Small changes are possible around the length of the leash, but to have lasting change, one has to stretch the leash to its elastic limit and thus break free. In the same manner, working with interventions that directly address system components without seeking to change the fundamentals, will only provide short term relief.

This section attempts to address this challenge and suggest how MSEP changes can be made more lasting. Section 9.2 reviews the different strange attractors that have been identified and uses theories developed by educational researchers, to suggest how interventions in these areas can be made more sustainable. Section 9.3 concludes by providing a summary of the recommended framework for intervention.

9.2 Discussion and recommendations

Table 9.1: Summary of identified strange attractors

Systemic Component	Issue	Details	Implications	Unique to School	Recommended Intervention
Teacher-Management Environment	Teacher Characteristics	Qualifications	The majority of teachers have adequate qualifications and additional professional development courses	All five schools	Content intervention desirable for enhancing conceptual understanding. Pedagogy and re-skilling interventions needed to create versatility in the classroom, e.g how to use individualized teaching in a large class with variable needs.
	Management Support	School Improvement Plan	To receive buy in from all education Stakeholders, including teachers and WCED, the intervention must be matched to the school's improvement plan	All five Schools	Align the intervention directly to the school's needs as provided for by the intervention plan. Suggestions and details provide in sections 4 – 9.
	Language of Instruction	Code-switching	Interesting observation, School B has 40% Xhosa	School A, School C	Observations suggest that code-switching might be

			speaking learners, but there is no code switching. Schools maintain two language sub-cultures (Bernstein) and results in distortion of conceptual understanding	School E	more a problem for teachers, than for the learners. Encourage schools to adopt language policies that discourage code switching.
Systemic Component	Issue	Details	Implications	Unique to School	Recommended Intervention
Learning Environment	Age- range of learners	Wide range of ages over 3 years	School E and School A had wide variation of ages of learners in the same Grade, from 14-22. – Due to large numbers of repeaters. Variation leads to different psychological and mental maturity, which has to be taken into account when teaching	School E School A School C	Train teachers to use multi-grade classroom management to cater for the different cognitive demands
		Narrow age range over 3 years	Spine Rd High school learners had a very narrow age range (4 years) over the three FET phase years. Leads to: Almost uniform psychological and mental needs; Matched maturity. However uniformity achieved by condonation creates other problems	Spine Rd High School	High numbers of condoned passes mean that the teacher has to use individualized instruction and remediation. MSEP can support this strategy through on-site training in individual based teaching strategies, and can provide services for remediation.
Community and Socio-economic environment	Guardians	Single parents, relatives, siblings and living on their own A result of fragmented unstable families, legacy imposed by Apartheid crafted poverty	Learners cannot access parental support and lack guidance and modeling experiences. Bandura, (1998) suggests that they will identify new models from environment – succumb to peer influence more easily	School A School C School E School B	Introduce Peer Counselling through LO, or SEEDS partners e.g Gold. Support the extension of learning day and weekend classes to provide more time for engagement with school work
	Parents Educational Level	Large numbers of learners do not know parents educational level	Points to lack of parental interest in child school performance / career development. Denies child opportunity to model on parents	School A School C School E and to a less extent, School B.	Treat learners as “Pioneer” generation. Intensive motivation, support, High Expectations / High Goal setting (Bandura, 2004)

			In-adequate supervision		LO / Learner component
Systemic Component	Issue	Details	Implications	Unique to School	Recommended Intervention
Community and Socio-economic Environment	Parental Education Level	Large numbers of parents dropped out of school before Matric	Reduced parental supervision at home. Parents might not appreciate the importance of schooling to the child's career path	School A School C School E	As above. Lobby for the inclusion of NGOs and SEEDS partners into the school to provide guidance and counselling

All these recommendations revolve around three educational development theories which should form the framework from MSEP's School-based intervention:

- a) Michael Fullan's Change Theory (Fullan, Fullan is one of the foremost educational researchers with respect to change theory. One of his first articles, *The new meaning of educational change*, (Fullan and Stiegelbauer, 1991) was for a long time hailed as the in-service provider's bible. He has since written many definitive articles about the process of change and in particular, sustainable change. Fullan's research is premised on three principles:
- i) Change is not learned, it is a process. For the change process to succeed, teachers must commit themselves to change. This means that they must be motivated and see the value in changing their practice. By implication, this also means that we (service providers) must convince teachers that the change sought is worth the sacrifice and persistence. To achieve this end, the new intervention must satisfy three conditions of the practicality ethic:
 - value congruence; i.e. the perceived change must be in line with what they aspire towards;
 - instrumentality – teachers must perceive the proposed change as useful and convenient to them and;
 - Cost-benefit analysis – the sacrifices and must be less than the perceived benefits to be derived (Doyle and Ponder, 1978). Aligning MSEP activities to the school's SIP is the best way of ensuring buy-in.
 - ii) For change to be sustained, it must be learned *in context*. Fullan (2007) argues that change must be modeled in the classroom. Short courses or workshops will only add to the knowledge repertoire of the teacher, but for the teacher to put into practice, they must see the proposed innovation in action in similar conditions to their work environment. There is therefore a need to follow up with practical demonstrations, whatever is taught in the short course. Professional, hands on development is more productive than training.
 - iii) Change must be followed by reflection. Fullan argues that service providers must include an aspect of reflection in all teacher activities. He asserts that people learn by *thinking* about what they are doing. Thus MSEP activities must be followed by reflection with teachers, so that they can plan alternative strategies or substitutes for action.

- b) Albert Bandura's Social Cognitive Theory (Wood and Bandura, 1989)
Bandura is also renowned in the field of cognitive psychology. The central notion of his cognitive theory is that learners learn through modeling of action. Self-efficacy develops from observing the effects of successful modeling of behavior. Bandura's theory is more than just rewards and punishment. He argues that humans derive intrinsic satisfaction from successfully copying behavior. Thus success is its own reward. The implication to interventions, for both learners and teachers, is to instill self-confidence in their ability to bring about change. Having explicit high expectations of learners and teachers will motivate them to achieve. The Management and Teacher components of MSEP should place emphasis on schools setting high goals and supporting them to achieve.
- c) Bernstein's Pedagogical Discourse Theory (Morais and Muller 2004)
Lastly Basil Bernstein is a renowned critical theorist. He argues that in any culture or social organization, the dominant language transmits the values and ideals of the powerful group. He identifies two types of codes used in the school; Community code and school code. Locals use community codes to describe their environment. It is this discourse, that learners use to explain or describe their experiences in class. Thus code switching does not help them to understand the nuances of the particular discipline, but only encourages them to use everyday terminology in highly specialized disciplines, leading to further confusion. School code is associated with specific disciplinary knowledge and nuances. In MSEP it was interesting to note that learners seem to do better if their teacher is a non-home language speaker. For example, at School B, the Xhosa speaking learners have learnt to express themselves well even when dealing with complex concepts, whilst their peers, struggle with the language and resort to code switching (mainly because that is how they are taught these topics). Successful schools promote the use of the language of instruction both inside and outside the classroom. Part of MSEP's modus operandus, therefore should be to discourage code-switching and challenge both teachers and learners to express scientific and mathematical terms in their specific nomenclature.

9.3 Summary and conclusion

The Researcher suggests the following actions:

- a) MSEP Management component;
1. Support and engage principals and School Management Teams in policy formulation.
 2. Advocate for the schools and lobby for infrastructure development
 3. Assist and provide training in Curriculum Planning and management
 4. Assist in the extension of the learning day to provide for afternoon support to learners
- b) Teachers component;
1. Provide content area training in the form of short courses or ACES for purposes of re-skilling
 2. Provide hands on training in pedagogy especially on issues pertaining to teaching large classes, handling multi-culturalism and multi-grade teaching
- c) Learners component
1. Assist in provision of afternoon classes; supply qualified ad-hoc staff for such activities
 3. Support learners through counseling / advocate partnerships with SEEDs members like GOLD, to deal with the development of self-efficacy and leadership

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11.0 Appendices

11.1 Appendix 1

MSEP School Profile Inventory

Introduction

Since January, MSEP has been collecting basic data from schools in order to build up a school profile inventory for each school. Most of these data was collected on forms, or was obtained on official hardcopy forms and therefore files have been opened for this data. The list below indicates the information on schools that is now available and is being continuously accumulated as the project proceed

Information Category	Information List
Management	School Improvement Plans
	Time Tables
	Basic Staffing and Enrolment form
Teachers	Target-setting information
	Teacher Qualifications
Learners	Class lists
	Matric Question Analysis
	Matric Results
	Internal Assessment Results (Schedules)

As can be expected, some schools have been more co-operative than others and hence they will have more information and detail than other schools. On the whole, schools have been very co-operative.

Weekly and monthly reports from Education Specialists will now also be available on Vula. Other electronic documentation will also be placed on Vula for circulation.

11.2 Appendix 2

MSEP Activity Reporting Template

Monitoring Report

1.0 Activity: Date:

2.0 Facilitator: Venue:

3.0 Duration:

4.0 Objectives

--

5.0 Inputs and Activity Description

--

6.0 Outputs

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7.0 Comments

General Comments:
Code Red : Issues arising, requiring urgent attention or action from PM / Director or other strands
Code Yellow: Issues arising / unfolding, requiring closer monitoring from other team members
Code Green: Issues of interest which might have a bearing on MSEP, no action required

11.3 Appendix 3 Learner Questionnaire

LEARNER QUESTIONNAIRE

Dear Learner

This questionnaire will be regarded as strictly confidential. The information required will help us to plan our programme better. We therefore appeal to you to complete it as truthfully as possible. Please write clearly and in print form. Tick the block where required.

BIOGRAPHICAL INFORMATION

NAME AND SURNAME: _____

GENDER(MALE/FEMALE): _____

DATE OF BIRTH: _____

ADDRESS: _____

TELEPHONE NO.'S: HOME: _____

CELL: _____

SCHOOL'S NAME: _____ GRADE: _____

1. WHERE WERE YOU BORN? (NAME THE PLACE & PROVINCE)

2. WHO ARE YOU CURRENTLY STAYING WITH

3. WHAT IS THE HIGHEST EDUCATIONAL QUALIFICATIONS OF YOUR

PARENTS? MOM: _____

4. WHAT IS THE HIGHEST EDUCATIONAL QUALIFICATIONS OF YOUR

PARENTS?

DAD: _____

EDUCATIONAL INFORMATION

5. IN WHICH GRADE DID YOU START AT THIS SCHOOL? GRADE _____

6. WHERE HAVE YOU RECEIVED YOUR PRIMARY EDUCATION? (NAME THE PROVINCE)

7. HAVE YOU REPEATED ANY GRADE?

YES	NO
-----	----

8. IF "YES" WHICH GRADE WAS IT? GRADE _____

9. NAME THE SUBJECTS YOU ARE PRESENTLY DOING.

10. WHY HAVE YOU CHOSEN TO DO MATHS AND SCIENCE?

(CHOOSE THE MOST APPROPRIATE ANSWER AND TICK THE BLOCK)

I WAS ALWAYS INTERESTED IN THESE SUBJECTS

I ACHIEVED GOOD RESULTS IN GRADE 9 IN THESE SUBJECTS

MY FRIENDS ARE ALL DOING THESE SUBJECTS

I WANT TO FOLLOW A CAREER IN MATHS OR SCIENCE

11. IN ONE SENTENCE, SAY WHAT YOU DO DURING WEEKENDS?

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.